

**GWT - Degree in Mechanical Engineering (Welding Technology)**

**Group-A**

**Semester-I Group-A (UG)**

| S.No | Sub Code | Subject Name                        | L  | T | P | Hrs. | Credits |
|------|----------|-------------------------------------|----|---|---|------|---------|
| 1    | AMT-411  | Engineering Mathematics             | 3  | 1 | 0 | 4    | 4       |
| 2    | PHT-411  | Applied Physics                     | 3  | 1 | 0 | 4    | 4       |
| 3    | HUT-411  | English Communication & Soft Skills | 3  | 0 | 0 | 3    | 3       |
| 4    | EET-411  | Elements of Electrical Engineering  | 3  | 1 | 0 | 4    | 4       |
| 5    | MET-411  | Elements of Mechanical Engineering  | 3  | 1 | 0 | 4    | 4       |
| 6    | PHP-411  | Applied Physics                     | 0  | 0 | 2 | 2    | 1       |
| 7    | HUP-411  | English Communication & Soft Skills | 0  | 0 | 2 | 2    | 1       |
| 8    | EEP-411  | Elements of Electrical Engineering  | 0  | 0 | 2 | 2    | 1       |
| 9    | MEP-411  | Elements of Mechanical Engineering  | 0  | 0 | 2 | 2    | 1       |
|      |          |                                     | 15 | 4 | 8 | 27   | 23      |

**Semester-II Group-A (UG)**

| S.No | Sub Code | Subject Name                               | L  | T | P  | Hrs. | Credits |
|------|----------|--|----|---|----|------|---------|
| 1    | CYT-421  | Applied Chemistry                          | 3  | 1 | 0  | 4    | 4       |
| 2    | HUT-422  | Engineering Economics and Entrepreneurship | 3  | 1 | 0  | 4    | 4       |
| 3    | CST-421  | Elements of Computer Programming           | 2  | 0 | 0  | 2    | 2       |
| 4    | ECT-421  | Elements of Electronics Engineering        | 3  | 1 | 0  | 4    | 4       |
| 5    | MET-422  | Workshop Technology & Practice-I           | 2  | 0 | 0  | 2    | 2       |
| 6    | CYP-421  | Applied Chemistry                          | 0  | 0 | 2  | 2    | 1       |
| 7    | CSP-421  | Elements of Computer Programming           | 0  | 0 | 2  | 2    | 1       |
| 8    | ECP-421  | Elements of Electronics Engineering        | 0  | 0 | 2  | 2    | 1       |
| 9    | MEP-423  | Engineering Drawing*                       | 0  | 0 | 4  | 4    | 2       |
| 10   | WSP-422  | Workshop Technology & Practice-I           | 0  | 0 | 4  | 4    | 2       |
|      |          |  | 13 | 3 | 14 | 30   | 23      |

**Semester-IIIA Group-A (UG:Practical Training)**

|  |          |  |  |  |  |    |         |
|--|----------|--|--|--|--|----|---------|
|  | TP-501*^ | Two weeks Practical Training during summer vacations |  |  |  | 80 | 2(S/US) |
|--|----------|--|--|--|--|----|---------|

**Semester-III Group-A (UG)**

| S.No | Sub Code | Subject Name                         | L  | T | P  | Hrs. | Credits |
|------|----------|--------------------------------------|----|---|----|------|---------|
| 1    | AMT-511  | Higher Engg Mathematics              | 3  | 1 | 0  | 4    | 4       |
| 2    | MET-511  | Engineering Mechanics                | 3  | 1 | 0  | 4    | 4       |
| 3    | MET-512  | Basic Engineering Thermodynamics     | 3  | 0 | 0  | 3    | 3       |
| 4    | MET-513  | Manufacturing Processes-I            | 3  | 0 | 0  | 3    | 3       |
| 5    | MET-516  | Fluid Mechanics & Machinery          | 3  | 1 | 0  | 4    | 4       |
| 6    | MEP-511  | Engineering Mechanics Lab            | 0  | 0 | 2  | 2    | 1       |
| 7    | MEP-512  | Basic Engineering Thermodynamics lab | 0  | 0 | 2  | 2    | 1       |
| 8    | MEP-516  | Fluid Mechanics & Machinery Lab      | 0  | 0 | 2  | 2    | 1       |
| 9    | MEP-515  | Machine drawing Lab                  | 0  | 0 | 4  | 4    | 2       |
|      |          | Total                                | 15 | 3 | 10 | 28   | 23      |

