B.E. Mechatronics Engineering

(R 2017) Semester – III CE8381 STRENGTH OF MATERIALS AND FLUID MECHANICS & MACHINERY LABORATORY

| SI. No. | Description of Equipment | Quantity required (R) | Quantity available (A) | Deficiency (R - A) |
|------------|-----------------------------------------------------------------------------|-----------------------------|------------------------------|-----------------------|
| 1. | Universal Tensile Testing machine with double 1 shear attachment –40 Ton | 1 | | |
| 2. | Torsion Testing Machine (60 NM Capacity) | 1 | | |
| 3. | Impact Testing Machine (300 J Capacity) | 1 | | |
| 4. | Brinell Hardness Testing Machine | 1 | | |
| 5. | Rockwell Hardness Testing Machine | 1 | | |
| 6. | Spring Testing Machine for tensile and compressive loads (2500 N) | 1 | | |
| 7. | Metallurgical Microscopes | 3 | | |
| 8. | Muffle Furnace (800 C) | 1 | | |
| 9. | Orifice meter setup | 1 | | |
| 10. | Venturi meter setup | 1 | | |
| 11. | Rotameter setup | 1 | | |
| 12. | Pipe Flow analysis setup | 1 | | |
| 13. | Centrifugal pump/submergible pump setup | 1 | | |
| 14. | Reciprocating pump setup | 1 | | |
| 15. | Gear pump setup | 1 | | |
| 16. | Pelton wheel setup | 1 | | |
| 17. | Francis turbine setup | 1 | | |
| 18. | Kaplan turbine setup | 1 | | |

B.E. Mechatronics Engineering

(R 2017) Semester – III MT8311 ELECTRICAL MACHINES AND DRIVES LABORATORY

| SI. No. | Description of Equipment | Quantity required (R) | Quantity available (A) | Deficiency (R - A) |
|------------|-----------------------------------------------|-----------------------------|------------------------------|-----------------------|
| 1. | Shunt motor 5HP | 3 | | |
| 2. | Single phase Induction Motor 2HP | 2 | | |
| 3. | Three phase induction Motor 5HP | 2 | | |
| 4. | Single phase transformer 2KVA | 1 | | |
| 5. | Three phase auto transformer | 2 | | |
| 6. | Single phase auto transformer | 2 | | |
| 7. | 3 point starter | 3 | | |
| 8. | DPST, TPST Each | 2 | | |
| 9. | DC source 300v, 100A | 1 | | |
| 10. | Ammeter(0-5A),(0-10A)MC Each | 2 | | |
| 11. | Ammeter(0-5A),(0-10A)MI Each | 2 | | |
| 12. | Voltmeter(0-300V) MC | 3 | | |
| 13. | Voltmeter(0-150V),(0-300V),(0-600V)MI Fach | 2 | | |
| 14. | Wattmeter 150/300V, 5/10A UPF | 2 | | |
| 15. | Wattmeter 300/600V,5/10A UPF | 2 | | |
| 16. | Wattmeter 150/300V,5/10A LPF | 2 | | |
| 17. | Wattmeter 300/600V,5/10A LPF | 2 | | |
| 18. | Stepper motor 5Kg | 1 | | |

| 19. | Synchronous motor 5KW | 1 | |
|-----|-----------------------|---|--|
| 20. | Rheostat 360 ohm/1.2A | 3 | |
| 21. | Tachometer | 5 | |
| 22. | Rheostat 50 ohm/5A | 3 | |

B.E. Mechatronics Engineering

(R 2017) Semester – IV ME8381 COMPUTER AIDED MACHINE DRAWING

| SI. No. | Description of Equipment | Quantity required (R) | Quantity available (A) | Deficiency (R - A) |
|------------|----------------------------------------------------|-----------------------------|------------------------------|-----------------------|
| 1. | Computers with necessary accessories | 30 | | |
| 2. | Assembly drawings using any 2D /3D CAD Software | 30 | | |
| 3. | Printer | 1 | | |

