

Revised syllabus of
Workshop Calculation & Science (WCS)
for 81 Engineering Trades

Please note that this syllabus is effective from 2021-22 session.

This syllabus is merged with Trade theory syllabus and will be assessed as a part of Trade Theory CBT.

List of Revised Syllabus of Workshop Calculation & Science (Engineering Trades)

| Sl. No. | Name of Trade (NSQF Level) | Duration in Year | Revised Hours 1st Year (Earlier 80 hrs.) | Revised Hours 2nd Year (Earlier 80 hrs.) |
|---------|--|------------------|--|--|
| 1. | Additive Manufacturing Technician (3D Printing) (NSQF Level - 4) | 1 | 38 | - |
| 2. | Advanced CNC Machining Tech.(NSQF Level - 5) | 2 | 38 | 34 |
| 3. | Aeronautical Structure and Equipment Fitter (NSQF Level - 5) | 2 | 40 | 22 |
| 4. | Architectural Draughtsman (NSQF Level - 5) | 2 | 40 | 36 |
| 5. | Attendant Operator (Chemical Plant) (NSQF Level - 5) | 2 | 38 | 18 |
| 6. | Basic Designer and Virtual Verifier (Mechanical) (NSQF Level - 5) | 2 | 22 | 24 |
| 7. | Carpenter (NSQF Level - 4) | 1 | 26 | - |
| 8. | Central Air Condition Plant Mechanic (NSQF Level - 5) | 2 | 40 | 34 |
| 9. | Civil Engineering Assistant (NSQF Level - 5) | 2 | 40 | 38 |
| 10. | Draughtsman (Civil) (NSQF Level - 5) | 2 | 40 | 40 |
| 11. | Draughtsman Mechanical (NSQF Level - 5) | 2 | 34 | 24 |
| 12. | Domestic Painter (NSQF Level - 4) | 1 | 18 | - |
| 13. | Electrician (NSQF Level - 5) | 2 | 30 | 32 |
| 14. | Electrician-Power Distribution (NSQF Level - 5) | 2 | 40 | 34 |
| 15. | Electronics Mechanic (NSQF Level - 5) | 2 | 35 | 16 |
| 16. | Electroplater (NSQF Level - 5) | 2 | 40 | 22 |
| 17. | Fitter (NSQF Level - 5) | 2 | 38 | 28 |
| 18. | Foundryman (NSQF Level - 4) | 1 | 36 | - |
| 19. | Information and Communication Technology System Maintenance (NSQF Level - 5) | 2 | 30 | 24 |
| 20. | Instrument Mechanic (Chemical Plant) (NSQF Level - 5) | 2 | 38 | 18 |

| Sl. No. | Name of Trade (NSQF Level) | Duration in Year | Revised Hours 1st Year (Earlier 80 hrs.) | Revised Hours 2nd Year (Earlier 80 hrs.) |
|---------|--|------------------|--|--|
| 21. | Industrial Painter (NSQF Level - 4) | 1 | 30 | - |
| 22. | Industrial Robotics & Digital Manufacturing Tech. (NSQF Level - 4) | 1 | 40 | - |
| 23. | Information Technology (NSQF Level - 5) | 2 | 24 | 24 |
| 24. | Instrument Mechanic (NSQF Level - 5) | 2 | 38 | 18 |
| 25. | In-Plant Logistics Assistant (NSQF Level - 4) | 1 | 34 | - |
| 26. | Interior Design and Decoration (NSQF Level - 4) | 1 | 32 | - |
| 27. | Laboratory Assistant (Chemical Plant) (NSQF Level - 5) | 2 | 28 | 18 |
| 28. | Lift and Escalator Mechanic (NSQF Level - 5) | 2 | 38 | 32 |
| 29. | Mechanic Agricultural Machinery (NSQF Level - 5) | 2 | 36 | 16 |
| 30. | Machinist Grinder (NSQF Level - 5) | 2 | 36 | 38 |
| 31. | Machinist (NSQF Level - 5) | 2 | 36 | 38 |
| 32. | Maintenance Mechanic (Chemical Plant) (NSQF Level - 5) | 2 | 30 | 12 |
| 33. | Manufacturing Process Control and Automation (NSQF Level - 4) | 1 | 36 | - |
| 34. | Marine Engine Fitter (NSQF Level - 4) | 1 | 30 | - |
| 35. | Marine Fitter (NSQF Level - 5) | 2 | 38 | 22 |
| 36. | Mason (Building Constructor) (NSQF Level - 3) | 1 | 36 | - |
| 37. | Mechanic Auto Body Paint Repair (NSQF Level - 4) | 1 | 40 | - |
| 38. | Mechanic Auto Body Repair (NSQF Level - 4) | 1 | 40 | - |
| 39. | Mechanic Auto Electrical and Electronics (NSQF Level - 4) | 1 | 40 | - |
| 40. | Mechanic Consumer Electronic Appliances (NSQF Level - 5) | 2 | 35 | 16 |
| 41. | Mechanic Electric Vehicle (NSQF Level - 4) | 2 | 40 | 26 |

| Sl. No. | Name of Trade (NSQF Level) | Duration in Year | Revised Hours 1st Year (Earlier 80 hrs.) | Revised Hours 2nd Year (Earlier 80 hrs.) |
|---------|--|------------------|--|--|
| 42. | Mechanic Diesel (NSQF Level - 4) | 1 | 40 | - |
| 43. | Mechanic Lens/ Prism Grinding (NSQF Level - 4) | 1 | 32 | - |
| 44. | Mechanic Motor Vehicle (NSQF Level - 5) | 2 | 40 | 34 |
| 45. | Mechanic Machine Tool Maintenance (NSQF Level - 5) | 2 | 36 | 36 |
| 46. | Mechanic Mining Machinery (NSQF Level - 5) | 2 | 34 | 30 |
| 47. | Mechanic Tractor (NSQF Level - 4) | 1 | 40 | - |
| 48. | Mechanic Two and Three-Wheeler (NSQF Level - 4) | 1 | 28 | - |
| 49. | Operator Advanced Machine Tool (NSQF Level - 5) | 2 | 36 | 36 |
| 50. | Painter (General) (NSQF Level - 5) | 2 | 18 | 30 |
| 51. | Plastic Processing Operator (NSQF Level - 4) | 1 | 30 | - |
| 52. | Plumber (NSQF Level - 4) | 1 | 32 | - |
| 53. | Pump Operator cum Mechanic (NSQF Level - 4) | 1 | 38 | - |
| 54. | Refractory Technician (NSQF Level - 5) | 2 | 38 | 28 |
| 55. | Refrigeration and Air Conditioning Technician (NSQF Level - 5) | 2 | 38 | 40 |
| 56. | Rubber Technician (NSQF Level - 4) | 1 | 38 | - |
| 57. | Sheet Metal Worker (NSQF Level - 3) | 1 | 38 | - |
| 58. | Solar Technician (Electrical) (NSQF Level - 4) | 1 | 36 | - |
| 59. | Spinning Technician (NSQF Level - 5) | 2 | 20 | 26 |
| 60. | Stone Processing Machine Operator (NSQF Level - 4) | 1 | 34 | - |
| 61. | Stone Mining Machine Operator (NSQF Level - 4) | 1 | 32 | - |
| 62. | Surveyor (NSQF Level - 5) | 2 | 40 | 40 |

| Sl. No. | Name of Trade (NSQF Level) | Duration in Year | Revised Hours 1st Year (Earlier 80 hrs.) | Revised Hours 2nd Year (Earlier 80 hrs.) |
|---------|--|------------------|--|--|
| 63. | Tool & Die Maker (Dies & Moulds) (NSQF Level - 5) | 2 | 40 | 34 |
| 64. | Tool & Die Maker (Press Tools, Jigs & Fixtures) (NSQF Level - 5) | 2 | 40 | 34 |
| 65. | Tech. Electronics System Design & Repair (NSQF Level-5) | 2 | 28 | 16 |
| 66. | Technician Medical Electronics (NSQF Level - 5) | 2 | 36 | 20 |
| 67. | Technician Mechatronics (NSQF Level - 5) | 2 | 36 | 16 |
| 68. | Technician Power Electronics Systems (NSQF Level - 5) | 2 | 34 | 16 |
| 69. | Textile Mechatronics (NSQF Level - 5) | 2 | 36 | 16 |
| 70. | Textile Wet Processing Technician (NSQF Level - 5) | 2 | 30 | 18 |
| 71. | Turner (NSQF Level - 5) | 2 | 40 | 34 |
| 72. | Vessel Navigator (NSQF Level - 5) | 2 | 30 | 18 |
| 73. | Warehouse Technician (NSQF Level - 4) | 1 | 40 | - |
| 74. | Welder (NSQF Level - 4) | 1 | 38 | - |
| 75. | Welder (GMAW & GTAW) (NSQF Level - 3) | 1 | 38 | - |
| 76. | Welder (Pipe) (NSQF Level - 3) | 1 | 38 | - |
| 77. | Welder (Structural) (NSQF Level - 3) | 1 | 38 | - |
| 78. | Welder (Fabrication & Fitting) (NSQF Level - 3) | 1 | 38 | - |
| 79. | Welder (Welding & Inspection) (NSQF Level - 3) | 1 | 38 | - |
| 80. | Weaving Technician (NSQF Level - 5) | 2 | 24 | 28 |
| 81. | Wireman (NSQF Level - 4) | 2 | 30 | 28 |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ADDITIVE MANUFACTURING TECHNICIAN (3D PRINTING) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|----------|----------|---|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | Types of plastics and its properties (warpage& shrinkage) |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |

| | | | | | | |
|-------------|--|---------|--------|----------|-----------|--|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature—Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 0 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Deleted | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 10 | |

| | | | | | | |
|-----------|---|---------|----------------------------|----------|-----------|--|
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 4 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 38 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ADVANCED CNC MACHINING TECHNICIAN (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | Only direct problems |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |

| | | | | | | |
|------------|---|--------|--------|----------|----------|-----------------|
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | Definition only |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |

| | | | | | | |
|-------------|---|---------|--------|--------------------|----------|--|
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Partially retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Partially retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure—Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 8 | |

| | | | | | | |
|-----------|---|---------|----------------------------|----------|-----------|--|
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | 4 | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 38 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------|---------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ADVANCED CNC MACHINING TECHNICIAN (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | Page No. | Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | Not to be taught in detail |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 0 | Already covered in 1st year |
| 1 | Algebra – Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | |

| | | | | | | |
|-------------|---|--------|--------|----------------------------|-----------|------------------------|
| 2 | Algebra – Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 8 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 2 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | Only overview required |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Retained | | Only overview required |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 6 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | | TOTAL REVISED HOURS | 34 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : AERONAUTICAL STRUCTURE AND EQUIPMENT FITTER (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 4 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | Only direct solving problems |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|----------|----------|--|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |

| | | | | | | |
|------------|---|---------|--------|--------------------|----------|--|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 6 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Retained | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 4 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : AERONAUTICAL STRUCTURE AND EQUIPMENT FITTER (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | Not to be taught in detail |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 4 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 0 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|---------------------------------|
| 1 | Algebra – Addition, subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | Already covered in 1 st year |
| 2 | Algebra – Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 2 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | Only intro as covered in theory |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | Only intro as covered in theory |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 6 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 22 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ARCHITECTURAL DRAUGHTSMAN (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|--------------------|----------|--|
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially retained | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity—Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |

| | | | | | | |
|------------|---|-------|--------|----------|----------|--|
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 0 | |

| | | | | | | |
|-------------|--|---------|--------|----------|----------|--|
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Deleted | | |
| 2 | Conductor, insulator, types of connections—series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |

| | | | | | | |
|----------|--|---------|----------------------------|----------|-----------|--|
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 6 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Retained | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ARCHITECTURAL DRAUGHTSMAN (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 0 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Deleted | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 6 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 6 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 4 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 4 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Retained | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Retained | | |
| VIII | Estimation and Costing | | | | 8 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ATTENDANT OPERATOR (CHEMICAL PLANT) (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |

| | | | | | | |
|------------|---|--------|--------|----------|----------|--|
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 8 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |

| | | | | | | |
|------------|---|-------|--------|----------|----------|--|
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 4 | |

| | | | | | | |
|-------------|---|---------|--------|----------|----------|--------------------------|
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | Only basics to be taught |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | Only basics to be taught |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | Only basics to be taught |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | Only basics to be taught |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | Only basics to be taught |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | Only basics to be taught |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids—cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |

| | | | | | | |
|----------|--|---------|----------------------------|----------|-----------|--|
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 38 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|--|
| NAME OF TRADE : ATTENDANT OPERATOR (CHEMICAL PLANT) (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 2 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | Should be taught in 1st Year with basics |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | Should be taught in 1st Year with basics |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | Should be taught in 1st Year with basics |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 6 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |
| 1 | Elasticity— Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Deleted | | |
| 2 | Elasticity— Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment— Different heat treatment process— Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | | | |
| | | | TOTAL REVISED HOURS | | 18 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : BASIC DESIGNER AND VIRTUAL VERIFIER (MECHANICAL) (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks /Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|----------|----------|--|
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 0 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |

| | | | | | | |
|------------|--|---------|--------|----------|----------|--|
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 0 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 0 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Deleted | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |

| | | | | | | |
|-------------|--|---------|---------|----------|-----------|--|
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 10 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines— Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |

| | | | | | | |
|---|--|---------|----------------------------|----------|-----------|--|
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 22 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : BASIC DESIGNER AND VIRTUAL VERIFIER (MECHANICAL) (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 0 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 1 | Algebra – Addition, subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | |
| 2 | Algebra – Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 0 | |
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Deleted | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 6 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 24 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : CARPENTER | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks /Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|-------------------|----------|--|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | Deleted | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 0 | |

| | | | | | | |
|------------|--|---------|--------|---------|----------|--|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Deleted | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 0 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Deleted | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines—Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 26 | |

REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES

NAME OF TRADE : CENTRAL AC PLANT MECHANIC (1st Year)

| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
|-----------|--|----------------------|--------------------------|--------------------------|---------------|-----------------------------|
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | Only Direct problem solving |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|--------------------|-----------|-------------------|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially retained | | Covered in theory |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity, numerical related to L,C,O section only | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 12 | |

| | | | | | | |
|------------|---|---------|--------|--------------------|----------|--|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Retained | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Retained | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 4 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| VIII | Mensuration | | | | 4 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Deleted | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Deleted | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------|---------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : CENTRAL AC PLANT MECHANIC (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | Page No. | Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 4 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 6 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra - Addition, subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | |

| | | | | | | |
|-------------|---|--------|----------------------------|----------|-----------|------------------|
| 2 | Algebra – Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 8 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 6 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Retained | | Only definitions |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 6 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92-95 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 34 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : CIVIL ENGINEERING ASSISTANT (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|---|--------|--------|--------------------|----------|--|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially retained | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |

| | | | | | | |
|------------|--|---------|--------|----------|----------|--|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 6 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 4 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Retained | | |
| | | | TOTAL REVISED HOURS | | 40 | |

REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES

NAME OF TRADE : CIVIL ENGINEERING ASSISTANT (2nd Year)

| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
|------------|---|----------------------|--------------------------|-------------------------------|---------------|------------------------|
| I | Friction | | | | 0 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Deleted | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 6 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 10 | |

| | | | | | | |
|-----------|---|--------|--------|----------|----------|--|
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 6 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 4 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |

| | | | | | | |
|-------------|---|--------|----------------------------|-----------|----------|--|
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 4 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Retained | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Retained | | |
| VIII | Estimation and Costing | | | | 8 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | 38 | | |

REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES**NAME OF TRADE : DOMESTIC PAINTER**

| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
|-----------|--|----------------------|--------------------------|--------------------------|---------------|------------------------|
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |

| | | | | | | |
|------------|---|--------|--------|----------|----------|--|
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 0 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 0 | |
| 1 | Mass, volume, density, weight and specific gravity. | 53-54 | 1.4.20 | Deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | Deleted | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 0 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Deleted | | |

| | | | | | | |
|-------------|--|---------|--------|---------|----------|--|
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 0 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Deleted | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 6 | |

| | | | | | | |
|-----------|---|---------|----------------------------|----------|-----------|--|
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 18 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : DRAUGHTSMAN (CIVIL) (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|--------------------|----------|--|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially retained | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |

| | | | | | | |
|-------------|--|---------|--------|----------|----------|--|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 0 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Deleted | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 8 | |

| | | | | | | |
|-----------|---|---------|----------------------------|----------|-----------|--|
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 6 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Retained | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : DRAUGHTSMAN (CIVIL) (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 0 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction – Lubrication | 8--11 | 2.1.02 | Deleted | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 6 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 10 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 6 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 4 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 4 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Retained | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Retained | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 40 | |

REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES**NAME OF TRADE : DRAUGHTSMAN (MECHANICAL) (1st Year)**

| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
|-----------|--|----------------------|--------------------------|--------------------------|---------------|------------------------|
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|----------|----------|--|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |

| | | | | | | |
|------------|---|---------|--------|----------|----------|--|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature—Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 0 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Deleted | | |
| 2 | Conductor, insulator, types of connections—series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 10 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines— Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 34 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : DRAUGHTSMAN (MECHANICAL) (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra - Addition, subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 2 | Algebra – Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 0 | |
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Deleted | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 6 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 24 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ELECTRICIAN-POWER DISTRIBUTION (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|-------------------|----------|----------------------------|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 2 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | Covered in theory syllabus |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | Covered in theory syllabus |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | Covered in theory syllabus |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 4 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |

| | | | | | | |
|------------|--|---------|--------|----------|----------|--|
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 5 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 6 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 6 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | 3 | |
| X | Trigonometry | | | | | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ELECTRICIAN-POWER DISTRIBUTION (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 2 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 6 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 10 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 2 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment - Different heat treatment process - Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 4 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Retained | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Retained | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 34 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | | |
|---|--|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|--|
| NAME OF TRADE : ELECTRICIAN (1st Year) | | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification | |
| I | Unit, Fractions | | | | 4 | | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | | |

| | | | | | | |
|------------|---|--------|--------|-------------------|----------|----------------------------|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 2 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | Covered in theory syllabus |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | Covered in theory syllabus |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | Covered in theory syllabus |
| IV | Mass, Weight, Volume and Density | | | | 3 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity— Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity— Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 5 | |

| | | | | | | |
|------------|--|---------|--------|----------|----------|---------------------------|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 0 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Deleted | | Already covered in theory |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Deleted | | Already covered in theory |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | Already covered in theory |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | Already covered in theory |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | Already covered in theory |

| | | | | | | |
|-------------|--|---------|-------------|----------|----------|---------------------------|
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | Already covered in theory |
| VIII | Mensuration | | | | 7 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | 3 | |
| X | Trigonometry | | | | | |
| 1 | Measurement of angles | 154-155 | 1.10.4 6 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.4 7 | Retained | | |

| | | | | | | |
|---|--|---------|----------------------------|----------|-----------|--|
| 3 | Trigonometrical tables | 162-172 | 1.10.4 8 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.4 9 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 30 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ELECTRICIAN (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 2 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 6 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 10 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 2 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity—Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment—Different heat treatment process—Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 4 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Retained | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Retained | | |
| VIII | Estimation and Costing | | | | 8 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 32 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ELECTRONICS MECHANIC (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|-------------------|----------|--|
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |

| | | | | | | |
|------------|--|---------|--------|----------|-----------|--|
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 12 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |

| | | | | | | |
|-------------|--|---------|--------|----------|----------|--|
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 3 | |

| | | | | | | |
|---|--|---------|----------------------------|----------|-----------|--|
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 35 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ELECTRONICS MECHANIC (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 0 | |
| 1 | Friction— Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction— Lubrication | 8--11 | 2.1.02 | Deleted | | |
| 3 | Friction— Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity— Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces— circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces— circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 8 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |
| 1 | Elasticity— Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity— Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment— Different heat treatment process— Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 8 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 16 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ELECTROPLATOR (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|-------------------|----------|--|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 8 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |

| | | | | | | |
|------------|--|---------|--------|----------|----------|--|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 6 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines— Lever and its types | 150-153 | 1.9.45 | Deleted | 2 | |
| X | Trigonometry | | | | | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ELECTROPLATOR (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 0 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction – Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| IV | Algebra | | | | 0 | |
| 1 | Algebra – Addition, subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | |
| 2 | Algebra – Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 0 | |
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 4 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Retained | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Retained | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 22 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : FITTER (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | Only direct solving problems |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|---|--------|--------|----------|----------|-------------------|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 0 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | Covered in theory |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | Covered in theory |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | Covered in theory |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | Covered in theory |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | Covered in theory |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |

| | | | | | | |
|-------------|---|---------|--------|--------------------|----------|--|
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |

| | | | | | | |
|-----------|--|---------|----------------------------|----------|-----------|--|
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Retained | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 6 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 38 | |

REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES**NAME OF TRADE : FITTER (2nd Year)**

| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
|----------------|---|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | Not to be taught in detail |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 0 | |

| | | | | | | |
|-------------|---|--------|----------------------------|----------|-----------|---------------------------------|
| 1 | Algebra – Addition, subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | Already covered in 1 st year |
| 2 | Algebra – Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 2 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 2 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | Only intro as covered in theory |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Retained | | Only intro as covered in theory |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 6 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 28 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : FOUNDRYMAN | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | Only direct solving problems |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|----------|----------|--|
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 8 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |

| | | | | | | |
|------------|---|-------|--------|----------|-----------|--|
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 12 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Retained | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Retained | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 2 | |

| | | | | | | |
|-------------|---|---------|--------|--------------------|----------|--|
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |

| | | | | | | |
|-----------|--|---------|----------------------------|----------|-----------|--|
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : IN PLANT LOGISTICS ASSISTANT | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|-------------------|----------|--|
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 2 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 0 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |

| | | | | | | |
|-------------|--|---------|--------|-------------------|-----------|--|
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 12 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially deleted | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |

| | | | | | | |
|-----------|---|---------|----------------------------|----------|-----------|--|
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 34 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : INDUSTRIAL PAINTER | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|----------|----------|--|
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 8 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 0 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Deleted | | |

| | | | | | | |
|-------------|--|---------|--------|---------|----------|--|
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 0 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Deleted | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 4 | |

| | | | | | | |
|-----------|---|---------|----------------------------|----------|-----------|--|
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 4 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 30 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADES : INDUSTRIAL ROBOTICS & DIGITAL MANUFACTURING TECHNICIAN | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|---|--------|--------|--------------------|----------|--|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained Partially | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity, numericals realted to sections L,C O. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | Deleted | 4 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |

| | | | | | | |
|-------------|--|---------|--------|--------------------|----------|--|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained Partially | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Partially retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained Partially | | |
| 2 | Conductor, insulator, types of connections—series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |

| | | | | | | |
|-----------|---|---------|----------------------------|----------|-----------|--|
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : INFORMATION & COMMUNICATION TECHNOLOGY SYSTEM MAINTENANCE (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|----------|----------|--|
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 0 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 0 | |

| | | | | | | |
|------------|---|---------|--------|----------|-----------|--|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 12 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 4 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 30 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : INFORMATION & COMMUNICATION TECHNOLOGY SYSTEM MAINTENANCE (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 0 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction – Lubrication | 8--11 | 2.1.02 | Deleted | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| IV | Algebra | | | | 8 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 6 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 24 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES NAME OF TRADE : INFORMATION & COMMUNICATION TECHNOLOGY SYSTEM MAINTENANCE (1st Year) | | | | | | |
|--|--|----------------------|--------------------------|--------------------------|---------------|------------------------|
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|----------|----------|--|
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 0 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 0 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 0 | |

| | | | | | | |
|------------|--|---------|--------|----------|-----------|--|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Deleted | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature—Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 10 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 6 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 4 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 24 | |

REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES

NAME OF TRADE : INFORMATION & COMMUNICATION TECHNOLOGY SYSTEM MAINTENANCE (2nd Year)

| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
|------------|---|----------------------|--------------------------|--------------------------|---------------|------------------------|
| I | Friction | | | | 0 | |
| 1 | Friction— Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction— Lubrication | 8--11 | 2.1.02 | Deleted | | |
| 3 | Friction— Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity— Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces— circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces— circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |

| | | | | | | |
|-------------|--|----------------------------|--------|----------|-----------|--|
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 8 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young’s modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 6 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | TOTAL REVISED HOURS | | | 24 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : INSTRUMENT MECHANIC (CHEMICAL PLANT) (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |

| | | | | | | |
|------------|---|--------|--------|----------|----------|--|
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 8 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |

| | | | | | | |
|------------|---|-------|--------|----------|----------|--|
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 4 | |

| | | | | | | |
|-------------|---|---------|--------|----------|----------|--------------------------|
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | Only basics to be taught |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | Only basics to be taught |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | Only basics to be taught |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | Only basics to be taught |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | Only basics to be taught |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | Only basics to be taught |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |

| | | | | | | |
|-----------|--|---------|----------------------------|----------|-----------|--|
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 38 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : INSTRUMENT MECHANIC (CHEMICAL PLANT) (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 2 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, coefficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| IV | Algebra | | | | 6 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young’s modulus | 41-52 | 2.5.10 | Deleted | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | | | |
| | | | TOTAL REVISED HOURS | | 18 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : INSTRUMENT MECHANIC (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|---|--------|--------|----------|----------|--|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 8 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |

| | | | | | | |
|------------|--|---------|--------|----------|----------|--------------------------|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 4 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | Only basics to be taught |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | Only basics to be taught |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | Only basics to be taught |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | Only basics to be taught |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | Only basics to be taught |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--------------------------|
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | Only basics to be taught |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 38 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|---------------------------------|----------------------|--|
| NAME OF TRADE : INSTRUMENT MECHANIC (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 2 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | Should be taught in 1st Year with basics |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | Should be taught in 1st Year with basics |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | Should be taught in 1st Year with basics |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 6 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Deleted | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment - Different heat treatment process - Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | | | |
| | | | TOTAL REVISED HOURS | | 18 | |

REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES

NAME OF TRADE : INTERIOR DESIGN & DECORATION

| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
|-----------|--|----------------------|--------------------------|--------------------------|---------------|------------------------|
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|--|--------|--------|----------|----------|--|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |
| IV | Mass, Weight, Volume and Density | | | | 0 | |
| 1 | Mass, volume, density, weight and specific gravity. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 0 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Deleted | | |

| | | | | | | |
|-------------|--|---------|--------|--------------------|----------|--|
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 6 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained Partially | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 6 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |

| | | | | | | |
|-----------|---|---------|----------------------------|-------------------|-----------|--|
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Partially deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Partially deleted | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Deleted | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Deleted | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 32 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : LABORATORY ASSISTANT (CHEMICAL PLANT) (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |

| | | | | | | |
|------------|---|--------|--------|----------|----------|--|
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |

| | | | | | | |
|-------------|--|---------|--------|----------|----------|--|
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V, I, R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |

| | | | | | | |
|-----------|---|---------|----------------------------|----------|-----------|--|
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids—cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 28 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : LABORATORY ASSISTANT (CHEMICAL PLANT) (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 2 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 6 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Deleted | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | | | |
| | | | TOTAL REVISED HOURS | | 18 | |

REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES

NAME OF TRADE : Lift & Escalator Mechanic (1st Year)

| Sr. No. | Title of the Exercise | Page No. | Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
|-----------|--|----------|--------------|--------------------------|---------------|------------------------|
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |

| | | | | | | |
|------------|---|--------|--------|-------------------|----------|--|
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 2 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 4 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 0 | |

| | | | | | | |
|------------|--|---------|--------|---------|-----------|--|
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Deleted | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 10 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Deleted | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Deleted | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Deleted | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 38 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------|---------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : ELECTRICIAN (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | Page No. | Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 2 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 6 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 10 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 2 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment - Different heat treatment process - Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 4 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Retained | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Retained | | |
| VIII | Estimation and Costing | | | | 8 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 32 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MACHINIST GRINDER (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 4 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion – Direct and indirect proportions | 32-35 | 1.2.12 | Deleted | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Partially retained | | |

| | | | | | | |
|------------|--|---------|--------|--------------------|----------|--|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially retained | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity Numerical related to L,C, O sections | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | - | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Partially retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | | | |
| | | | TOTAL REVISED HOURS | | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MACHINIST GRINDER (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra - Addition, subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | Repeated |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | Repeated |
| V | Elasticity | | | | 8 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|-------------------|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 2 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | Only Introduction |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | Not relevant |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | Not relevant |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 38 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MACHINIST (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 4 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion – Direct and indirect proportions | 32-35 | 1.2.12 | Deleted | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Partially retained | | |

| | | | | | | |
|------------|--|---------|--------|--------------------|----------|--|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially retained | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity Numerical related to L,C, O sections | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | - | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Partially retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | | | |
| | | | TOTAL REVISED HOURS | | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MACHINIST (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra - Addition, subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | Repeated |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | Repeated |
| V | Elasticity | | | | 8 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|-------------------|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 2 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | Only Introduction |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | Not relevant |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | Not relevant |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 38 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MAINTENANCE MECHANIC (CHEMICAL PLANT) (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|---|---------|--------|----------|----------|--------------------------|
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 4 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | Only basics to be taught |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | Only basics to be taught |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | Only basics to be taught |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | Only basics to be taught |

| | | | | | | |
|-------------|---|---------|---------|----------------------------|-----------|--------------------------|
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | Only basics to be taught |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | Only basics to be taught |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | | TOTAL REVISED HOURS | 30 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : INSTRUMENT MECHANIC (CHEMICAL PLANT) (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 2 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, coefficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra – Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra – Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |

| | | | | | | |
|-------------|---|--------|----------------------------|---------|-----------|--|
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Deleted | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | | | |
| | | | TOTAL REVISED HOURS | | 12 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MANUFACTURING PROCESS CONTROL AND AUTOMATION | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | Number systems |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|--|---------|--------|-------------------|----------|--|
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 6 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 8 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADES : MARINE ENGINE FITTER | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained Partially | | |

| | | | | | | |
|------------|--|---------|--------|--------------------|----------|--|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity, numericals related to sections L,C O. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | Deleted | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained Partially | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Retained | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Retained | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Partially retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained Partially | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 30 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MARINE FITTER (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | Only direct solving problems |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |

| | | | | | | |
|------------|--|---------|--------|--------------------|----------|--|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 8 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Retained | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Retained | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |

| | | | | | | |
|-------------|---|---------|---------|----------|----------|--|
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Retained | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 6 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MARINE FITTER (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | Basics only |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra – Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | Already covered in 1 st year |
| 2 | Algebra – Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 2 | |

| | | | | | | |
|-------------|---|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 2 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Retained | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 8 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 22 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MASON (BUILDING CONSTRUCTOR) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 8 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |

| | | | | | | |
|------------|---|---------|--------|----------|----------|--|
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Retained | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 0 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Deleted | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | | | |
| X | Trigonometry | | | | 6 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC AUTO BODY PAINT REPAIR | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 8 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |

| | | | | | | |
|------------|--|---------|--------|--------------------|-----------|--|
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 10 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained Partially | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Retained | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Partially retained | | |
| VII | Basic Electricity | | | | 6 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained Partially | | Some topics also covered in theory syllabus. |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |

| | | | | | | |
|-------------|---|---------|---------|----------------------------|-----------|--|
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | | TOTAL REVISED HOURS | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC AUTO BODY PAINT REPAIR | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 8 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |

| | | | | | | |
|------------|--|---------|--------|--------------------|----------|--|
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 4 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Partially retained | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Partially retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure , gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Partially retained | | |
| VII | Basic Electricity | | | | 6 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained Partially | | Some topics also covered in theory syllabus. |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 6 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC AGRICULTURAL MACHINERY (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | Simple calculations only |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|---|---------|--------|--------------------|----------|-------------|
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity, numerical related to L,C,O section only | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 4 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | Only basics |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | Basics only |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | partially retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |

| | | | | | | |
|-------------|--|---------|---------|----------------------------|-----------|-------------|
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 4 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Retained | | Only Basics |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | | TOTAL REVISED HOURS | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|------------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC AGRICULTURAL MACHINERY (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books ' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 4 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | Only theory |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | Only theory |
| 3 | Friction Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | |
| 2 | Algebra Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 0 | |

| | | | | | | |
|-------------|---|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 12 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 16 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC AUTO ELECTRICAL & ELECTRONICS | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |

| | | | | | | |
|------------|--|---------|--------|-------------------|-----------|-----------------|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 4 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | Simple problems |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 0 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Deleted | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 10 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 4 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC CONSUMER ELECTRONIC APPLIANCES (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|--|---------|--------|-------------------|-----------|--|
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 12 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 3 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 35 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC CONSUMER ELECTRONIC APPLIANCES (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 0 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction – Lubrication | 8--11 | 2.1.02 | Deleted | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut-out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut-out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 8 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |

| | | | | | | |
|-------------|---|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 8 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 16 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC DIESEL | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | Simple calculations only |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |

| | | | | | | |
|------------|---|---------|--------|--------------------|----------|-------------|
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity, numerical related to L,C,O section only | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 4 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | Only basics |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | Basics only |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | partially retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |

| | | | | | | |
|-------------|--|---------|---------|----------------------------|-----------|-------------|
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Retained | | Only Basics |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | | TOTAL REVISED HOURS | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC ELECTRIC VEHICLE (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 2 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|--|---------|--------|-------------------|-----------|--|
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 12 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially deleted | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC ELECTRIC VEHICLE (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 4 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 6 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 2 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment - Different heat treatment process - Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Retained | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Retained | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 26 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-----------------------------------|
| NAME OF TRADE : MECHANIC LENS/ PRISM GRINDING | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | Simple calculations only |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | About Glass and Plastic materials |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |

| | | | | | | |
|------------|--|---------|--------|--------------------|----------|---|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | Properties of Glass and Plastic materials |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | Basics only |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | partially retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |

| | | | | | | |
|-------------|--|---------|---------|----------------------------|-----------|-------------|
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Retained | | Only Basics |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | | TOTAL REVISED HOURS | 32 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC MACHINE TOOL MAINTENANCE (1st Year) | | | | | | |
| TOOL | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 4 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion – Direct and indirect proportions | 32-35 | 1.2.12 | Deleted | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |

| | | | | | | |
|------------|--|-------|--------|--------------------|----------|--|
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Partially retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially retained | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity Numerical related to L,C, O sections | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | - | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Partially retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | | | |
| | | | TOTAL REVISED HOURS | | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC MACHINE TOOL MAINTENANCE TOOL (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 4 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 4 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra - Addition, subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 8 | |

| | | | | | | |
|-------------|---|--------|----------------------------|----------|-----------|-------------------|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 8 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | Only Introduction |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | Not relevant |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | Not relevant |
| VIII | Estimation and Costing | | | | 8 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 36 | |

REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES**NAME OF TRADE : MECHANIC MINING MACHINERY (1st Year)**

| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
|------------|--|----------------------|--------------------------|--------------------------|---------------|------------------------|
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|--|---------|--------|----------|----------|---------------------|
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | Only basic problems |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | Only basic |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Retained | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 6 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |

| | | | | | | |
|-------------|--|---------|---------|----------------------------|-----------|-------------|
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 6 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 2 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | Only Basics |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Deleted | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Deleted | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | | TOTAL REVISED HOURS | 34 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC MINING MACHINERY (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | Only theory |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | Only theory |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | | | Only theory |
| II | Centre of Gravity | | | | 2 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | Only theory |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra – Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | |
| 2 | Algebra – Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 8 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 2 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 12 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 30 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC MOTOR VEHICLE (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |

| | | | | | | |
|------------|--|---------|--------|----------|----------|---------------------|
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | Only basic problems |
| V | Speed and Velocity, Work, Power and Energy | | | | 8 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | Only basic |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Retained | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 6 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |

| | | | | | | |
|-------------|--|---------|---------|----------------------------|-----------|-------------|
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 6 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 2 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | Only Basics |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Deleted | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Deleted | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | | TOTAL REVISED HOURS | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC MOTOR VEHICLE (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | Only theory |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | Only theory |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | | | Only theory |
| II | Centre of Gravity | | | | 2 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | Only theory |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 6 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra - Addition, subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 8 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 2 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 34 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC TRACTOR | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | Simple calculations only |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |

| | | | | | | |
|------------|---|-------|--------|----------|----------|-------------|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity, numerical related to L,C,O section only | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 4 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | Only basics |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | Basics only |
| VII | Basic Electricity | | | | 2 | |

| | | | | | | |
|-------------|---|---------|---------|--------------------|----------|-------------|
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | partially retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Retained | | Only Basics |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |

| | | | | | | |
|---|--|---------|---------|----------------------------|-----------|--|
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | | TOTAL REVISED HOURS | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|----------------------|--------------------------|--------------------------|---------------|------------------------|
| NAME OF TRADE : OPERATOR ADVANCED MACHINE TOOL (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 4 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion – Direct and indirect proportions | 32-35 | 1.2.12 | Deleted | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Partially retained | | |

| | | | | | | |
|------------|--|-------|--------|--------------------|----------|--|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially retained | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity Numerical related to L,C, O sections | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | - | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Partially retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |

| | | | | | | |
|-------------|---|----------------------------|---------|----------|-----------|--|
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | | | |
| | | TOTAL REVISED HOURS | | | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : OPERATOR ADVANCED MACHINE TOOL (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra - Addition, subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | Repeated |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | Repeated |
| V | Elasticity | | | | 8 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|-------------------|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 2 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | Only Introduction |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | Not relevant |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | Not relevant |
| VIII | Estimation and Costing | | | | 8 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : PAINTER (GENERAL) (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 0 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|--|---------|--------|---------|----------|--|
| IV | Mass, Weight, Volume and Density | | | | 0 | |
| 1 | Mass, volume, density, weight and specific gravity. | 53-54 | 1.4.20 | Deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | Deleted | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 0 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Deleted | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 0 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Deleted | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |

| | | | | | | | |
|-------------|--|----------------------------|---------|----------|----------|-----------|--|
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | | |
| VIII | Mensuration | | | | 6 | | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | | |
| IX | Levers and Simple machines | | | | 0 | | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | | |
| 2 | Lever & Simple machines— Lever and its types | 150-153 | 1.9.45 | Deleted | | | |
| X | Trigonometry | | | | 2 | | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | | |
| | | TOTAL REVISED HOURS | | | | 18 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : PAINTER (GENERAL) (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 0 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction – Lubrication | 8--11 | 2.1.02 | Deleted | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 10 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 6 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Deleted | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 4 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Retained | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Retained | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 30 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : PLUMBER | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |

| | | | | | | |
|------------|--|-------|--------|-------------------|----------|--|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | Deleted | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |

| | | | | | | |
|-------------|---|----------------------------|---------|----------|-----------|--|
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | TOTAL REVISED HOURS | | | 32 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|---|
| NAME OF TRADES : PLASTIC PROCESSING OPERATOR | | | | | | |
| Sr. No. | Title of the Exercise | NIMI Books' Page No. | NIMI Books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 2 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | Properties and uses Polymer, thermoplastic and thermoset material |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |

| | | | | | | |
|------------|---|-------|--------|--------------------|----------|--|
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained Partially | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | Deleted | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Retained | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Retained | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure , gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Partially retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained Partially | | |

| | | | | | | |
|-------------|--|---------|---------|----------|----------|--|
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 4 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |

| | | | | | | |
|---|---|---------|----------------------------|-----------|--|--|
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | 30 | | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : PLUMBER | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |

| | | | | | | |
|------------|--|-------|--------|-------------------|----------|--|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | Deleted | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 32 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : PUMP OPERATOR CUM MECHANIC | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | Simple calculations only |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |

| | | | | | | |
|------------|---|---------|--------|--------------------|----------|-------------|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity, numerical related to L,C,O section only | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 4 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | Only basics |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | Basics only |
| VII | Basic Electricity | | | | 6 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | partially retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|-------------|
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Retained | | Only Basics |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 38 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : REFRACTORY TECHNICIAN (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | Only direct solving problems |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 8 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |

| | | | | | | |
|------------|---|---------|--------|--------------------|-----------|--|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 12 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Retained | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Retained | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |

| | | | | | | |
|-------------|--|---------|---------|----------------------------|-----------|--|
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | | TOTAL REVISED HOURS | 38 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : REFRACTORY TECHNICIAN (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 0 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | |
| 2 | Friction – Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra – Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | Already covered in 1 st year |
| 2 | Algebra – Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 2 | |

| | | | | | | |
|-------------|---|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 8 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Retained | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 6 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 28 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : REFRIGERATION & AIR CONDITIONING (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | Only Direct problem solving |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |

| | | | | | | |
|------------|---|-------|--------|--------------------|-----------|-------------------|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially retained | | Covered in theory |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity, numerical related to L,C,O section only | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 12 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Retained | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Retained | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 4 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Deleted | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Deleted | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 38 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : REFRIGERATION & AIR CONDITIONING (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra - Addition, subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 8 | |

| | | | | | | |
|-------------|---|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 8 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Retained | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 6 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92-95 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : MECHANIC DIESEL | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | Simple calculations only |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | More about Rubber materials |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |

| | | | | | | |
|------------|--|---------|--------|--------------------|----------|-------------|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | Only basics |
| VI | Heat & Temperature and Pressure | | | | 8 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Retained | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Retained | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | Basics only |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | partially retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |

| | | | | | | |
|-------------|--|---------|---------|----------------------------|-----------|-------------|
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Retained | | Only Basics |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Deleted | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Deleted | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | | TOTAL REVISED HOURS | 38 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADES : SHEET METAL WORKER | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained Partially | | |

| | | | | | | |
|------------|--|---------|--------|--------------------|----------|--|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity, numericals related to sections L,C O. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | Deleted | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained Partially | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Partially retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained Partially | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines— Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 38 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : SOLAR TECHNICIAN (ELECTRICAL) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 2 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|---|---------|--------|----------|----------|--|
| IV | Mass, Weight, Volume and Density | | | | 0 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 8 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |

| | | | | | | |
|-------------|---|---------|----------------------------|-------------------|-----------|--|
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 6 | Electrical power, HP , energy and units of electrical energy | 118-120 | 1.7.38 | Partially deleted | | |
| VIII | Mensuration | | | | 4 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 6 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------|---------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : SPINNING TECHNICIAN (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | Page No. | Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | Properties of yarn |

| | | | | | | |
|------------|---|---------|--------|----------|----------|--|
| IV | Mass, Weight, Volume and Density | | | | 0 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 2 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 20 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : SPINNING TECHNICIAN (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 2 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 4 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 6 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 8 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 26 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : STONE MINING MACHINE OPERATOR | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 4 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion – Direct and indirect proportions | 32-35 | 1.2.12 | Deleted | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Partially retained | | |

| | | | | | | |
|------------|--|---------|--------|--------------------|----------|--|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially retained | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 2 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | - | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Partially retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | | | |
| | | | TOTAL REVISED HOURS | | 32 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : STONE PROCESSING MACHINE OPERATOR | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 4 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion – Direct and indirect proportions | 32-35 | 1.2.12 | Deleted | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Partially retained | | |

| | | | | | | |
|------------|--|---------|--------|--------------------|----------|--|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Partially retained | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 2 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | - | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Partially retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | | | |
| | | | TOTAL REVISED HOURS | | 34 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : SURVEYOR (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|--|---------|--------|--------------------|----------|--|
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Partially retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 0 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | | | |

| | | | | | |
|-------------|--|---------|----------------------------|-----------|-----------|
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | | |
| VIII | Mensuration | | | | 10 |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | | |
| IX | Levers and Simple machines | | | | 0 |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | | |
| X | Trigonometry | | | | 6 |
| 1 | Measurement of angles | 154-155 | 1.10.46 | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | | |
| | | | TOTAL REVISED HOURS | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : SURVEYOR (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 0 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction – Lubrication | 8--11 | 2.1.02 | Deleted | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 14 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 12 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Deleted | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 4 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Retained | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TECHNICIAN ELECTRONICS SYSTEM DESIGN AND REPAIR (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 0 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|---|---------|--------|-------------------|-----------|--|
| IV | Mass, Weight, Volume and Density | | | | 0 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 12 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 3 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 29 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TECHNICIAN ELECTRONICS SYSTEM DESIGN AND REPAIR (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 0 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction – Lubrication | 8--11 | 2.1.02 | Deleted | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut-out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 8 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |

| | | | | | | |
|-------------|---|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 8 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 16 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------|---------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TECHNICIAN MECHATRONICS (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | Page No. | Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | Number systems |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |

| | | | | | | |
|------------|--|-------|--------|-------------------|----------|--|
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 6 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 8 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |

| | | | | | | |
|-------------|---|---------|---------|----------|----------|--|
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |

| | | | | | | |
|---|--|---------|----------------------------|---------|-----------|--|
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------|---------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TECHNICIAN MECHATRONICS (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | Page No. | Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | Number systems |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |

| | | | | | | |
|------------|--|---------|--------|-------------------|----------|--|
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 6 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 8 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids— cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines— Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TECHNICIAN MEDICAL ELECTRONICS (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|--|---------|--------|-------------------|-----------|--|
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 12 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 4 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TECHNICIAN MEDICAL ELECTRONICS (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 0 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction – Lubrication | 8--11 | 2.1.02 | Deleted | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut-out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut-out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 8 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |

| | | | | | | |
|-------------|---|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 12 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 20 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TECHNICIAN POWER ELECTRONIC SYSTEMS (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|---|---------|--------|----------|-----------|--|
| IV | Mass, Weight, Volume and Density | | | | 0 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 12 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |

| | | | | | | |
|-------------|--|---------|---------|----------------------------|-----------|--|
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 3 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | | TOTAL REVISED HOURS | 33 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TECHNICIAN POWER ELECTRONIC SYSTEMS (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 0 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction – Lubrication | 8--11 | 2.1.02 | Deleted | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut-out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut-out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 8 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |

| | | | | | | |
|-------------|---|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 8 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 16 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TEXTILE MECHATRONICS (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | Number systems |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |

| | | | | | | |
|------------|--|-------|--------|-------------------|----------|--|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 6 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.23 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 8 | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 36 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TEXTILE MECHATRONICS (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 0 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction – Lubrication | 8--11 | 2.1.02 | Deleted | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut-out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut-out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 8 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |
| V | Elasticity | | | | 0 | |

| | | | | | | |
|-------------|---|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 8 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 16 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TEXTILE WET PROCESSING TECHNICIAN (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.0 1 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.0 2 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.0 3 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.0 4 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.0 5 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.0 6 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.0 7 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.0 8 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.0 9 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.1 0 | Retained | | |

| | | | | | | |
|------------|--|--------|------------|----------|----------|--|
| 4 | Ratio and proportion | 30-31 | 1.2.1 1 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.1 2 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.1 3 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.1 4 | Retained | | |
| III | Material Science | | | | 4 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.1 5 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.1 6 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.1 7 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.1 8 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.1 9 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.2 0 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.2 1 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.2 2 | Retained | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.2 3 | Retained | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.2 4 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.2 5 | Deleted | | |

| | | | | | | |
|------------|--|---------|------------|----------|----------|--------------------------|
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.2 6 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.2 7 | Retained | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.2 8 | Retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.2 9 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.3 0 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.3 1 | Retained | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.3 2 | Retained | | |
| VII | Basic Electricity | | | | 4 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC their comparison, voltage, resistance and their units | 98 | 1.7.3 3 | Retained | | Only basics to be taught |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.3 4 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.3 5 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.3 6 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.3 7 | Retained | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.3 8 | Retained | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|--|
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.3 9 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.4 0 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.4 1 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.4 2 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.4 3 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.4 4 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.4 5 | Deleted | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10. 46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10. 47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10. 48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10. 49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 30 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|----------------------------------|--------------------------------------|----------------------|--|
| NAME OF TRADE : TEXTILE WET PROCESSING TECHNICIAN (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books ' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 2 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.0 1 | Retained | | Should be taught in 1st Year with basics |
| 2 | Friction - Lubrication | 8--11 | 2.1.0 2 | Retained | | Should be taught in 1st Year with basics |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.0 3 | Retained | | Should be taught in 1st Year with basics |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.0 4 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.0 5 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.0 6 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.0 7 | Deleted | | |
| IV | Algebra | | | | 6 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.0 8 | Retained | | |

| | | | | | | |
|-------------|---|--------|--------------------------------|----------|-----------|--|
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.0 9 | Retained | | |
| V | Elasticity | | | | 0 | |
| 1 | Elasticity – Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.1 0 | Deleted | | |
| 2 | Elasticity – Ultimate stress and working stress | 53-55 | 2.5.1 1 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.1 2 | Deleted | | |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.1 3 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.1 4 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.1 5 | Deleted | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.1 6 | | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.1 7 | | | |
| | | | TOTAL REVISED HOURS | | 18 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TOOL & DIE MAKER (DIES & MOULDS) (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | Only direct problems |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained | | |

| | | | | | | |
|------------|---|-------|--------|--------------------|----------|-----------------|
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | Definition only |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Partially retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Partially retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 2 | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | 4 | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TOOL & DIE MAKER (DIES & MOULDS) (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | Not to be taught in detail |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Retained | | |
| IV | Algebra | | | | 0 | Already covered in 1st year |
| 1 | Algebra— Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | |
| 2 | Algebra— Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 8 | |

| | | | | | | |
|-------------|---|--------|----------------------------|----------|-----------|------------------------|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 2 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | Only overview required |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Retained | | Only overview required |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 6 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 34 | |

REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES

NAME OF TRADE : TOOL & DIE MAKER (PTJ&F) (1st Year)

| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
|-----------|--|----------------------|--------------------------|--------------------------|---------------|------------------------|
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.0 1 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.0 2 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.0 3 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.0 4 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.0 5 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.0 6 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.0 7 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.0 8 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.0 9 | Retained | | Only direct problems |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.1 0 | Retained | | |

| | | | | | | |
|------------|--|--------|------------|----------|----------|-----------------|
| 4 | Ratio and proportion | 30-31 | 1.2.1 1 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.1 2 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.1 3 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.1 4 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.1 5 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.1 6 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.1 7 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.1 8 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.1 9 | Retained | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.2 0 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.2 1 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity - Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.2 2 | Deleted | | |
| 2 | Speed and velocity - Related problems on speed & velocity | 65-68 | 1.5.2 3 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.2 4 | Retained | | Definition only |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.2 5 | Retained | | |

| | | | | | | |
|-------------|---|---------|------------|--------------------|----------|--|
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.2 6 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.2 7 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.2 8 | Partially retained | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.2 9 | Partially retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.3 0 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.3 1 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.3 2 | Deleted | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.3 3 | Retained | | |
| 2 | Conductor, insulator, types of connections – series and parallel | 102-107 | 1.7.3 4 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.3 5 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.3 6 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.3 7 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.3 8 | Deleted | | |
| VIII | Mensuration | | | | 8 | |

| | | | | | | |
|-----------|---|---------|--------------------------------|----------|-----------|--|
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.3 9 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.4 0 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.4 1 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.4 2 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.4 3 | Retained | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.4 4 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.4 5 | Retained | | |
| X | Trigonometry | | | | | |
| 1 | Measurement of angles | 154-155 | 1.10. 46 | Retained | 4 | |
| 2 | Trigonometrical ratios | 156-161 | 1.10. 47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10. 48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10. 49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|----------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TOOL & DIE MAKER (PTJ&F) (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books ' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.0 1 | Retained | | Not to be taught in detail |
| 2 | Friction - Lubrication | 8--11 | 2.1.0 2 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.0 3 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.0 4 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.0 5 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.0 6 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.0 7 | Retained | | |
| IV | Algebra | | | | 0 | Already covered in 1st year |
| 1 | Algebra— Addition , subtraction, multiplication & division | 32--35 | 2.4.0 8 | Deleted | | |

| | | | | | | |
|-------------|---|--------|--------------------------------|----------|-----------|------------------------|
| 2 | Algebra – Theory of indices, algebraic formula, related problems | 36--40 | 2.4.0 9 | Deleted | | |
| V | Elasticity | | | | 8 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.1 0 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.1 1 | Retained | | |
| VI | Heat Treatment | | | | 2 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.1 2 | Retained | | Only overview required |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.1 3 | Retained | | Only overview required |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.1 4 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.1 5 | Deleted | | |
| VIII | Estimation and Costing | | | | 6 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.1 6 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.1 7 | Retained | | |
| | | | TOTAL REVISED HOURS | | 34 | |

REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES

NAME OF TRADE : TURNER (1st Year)

| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
|-----------|--|----------------------|--------------------------|--------------------------|---------------|------------------------|
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.0 1 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.0 2 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.0 3 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.0 4 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.0 5 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.0 6 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.0 7 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.0 8 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.0 9 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.1 0 | Retained | | |

| | | | | | | |
|------------|--|--------|------------|----------|----------|--|
| 4 | Ratio and proportion | 30-31 | 1.2.1 1 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.1 2 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.1 3 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.1 4 | Retained | | |
| III | Material Science | | | | 6 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.1 5 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.1 6 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.1 7 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.1 8 | Retained | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.1 9 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity, numericals related to sections L,C O. | 53-54 | 1.4.2 0 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.2 1 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.2 2 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.2 3 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.2 4 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.2 5 | Deleted | | |

| | | | | | | |
|------------|---|---------|------------|--------------------|----------|--|
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.2 6 | Deleted | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.2 7 | Deleted | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.2 8 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.2 9 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.3 0 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.3 1 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.3 2 | Retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced , electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.3 3 | Partially retained | | |
| 2 | Conductor, insulator, types of connections—series and parallel | 102-107 | 1.7.3 4 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.3 5 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.3 6 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.3 7 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.3 8 | Deleted | | |

| | | | | | | |
|-------------|---|---------|--------------------------------|----------|-----------|--|
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.3 9 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.4 0 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.4 1 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.4 2 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.4 3 | Deleted | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.4 4 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.4 5 | Retained | 4 | |
| X | Trigonometry | | | | | |
| 1 | Measurement of angles | 154-155 | 1.10. 46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10. 47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10. 48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10. 49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|----------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : TURNER (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books ' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.0 1 | Retained | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.0 2 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.0 3 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.0 4 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 8 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.0 5 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.0 6 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.0 7 | Retained | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.0 8 | Deleted | | Already covered in 1st year |

| | | | | | | |
|-------------|--|--------|------------|----------------------------|-----------|-----------------------------|
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.0 9 | Deleted | | Already covered in 1st year |
| V | Elasticity | | | | 8 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.1 0 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.1 1 | Retained | | |
| VI | Heat Treatment | | | | 2 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.1 2 | Retained | | Only basics |
| 2 | Heat treatment - Different heat treatment process - Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.1 3 | Deleted | | Part of theory syllabus |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.1 4 | Deleted | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.1 5 | Deleted | | |
| VIII | Estimation and Costing | | | | | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.1 6 | Retained | 6 | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.1 7 | Retained | | |
| | | | | TOTAL REVISED HOURS | 34 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : VESSEL NAVIGATOR (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | Only direct solving problems |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |

| | | | | | | |
|------------|---|--------|--------|----------|----------|--|
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 0 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |

| | | | | | | |
|-------------|---|---------|--------|--------------------|----------|--|
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat— Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially retained | | |
| 2 | Conductor, insulator, types of connections—series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids—cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |

| | | | | | | |
|-----------|--|---------|----------------------------|----------|-----------|--|
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Retained | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Deleted | | |
| X | Trigonometry | | | | 6 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 30 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : VESSEL NAVIGATOR (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 6 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | Not to be taught in detail |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction - Co- efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Retained | | |
| II | Centre of Gravity | | | | 4 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra – Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | Already covered in 1 st year |
| 2 | Algebra – Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 2 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|---------------------------------|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Retained | | Only intro as covered in theory |
| 2 | Heat treatment – Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Retained | | Only intro as covered in theory |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 6 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 18 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : WAREHOUSE TECHNICIAN | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | Simple calculations only |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 2 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|---|---------|--------|----------|-----------|-------------|
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity, numerical related to L,C,O section only | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | Only basics |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | Basics only |
| VII | Basic Electricity | | | | 12 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |

| | | | | | | |
|-------------|--|---------|---------|----------------------------|-----------|-------------|
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 4 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 6 | |
| 1 | Simple machines - Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Retained | | Only Basics |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | | TOTAL REVISED HOURS | 40 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|---------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : WEAVING TECHNICIAN (1st Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 0 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Deleted | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Deleted | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | |

| | | | | | | |
|------------|--|---------|--------|----------|----------|---------------------|
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | Only basic problems |
| V | Speed and Velocity, Work, Power and Energy | | | | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | Only basic |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Retained | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Retained | | |
| VII | Basic Electricity | | | | 6 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |

| | | | | | | |
|-------------|--|---------|----------------------------|----------|-----------|-------------|
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 6 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 0 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Deleted | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Deleted | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Deleted | | |
| 4 | Surface area and volume of solids – cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Deleted | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 2 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines - Lever and its types | 150-153 | 1.9.45 | Retained | | Only Basics |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Deleted | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Deleted | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Deleted | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 24 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|---|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : WEAVING TECHNICIAN (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 4 | |
| 1 | Friction - Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Retained | | Only theory |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | Only theory |
| 3 | Friction - Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity - Centre of gravity and its practical application | 14--23 | 2.2.04 | Retained | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 6 | |
| 1 | Area of cut out regular surfaces - circle, segment and sector of circle | 24--26 | 2.3.05 | Retained | | |
| 2 | Related problems of area of cut out regular surfaces - circle, segment and sector of circle | 27--28 | 2.3.06 | Retained | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 0 | |
| 1 | Algebra - Addition, subtraction, multiplication & division | 32--35 | 2.4.08 | Deleted | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Deleted | | |
| V | Elasticity | | | | 8 | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Retained | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment - Different heat treatment process – Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 0 | |
| 1 | Profit and loss – Simple problems on profit & loss | 67--72 | 2.7.14 | Deleted | | |
| 2 | Profit and loss – Simple and compound interest | 73--84 | 2.7.15 | Deleted | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 28 | |

REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES

NAME OF TRADES :

1. Welder (NSQF Level – 4 , 2. Welder (GMAW & GTAW) (NSQF Level - 3)
3. Welder (Pipe) (NSQF Level - 3), 4. Welder (Structural) (NSQF Level - 3)
5. Welder (Fabrication & Fitting) (NSQF Level - 3), 6. Welder (Welding & Inspection) (NSQF Level - 3)

| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
|------------|--|----------------------|--------------------------|--------------------------|---------------|------------------------|
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | 6 | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 6 | |

| | | | | | | |
|-----------|---|--------|--------|--------------------|----------|--|
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Retained | | |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Retained Partially | | |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Retained | | |
| IV | Mass, Weight, Volume and Density | | | | 4 | |
| 1 | Mass, volume, density, weight and specific gravity, numericals related to sections L,C O. | 53-54 | 1.4.20 | Retained | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Retained | | |
| V | Speed and Velocity, Work, Power and Energy | | | Deleted | 0 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Deleted | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Deleted | | |
| VI | Heat & Temperature and Pressure | | | | 6 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Deleted | | |
| 3 | Heat & Temperature - Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | 78-79 | 1.6.28 | Retained Partially | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Retained | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure - Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Partially retained | | |

| | | | | | | |
|-------------|---|---------|----------------------------|--------------------|-----------|--|
| VII | Basic Electricity | | | | 2 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Retained Partially | | |
| 2 | Conductor, insulator, types of connections—series and parallel | 102-107 | 1.7.34 | Deleted | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Deleted | | |
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Deleted | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Deleted | | |
| VIII | Mensuration | | | | 8 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Retained | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 2 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 38 | |

REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES

NAME OF TRADE : WIREMAN (1st Year)

| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Deleted | Revised Hours | Remarks/ Justification |
|------------|--|----------------------|--------------------------|--------------------------|---------------|----------------------------|
| I | Unit, Fractions | | | | 4 | |
| 1 | Classification of unit system | 1 | 1.1.01 | Retained | | |
| 2 | Fundamental and Derived units F.P.S, C.G.S, M.K.S and SI units | 2--3 | 1.1.02 | Retained | | |
| 3 | Measurement units and conversion | 4--13 | 1.1.03 | Retained | | |
| 4 | Factors, HCF, LCM and problems | 14 | 1.1.04 | Retained | | |
| 5 | Fractions - Addition, subtraction, multiplication & division | 15--16 | 1.1.05 | Retained | | |
| 6 | Decimal fractions - Addition, subtraction, multiplication & division | 17-19 | 1.1.06 | Retained | | |
| 7 | Solving problems by using calculator | 20-26 | 1.1.07 | Retained | | |
| II | Square root, Ratio and Proportions, Percentage | | | | 6 | |
| 1 | Square and square root | 27 | 1.2.08 | Retained | | |
| 2 | Simple problems using calculator | 28 | 1.2.09 | Retained | | |
| 3 | Applications of Pythagoras theorem and related problems | 29 | 1.2.10 | Retained | | |
| 4 | Ratio and proportion | 30-31 | 1.2.11 | Retained | | |
| 5 | Ratio and proportion - Direct and indirect proportions | 32-35 | 1.2.12 | Retained | | |
| 6 | Percentage | 36-38 | 1.2.13 | Retained | | |
| 7 | Percentage - Changing percentage to decimal and fraction | 39 | 1.2.14 | Retained | | |
| III | Material Science | | | | 2 | |
| 1 | Types metals, types of ferrous and non ferrous metals | 40 -41 | 1.3.15 | Retained | | |
| 2 | Physical and mechanical properties of metals | 42-44 | 1.3.16 | Deleted | | Covered in theory syllabus |
| 3 | Introduction of iron and cast iron | 45-47 | 1.3.17 | Retained | | |
| 4 | Difference between iron & steel, alloy steel and carbon steel | 48-49 | 1.3.18 | Deleted | | Covered in theory syllabus |
| 5 | Properties and uses of rubber, timber and insulating materials | 50-52 | 1.3.19 | Deleted | | Covered in theory syllabus |

| | | | | | | |
|------------|--|---------|--------|-------------------|----------|--|
| IV | Mass, Weight, Volume and Density | | | | 2 | |
| 1 | Mass, volume, density, weight and specific gravity | 53-54 | 1.4.20 | Partially deleted | | |
| 2 | Related problems for mass, volume, density, weight and specific gravity | 55-60 | 1.4.21 | Deleted | | |
| V | Speed and Velocity, Work, Power and Energy | | | | 2 | |
| 1 | Speed and velocity – Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | 61-64 | 1.5.22 | Deleted | | |
| 2 | Speed and velocity – Related problems on speed & velocity | 65-68 | 1.5.23 | Deleted | | |
| 3 | Work, power, energy, HP, IHP, BHP and efficiency | 69-71 | 1.5.24 | Retained | | |
| 4 | Potential energy, kinetic energy and related problems with assignment | 72-73 | 1.5.25 | Retained | | |
| VI | Heat & Temperature and Pressure | | | | 4 | |
| 1 | Concept of heat and temperature, effects of heat, difference between heat and temperature, boiling point & melting point of different metals and non-metals | 74-75 | 1.6.26 | Retained | | |
| 2 | Scales of temperature, Celsius, Fahrenheit, kelvin and conversion between scales of temperature | 76-77 | 1.6.27 | Retained | | |
| 3 | Heat & Temperature – Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat – Conduction, convection and radiation | 78-79 | 1.6.28 | Deleted | | |
| 4 | Co-efficient of linear expansion and related problems with assignments | 80-81 | 1.6.29 | Deleted | | |
| 5 | Problem of heat loss and heat gain with assignments | 82-85 | 1.6.30 | Deleted | | |
| 6 | Thermal conductivity and insulators | 86-87 | 1.6.31 | Deleted | | |
| 7 | Concept of pressure – Units of pressure, atmospheric pressure, absolute pressure, gauge pressure and gauges used for measuring pressure | 88-97 | 1.6.32 | Deleted | | |
| VII | Basic Electricity | | | | 4 | |
| 1 | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC,DC their comparison, voltage, resistance and their units | 98 | 1.7.33 | Partially deleted | | |
| 2 | Conductor, insulator, types of connections - series and parallel | 102-107 | 1.7.34 | Retained | | |
| 3 | Ohm's law, relation between V.I.R & related problems | 108 | 1.7.35 | Retained | | |

| | | | | | | |
|-------------|---|---------|----------------------------|----------|-----------|--|
| 4 | Electrical power, energy and their units, calculation with assignments | 112-114 | 1.7.36 | Retained | | |
| 5 | Magnetic induction, self and mutual inductance and EMF generation | 115-117 | 1.7.37 | Deleted | | |
| 46 | Electrical power, HP, energy and units of electrical energy | 118-120 | 1.7.38 | Retained | | |
| VIII | Mensuration | | | | 6 | |
| 1 | Area and perimeter of square, rectangle and parallelogram | 121-124 | 1.8.39 | Retained | | |
| 2 | Area and perimeter of Triangles | 125-129 | 1.8.40 | Retained | | |
| 3 | Area and perimeter of circle, semi-circle, circular ring, sector of circle, hexagon and ellipse | 130-137 | 1.8.41 | Retained | | |
| 4 | Surface area and volume of solids - cube, cuboid, cylinder, sphere and hollow cylinder | 138-144 | 1.8.42 | Retained | | |
| 5 | Finding the lateral surface area, total surface area and capacity in litres of hexagonal, conical and cylindrical shaped vessels | 145-147 | 1.8.43 | Deleted | | |
| IX | Levers and Simple machines | | | | 0 | |
| 1 | Simple machines – Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relationship between efficiency, velocity ratio and mechanical advantage | 148-149 | 1.9.44 | Deleted | | |
| 2 | Lever & Simple machines – Lever and its types | 150-153 | 1.9.45 | Retained | | |
| X | Trigonometry | | | | 0 | |
| 1 | Measurement of angles | 154-155 | 1.10.46 | Retained | | |
| 2 | Trigonometrical ratios | 156-161 | 1.10.47 | Retained | | |
| 3 | Trigonometrical tables | 162-172 | 1.10.48 | Retained | | |
| 4 | Application in calculating height and distance (Simple applications) | 173-177 | 1.10.49 | Deleted | | |
| | | | TOTAL REVISED HOURS | | 30 | |

| REVISED SYLLABUS FOR WORKSHOP CALCULATION & SCIENCE - ENGINEERING TRADES | | | | | | |
|---|--|-----------------------------|---------------------------------|--------------------------------------|----------------------|-------------------------------|
| NAME OF TRADE : WIREMAN (2nd Year) | | | | | | |
| Sr. No. | Title of the Exercise | NIMI books' Page No. | NIMI books' Exercise No. | To be Retained / Not retained | Revised Hours | Remarks/ Justification |
| I | Friction | | | | 2 | |
| 1 | Friction – Advantages and disadvantages, Laws of friction, co-efficient of friction, angle of friction, simple problems related to friction | 1--7 | 2.1.01 | Deleted | | |
| 2 | Friction - Lubrication | 8--11 | 2.1.02 | Retained | | |
| 3 | Friction – Co-efficient of friction, application and effects of friction in workshop practice | 12--13 | 2.1.03 | Deleted | | |
| II | Centre of Gravity | | | | 0 | |
| 1 | Centre of gravity – Centre of gravity and its practical application | 14--23 | 2.2.04 | Deleted | | |
| III | Area of cut out regular surfaces and area of irregular surfaces | | | | 0 | |
| 1 | Area of cut out regular surfaces – circle, segment and sector of circle | 24--26 | 2.3.05 | Deleted | | |
| 2 | Related problems of area of cut out regular surfaces – circle, segment and sector of circle | 27--28 | 2.3.06 | Deleted | | |
| 3 | Area of irregular surfaces and application related to shop problems | 29--31 | 2.3.07 | Deleted | | |
| IV | Algebra | | | | 10 | |
| 1 | Algebra - Addition , subtraction, multiplication & division | 32--35 | 2.4.08 | Retained | | |
| 2 | Algebra - Theory of indices, algebraic formula, related problems | 36--40 | 2.4.09 | Retained | | |

| | | | | | | |
|-------------|--|--------|----------------------------|----------|-----------|--|
| V | Elasticity | | | | 2 | |
| 1 | Elasticity - Elastic, plastic materials, stress, strain and their units and young's modulus | 41-52 | 2.5.10 | Retained | | |
| 2 | Elasticity - Ultimate stress and working stress | 53-55 | 2.5.11 | Deleted | | |
| VI | Heat Treatment | | | | 0 | |
| 1 | Heat treatment and advantages | 56-57 | 2.6.12 | Deleted | | |
| 2 | Heat treatment - Different heat treatment process - Hardening, tempering, annealing, normalising and case hardening | 58--66 | 2.6.13 | Deleted | | |
| VII | Profit and Loss | | | | 4 | |
| 1 | Profit and loss - Simple problems on profit & loss | 67--72 | 2.7.14 | Retained | | |
| 2 | Profit and loss - Simple and compound interest | 73--84 | 2.7.15 | Retained | | |
| VIII | Estimation and Costing | | | | 10 | |
| 1 | Estimation and costing - Simple estimation of the requirement of material etc., as applicable to the trade | 85-91 | 2.8.16 | Retained | | |
| 2 | Estimation and costing - Problems on estimation and costing | 92 | 2.8.17 | Retained | | |
| | | | TOTAL REVISED HOURS | | 28 | |