**Semester-IV Group-A (UG)**

| S.No | Sub Code | Subject Name                               | L  | T | P  | Hrs. | Credits |
|------|----------|--|----|---|----|------|---------|
| 1    | MET-521  | Physical Metallurgy and Heat Treatment     | 3  | 0 | 0  | 3    | 3       |
| 2    | MET-526  | Conventional Welding Processes             | 3  | 0 | 0  | 3    | 3       |
| 3    | MET-523  | Strength of Materials                      | 3  | 1 | 0  | 4    | 4       |
| 4    | MET-527  | Safety in Welding                          | 3  | 0 | 0  | 3    | 3       |
| 5    | MET-525  | Kinematics of Machines                     | 3  | 1 | 0  | 4    | 4       |
| 6    | MEP-521  | Physical Metallurgy and Heat Treatment Lab | 0  | 0 | 2  | 2    | 1       |
| 7    | MEP-526  | Conventional Welding Processes Lab         | 0  | 0 | 6  | 6    | 3       |
| 8    | MEP-523  | Strength of Materials Lab                  | 0  | 0 | 2  | 2    | 1       |
| 9    | MEP-525  | Kinematics of Machines Lab                 | 0  | 0 | 2  | 2    | 1       |
|      |          | Total                                      | 15 | 2 | 12 | 29   | 23      |