B.E. Mechatronics Engineering

(R 2017) Semester – IV MT8411 MICROPROCESSOR AND MICROCONTROLLERS LABORATORY

| SI. No. | Description of Equipment | Quantity required (R) | Quantity available (A) | Deficiency (R - A) |
|------------|-----------------------------------------------------|-----------------------------|------------------------------|-----------------------|
| 1. | 8085 Microprocessor Trainer with Power Supply | 15 | | |
| 2. | 8051 Micro Controller Trainer Kit with power supply | 15 | | |
| 3. | 8255 Interface board | 5 | | |
| 4. | 8251 Interface board | 5 | | |
| 5. | 8259 Interface board | 5 | | |
| 6. | 8279 Keyboard / Display Interface board | 5 | | |
| 7. | 8254 timer counter | 5 | | |
| 8. | ADC and DAC card | 5 | | |
| 9. | AC & DC motor with Controller | 5 | | |
| 10. | Traffic Light Control System | 5 | | |

B.E. Mechatronics Engineering

(R 2017) Semester – IV ME8461 MANUFACTURING TECHNOLOGY LABORATORY

| SI. No. | Description of Equipment | Quantity required (R) | Quantity available (A) | Deficiency (R - A) |
|------------|--------------------------|-----------------------------|------------------------------|-----------------------|
| 1. | Lathe | 15 | | |
| 2. | Drilling Machine | 1 | | |
| 3. | Milling Machine | 2 | | |
| 4. | Planning Machine | 1 | | |
| 5. | Shaping Machine | 2 | | |

B.E. Mechatronics Engineering

(R 2017) Semester – V ME8481 DYNAMICS LABORATORY

| SI. No. | Description of Equipment | Quantity required (R) | Quantity available (A) | Deficiency (R - A) |
|------------|----------------------------------------------------------------------|-----------------------------|------------------------------|-----------------------|
| 1. | Cam follower setup. | 1 | | |
| 2. | Motorised gyroscope. | 1 | | |
| 3. | Governor apparatus - Watt, Porter, Proell and Hartnell governors. | 1 | | |
| 4. | Whirling of shaft apparatus. | 1 | | |
| 5. | Dynamic balancing machine. | 1 | | |
| 6. | Two rotor vibration setup. | 1 | | |
| 7. | Spring mass vibration system. | 1 | | |
| 8. | Torsional Vibration of single rotor system setup. | 1 | | |
| 9. | Gear Models | 1 | | |
| 10. | Kinematic Models to study various mechanisms. | 1 | | |
| 11. | Turn table apparatus. | 1 | | |
| 12. | transverse vibration setup of a) cantilever | 1 | | |
| | b) Free-Free beam | 1 | | |
| | c) Simply supported. beam. | 1 | | |

B.E. Mechatronics Engineering

(R 2017) Semester – V MT8511 POWER ELECTRONICS LABORATORY

| SI. No. | Description of Equipment | Quantity required (R) | Quantity available (A) | Deficiency (R - A) |
|------------|------------------------------------------------------------------------------|-----------------------------|------------------------------|-----------------------|
| 1. | Study of SCR, MOSFET & IGBT characteristics module | 1 | | |
| 2. | UJT, R, RC firing circuits for SCR module | 1 | | |
| 3. | Voltage & current commutated chopper module | 1 | | |
| 4. | SCR phase control circuit module | 1 | | |
| 5. | TRIAC phase control circuit module | 1 | | |
| 6. | Study of half controlled & fully controller converters module | 1 | | |
| 7. | Study of three phase AC regulator module | 1 | | |
| 8. | Speed control of DC shunt motor using three phase fully controlled converter | 1 | | |
| 9. | SCR single phase cyclo converter module | 1 | | |
| 10. | SCR series and parallel inverters module | 1 | | |
| 11. | IGBT chopper module | 1 | | |
| 12. | IGBT based PWM inverter (single phase) module | 1 | | |
| 13. | Ammeter (0-5A) MC, (0-2A) MC, (0-2A) MI, (0-5V) MI | 15 | | |
| 14. | Voltmeter (0-300V) MC, (0-600V) MC, (0- 300V) MI, (0-600V) MI, Multimeter | 16 | | |
| 15. | CRO ,Transformer 1KVA, 1:1, 230V | 3 | | |

