



**GOVERNMENT POLYTECHNIC, NABARAN
GPUR
DEPARTMENT OF MECHANICAL ENGINEERING**

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| Discipline: ALL BRANCHES | Semester: <i>1st & 2nd</i> | Name of the Teaching Faculty: |
| Subject: WORKSHOP PRACTICE | No. of days/ per week class allotted: 6 | Semester From date: 14/03/2022 To Date: 18/06/2022 No. of Weeks: 15 |
| Week | Class Day | Theory/Practical Topics |
| 1ST | <i>1-3</i> | <i>1.1 Demonstrate safety practices in the fitting shop 1.2 Select suitable holding & clamping devices for fitting jobs</i> |
| | <i>4-6</i> | <i>1.3 Select suitable tools like - files , vice , chisels , punch , scriber , hammers , surface plate , V- block , tri square , calliper , etc 1.4 Demonstrate operations like sawing , chipping , fitting , crapping , grinding , marking , reaming , tapping , drilling & angular cutting . 1.5 introduction of chipping , demonstration of chipping , demonstration on chipping and its application.</i> |
| 2ND | <i>1-3</i> | <i>1.6 description , demonstration and practice of simple operation of hack saw straight and angular cutting .</i> |
| | <i>4-6</i> | <i>1.7 introduction and use of measuring tools used in fitting shop like steel rule , measuring tape , outside micrometer , vernier caliper and vernier height gauge .</i> |
| 3RD | <i>1-3</i> | <i>1.8 description and demonstration and practice of thread cutting using taps and dies .MS flat job ; angular cutting</i> |

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| | | <p>practice of 45 degree (on the above job).</p> <p>Job - preparation of stud (to cut external threads) with the Help of dies (mm of BSW), job ; H- fitting in the mild steel (MS) square.</p> <p>Jo ; prepare one job on male female fitting .</p> |
| | 4-6 | <p>Sheet metal</p> <p>2.1 demonstrate safety practices in sheet metal shop .</p> <p>2.2 prepare surface development for the jobs according to the drawing .</p> |
| 4 TH | 1-3 | 2.3 cut M.S and G.P sheets according to the surface development / drawing using standard sheet metal cutting tools. |
| | 4-6 | Select hand tools for sheet metal works . |
| 5 TH | 1-3 | <p>2.5 demonstrate the process of metal clamp joining and riveted joining of sheet metal .</p> <p>Job - making of sheet metal joints .</p> <p>Job - prepare a sheet metal tray or a funnel</p> |
| | 4-6 | Job - prepare a sheet metal job involving rolling , shearing , creasing , bending & cornering . job - prepare a lap riveting joint. |
| 6 TH | 1-3 | <p>3 . welding shop</p> <p>3.1 introduction</p> |
| | 4-6 | 3.2 safety precautions in welding , safety equipments & its applications in welding shop . |
| 7 TH | 1-3 | 3.3 introduction to welding , types of welding , common materials that can be welded , introduction to gas welding equipment ,types of flames, adjustment of flame , application of gas welding . |
| | 4-6 | 3.3 welding tools & safety precautions . |
| 8 TH | 1-3 | 3.4 introduction to electric arc welding (AC & DC),practice in setting current & voltage for striking proper arc |
| | 4-6 | Precautions while using electric arc welding . applications of arc welding |

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| <i>9TH</i> | <i>1-3</i> | <i>Introduction to polarity and their use .</i> |
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| | 4-6 | <i>Introduction to polarity & their uses .</i> |
| <i>10^T H</i> | 1-3 | <i>Demonstrate & use of the different tools used in the welding shop with sketches , hand shield , helmet ,clipping hammer ,gloves,welding lead, connectors ,aprons , goggles, etc .</i> |
| | 4-6 | <i>Demonstrate & use of the different tools used in the welding shop with sketches , hand shield , helmet ,clipping hammer ,gloves,welding lead, connectors ,aprons , goggles, etc .</i> |
| <i>11^T H</i> | 1-3 | <i>3.6 demonstrate welding defects & various types of joints & ends preparation .</i> |
| | 4-6 | <i>3.6 demonstrate welding defects & various types of joints & ends preparation . Job - preparation of lap joint by arc welding rod</i> |
| <i>12^T H</i> | 1-3 | <i>Job - preparation of Tee joint by arc welding .</i> |
| | 4-6 | <i>Job - preparation of single V or double V butt joint by electric arc welding.</i> |
| <i>13^T H</i> | 1-3 | <i>Job - preparation of single V or double V butt joint by electric arc welding.</i> |
| | 4-6 | <i>Job - brazing practice . use of spelt or (on MS sheet pieces). Job - gas welding practice on worn - out & broken parts .</i> |
| <i>14^T H</i> | 1-3 | <i>4 . turning shop . 4.1 introduction</i> |
| | 4-6 | <i>4.2 safety precautions and safety equipments . 4.3 various marking , measuring , cutting and holding tools . 4.4 demonstration of different parts of a lathe , demonstration on centering & turning operation in a group of 6 students . Job - plain turning , taper turning , & grooving practices on round bar</i> |
| <i>15^T H</i> | 1-3 | <i>5 . exposure to C.N.C milling / lathe machine</i> |
| | 4-6 | <i>LAB RECORD SUBMISSION</i> |

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