| Semester-V Group-A (UG)                 |          |  |    |   |    |      |         |
|---|----------|--|----|---|----|------|---------|
| S.No                                    | Sub Code | Subject Name   | L  | T | P  | Hrs. | Credits |
| 1                                       | AMT-611  | Numerical Analysis                                     | 3  | 1 | 0  | 4    | 4       |
| 2                                       | AMP-611  | Numerical Analysis                                     | 0  | 0 | 2  | 2    | 1       |
| 3                                       | MET-611  | Dynamics of Machines                                   | 3  | 1 | 0  | 4    | 4       |
| 4                                       | MET-612  | Elective-I   | 3  | 0 | 0  | 3    | 3       |
| 5                                       | MET-613  | Heat and Mass Transfer                                 | 3  | 1 | 0  | 4    | 4       |
| 6                                       | MET-616  | Advanced Welding Process                               | 3  | 0 | 0  | 3    | 3       |
| 7                                       | MEP-611  | Dynamics of Machines Lab                               | 0  | 0 | 2  | 2    | 1       |
| 8                                       | MEP-613  | Heat and Mass Transfer Lab                             | 0  | 0 | 2  | 2    | 1       |
| 9                                       | MEP-616  | Advanced Welding Process Lab                           | 0  | 0 | 4  | 4    | 2       |
|   |          | Total  | 15 | 3 | 10 | 28   | 23      |
| Semester-VI Group-A (UG)                |          |  |    |   |    |      |         |
| S.No                                    | Sub Code | Subject Name   | L  | T | P  | Hrs. | Credits |
| 1                                       | **O-62*  | Open Elective-I  | 3  | 0 | 0  | 3    | 3       |
| 2                                       | PHT-621  | Physics of Matetials                                   | 3  | 1 | 0  | 4    | 4       |
| 3                                       | PHP-621  | Physics of Matetials                                   | 0  | 0 | 2  | 2    | 1       |
| 4                                       | MET-621  | CAD/CAM  | 3  | 0 | 0  | 3    | 3       |
| 5                                       | MET-625  | Welding Metallurgy                                     | 3  | 0 | 0  | 3    | 3       |
| 6                                       | MET-623  | Work Study & Ergonomics                                | 3  | 0 | 0  | 3    | 3       |
| 7                                       | MET-624  | Mechanical Design-I                                    | 3  | 1 | 0  | 4    | 4       |
| 8                                       | MET-625  | Metal Cutting and forming                              | 2  | 0 | 0  | 2    | 2       |
| 9                                       | MEP-621  | CAD/CAM LaB  | 0  | 0 | 2  | 2    | 1       |
| 10                                      | MEP-625  | Welding Metallurgy Lab                                 | 0  | 0 | 2  | 2    | 1       |
| 11                                      | MEP-623  | Work Study & Ergonomics Lab                            | 0  | 0 | 2  | 2    | 1       |
|   |          | Total  | 20 | 2 | 8  | 30   | 26      |
| Semester- VIIA (UG:Industrial Training) |          |  |    |   |    |      |         |
|   | TP-701*^ | Industrial Training during summer vacations ( 6 weeks) |    |   |    | 200  | 8(S/US) |
| Semester-VII Group-A (UG)               |          |  |    |   |    |      |         |
| S.No                                    | Sub Code | Subject Name   | L  | T | P  | Hrs. | Credits |
| 1                                       | CHM-711  | Environmental Studies                                  | 3  | 0 | 0  | 3    | 3       |
| 2                                       | HUT-711  | Principles of Management                               | 3  | 1 | 0  | 4    | 4       |
| 3                                       | **O-71*  | Open Elective-II                                       | 3  | 0 | 0  | 3    | 3       |
| 4                                       | MET-711  | Metrology and Mechanical Measurements                  | 3  | 0 | 0  | 3    | 3       |
| 5                                       | MET-715  | Welding codes and standards                            | 3  | 0 | 0  | 3    | 3       |
| 6                                       | MET-716  | Inspection and testing of weldments                    | 3  | 0 | 0  | 3    | 3       |
| 7                                       | MEP-717  | Project ( Minor Project)                               | 0  | 0 | 4  | 4    | 2       |
| 8                                       | MEP-711  | Metrology and Mechanical Measurements Lab              | 0  | 0 | 2  | 2    | 1       |
| 9                                       | MEP-716  | Inspection and testing of weldments Lab                | 0  | 0 | 2  | 2    | 1       |
|   |          | Total  | 18 | 1 | 8  | 27   | 23      |
| Semester-VIII Group-A (UG)              |          |  |    |   |    |      |         |
| S.No                                    | Sub Code | Subject Name   | L  | T | P  | Hrs. | Credits |
| 1                                       | HUM-722  | Human Values and Professional Ethics                   | 2  | 0 | 0  | 2    | 2       |
| 2                                       | **O-72*  | Open Elective-III                                      | 3  | 0 | 0  | 3    | 3       |
| 3                                       | MET-721  | Automobile Engineering                                 | 3  | 0 | 0  | 3    | 3       |
| 4                                       | MET-722  | Operations Research                                    | 3  | 1 | 0  | 4    | 4       |
| 5                                       | MET-723  | Elective-II  | 3  | 0 | 0  | 3    | 3       |
| 6                                       | MEP-725  | Project ( Major Project)                               | 0  | 0 | 8  | 8    | 4       |
| 7                                       | MEP-726  | Seminar  | 0  | 0 | 4  | 4    | 2       |
| 8                                       | MEP-721  | Automobile Engineering Lab                             | 0  | 0 | 2  | 2    | 1       |
|   |          | Total  | 14 | 1 | 14 | 29   | 22      |

\*^ The credit will not be considered for CGPA calculation

|         |  |
|---------|--|
| MET-612 | Elective 1                               |
| C       | Quality, Reliability and maintainability |
| D       | Weldability of engineering materials     |
| E       | Estimation and coating                   |

|         |                     |
|---------|---------------------|
| MET 723 | Elective 2          |
| B       | Smart Manufacturing |
| D       | Arc Physics         |
| E       | Design of Weldments |

|         |   |
|---------|---|
|         | Open Elective                                     |
| MEO-611 | Concurrent engineering                            |
| MEO-612 | System Dynamics and Control                       |
| MEO-613 | Power Plant engineering                           |
|         |   |
| MEO-711 | Properties and selection of engineering materials |
| MEO-712 | Robotics  |
| MEO-713 | Non Conventional energy sources                   |
|         |   |
| MEO-721 | Finite element methods                            |
| MEO-722 | Design of Experiment                              |
| MEO-723 | Welding processes and design                      |