B.E. Mechatronics Engineering

(R 2017) Semester – V MT8512 SENSORS AND INSTRUMENTATION LABORATORY

| SI. No. | Description of Equipment | Quantity required (R) | Quantity available (A) | Deficiency (R - A) |
|------------|----------------------------------------------------|-----------------------------|------------------------------|-----------------------|
| 1. | Digital Signal Oscilloscope | 6 | | |
| 2. | Function Generator | 5 | | |
| 3. | Breadboard | 10 | | |
| 4. | Regulated Power supply | 6 | | |
| 5. | LVDT | 1 | | |
| 6. | Thermistor | 1 | | |
| 7. | Thermocouple | 1 | | |
| 8. | RTD | 1 | | |
| 9. | Load cell setup | 1 | | |
| 10. | 4 Channel data acquisition system for strain gauge | 1 | | |
| 11. | Sound level meter | 1 | | |
| 12. | Computer with LABVIEW/ MATLAB/SCILAB | 1 | | |
| 13. | Prony brake dynamometer | 1 | | |
| 14. | Hygrometer | 1 | | |

B.E. Mechatronics Engineering

(R 2017) Semester – VI MT8612 INDUSTRIAL AUTOMATION LABORATORY

| (R - A) |
|---------|
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |

B.E. Mechatronics Engineering

(R 2017) Semester – VI MT8611 APPLIED HYDRAULICS AND PNEUMATIC LABORATORY

| SI. No. | Description of Equipment | Quantity required (R) | Quantity available (A) | Deficiency (R - A) |
|------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------|-----------------------|
| 1. | Pressure relief valve | 4 | | |
| 2. | Pressure reducing valves | 2 | | |
| 3. | Flow control valves | 2 | | |
| 4. | Pressure switch | 1 | | |
| 5. | Limit switches | 2 | | |
| 6. | Linear actuator | 1 | | |
| 7. | Rotory actuator | 1 | | |
| 8. | Double solenoid actuated DCV | 1 | | |
| 9. | Single solenoid actuated DCV | 1 | | |
| 10. | Hydraulic power pack with pumps and pressure relief valve | 1 | | |
| 11. | PLC | 1 | | |
| 12. | Pneumatic trainer kit with FRL Unit, Single acting cylinder, push button | 1 | | |
| 13. | Pneumatic training kit with FRL unit, Double acting cylinder, manually actuated DCV | 1 | | |
| 14. | Pneumatic trainer kit with FRL unit, Double acting cylinder, Pilot actuated DCV | 1 | | |
| 15. | Pneumatic trainer kit with FRL unit Double acting cylinder, Double solenoid actuated DCV, DCV with sensor / magnetic reed | 1 | | |
| 16. | PLC with interface card | 1 | | |
| 17. | LABVIEW software | 1 | | |
| 18. | Automation studio software | 1 | | |

B.E. Mechatronics Engineering

(R 2017) Semester – VII MT8711 COMPUTER AIDED DESIGN AND MANUFACTURING LABORATORY

| SI. No. | Description of Equipment | Quantity required (R) | Quantity available (A) | Deficiency (R - A) |
|------------|------------------------------------------------------------------------------------------|-----------------------------|------------------------------|-----------------------|
| 1. | Standalone desktops | 30 | | |
| 2. | Software (3D modelling software systems/ CAD packages/CAM packages/ FEA software) | 30 | | |
| 3. | CNC lathe | 1 | | |
| 4. | CNC milling machine | 1 | | |

B.E. Mechatronics Engineering

(R 2017) Semester – VII MT8781 ROBOTICS LABORATORY

| SI. No. | Description of Equipment | Quantity required (R) | Quantity available (A) | Deficiency (R - A) |
|------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------|-----------------------|
| 1. | Computers with necessary accessories | 30 | | |
| 2. | Robotics Operating System | 30 | | |
| 3. | Verification of direct kinematics equations and inverse kinematics equations of 1DOF "R-configuration" robot | 30 | | |
| 4. | Verification of direct kinematics equations and inverse kinematics equations of 2DOF "R-R-configuration" robot | 30 | | |
| 5. | Printer | 1 | | |