**20ME12P1- ENGINEERING WORKSHOP LABORATORY**

(Common to ECE, ME &CE)

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| **Course Category** | Engineering Science | | | **Credits** | 1 | |
| **Course type** | Practical | | | **Lecture- Tutorial-Practical** | 0-0- 2 | |
| **Pre-requisite:** | No Prerequisite | | | **Sessional Evaluation:**  **External Exam Evaluation:**  **Total Marks:** | 40  60  100 | |
| **Course Objectives** | | | Students undergoing this course are expected to learn: | | | |
| 1. The usage of work shop tools and prepare the models in the trades such as carpentry, fitting, sheet metal & foundry. 2. The usage of wiring tools and to execute house wiring connections. 3. To demonstrate the usage of tools of welding, black smithy and machine tools. | | | |
| **Course Outcomes** | | | After completing the course the student will be able to: | | | |
| **CO1** | Identify, Distinguish and Choose the tools of various trades (carpentry, fitting, sheet metal, foundry, wiring, welding, black smithy and machine tools). | | |
| **CO2** | Demonstrate and Describe the usage of tools of various trades (carpentry, fitting, sheet metal, foundry, wiring, welding, black smithy and machine tools). | | |
| **CO3** | Documenting the procedure adopted while preparing the model. | | |
| **Course Content** | | | 1. **Carpentry**: Half Lap, Mortise and Tenon and Bridle joint. 2. **Fitting:** Square, V, half round and dovetail fittings 3. **Tin-Smithy:** Tray, cylinder, hopper, cone 4. **House-wiring:** One lamp controlled by one switch, Two lamps (bulbs) controlled by two switches independently, Stair - case connection, Two lamps controlled by one switch in series, Two lamps controlled by on switch in parallel and Water pump connected with single phase starter. 5. **Foundry**: single-piece pattern and Two- piece pattern   **TRADES FOR DEMONSTRATION:**   1. Machine Tools 2. Welding 3. Black Smithy | | | |
| **Text Books** | | | **Text Books**  1. Engineering Work shop practice for JNTU, V. Ramesh Babu, VRB Publishers Pvt. Ltd,2009  2. Work shop Manual / P.Kannaiah/ K.L.Narayana/ SciTech Publishers,2004  3. Engineering Practices Lab Manual, Jeyapoovan, SaravanaPandian, Vikas publishers,2007. | | | |

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| Contribution of Course Outcomes towards achievement of Program Outcomes (3-High, 2-Medium, 1-Low) | | | | | | | | | | | | | | |
|  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1 | 3 | 3 | 2 | - | 3 | 2 | - | - | - | - | 3 | 3 | - | - |
| CO2 | 3 | 3 | 2 | - | 3 | 3 | - | - | - | - | 3 | 3 | - | - |
| CO3 | 3 | 3 | 3 | - | 3 | 2 | - | - | - | - | 3 | 2 | - | - |
| CO4 | 3 | 3 | 2 | - | 2 | 3 | - | - | - | - | 2 | 2 | - | - |
| CO5 | 3 | 3 | 2 | - | 3 | 2 | - | - | - | - | 3 | 2 | - | - |
| CO6 | 3 | 3 | 2 | - | 2 | 2 | - | - | - | - | 2 | 2 | - | - |