**NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI**

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| **Course Title** | **FABRICATION TECHNOLOGY** |
| **Course Code** | **PH612** | **No. of Credits** | **3** |
| **Department** | **Physics** | **Faculty** | **Dr.S. Boomadevi** |
| **Pre-requisites****Course Code** | **-NIL-** |
| **Course Coordinator(s)****(if, applicable)** |  |
| **Course****Teacher(s)/Tutor(s)****E-mail** | **boomadevi@nitt.edu** | **Telephone No.** | 0431-2503600 |
| **Course Type** |  **Elective course**  |
| **COURSE OVERVIEW** |
| **Different engineering processes such as Casting, Welding and its types has been studied elaborately . To learn the joining technologies such as brazing soldering and adhesive bonding and understand its merits and demerits** |
| **COURSE OBJECTIVES** |
| **To understand the basic concepts of metal casting, forming and joining technology inorder to produce new materials.****To know the concepts of metal joining technology and apply them for various manufacturing processes.** |
| **COURSE OUTCOMES (CO)** |
| **Course Outcomes** | **Aligned Programme Outcomes (PO)** |
| * Design a new pattern or mould for required applications if needed
* classify different welding processes with their inherent merits and limitations
* solve the materials problems associated with joining technology.
* produce low cost manufacturing possibilities with dissimilar materials and by selecting proper joining process
* Provide the low cast manufacturing possibilities by appropriate selection of the joining process.
 | **To understand different engineering processes.** |
| **COURSE TEACHING AND LEARNING ACTIVITIES** |
| **S.No.** | **Week** | **Topic** | **Mode of Delivery** |
| **1****2****3****4****5** | **1-3****4-6****7-9****10-12****13-15** | **Casting and Forging processes** **Introduction to welding technology** **Requisites, welding choice ,advantages and limitations****Friction stir welding****Welding defects and engineering processes** | **PPT /Group discussion****PPT/Video** **Chalk & Talk****PPT and Video** **student seminar , Chalk & Talk** |
| **COURSE ASSESSMENT METHODS** |
| **S.No.** | **Mode of Assessment** | **Week/Date** | **Duration** | **% Weight age** |
| **1****2****3****4** | **Cycle Test I****Cycle Test II****Assignment and Seminar****Final Exam** | **6th week****9th week****4th and 8th week****Theory** |  **1 hr** **1 hr** **15 min (seminar)****Assignment : 2 weeks for submission** **3 Hours** |  **20%** **20%****5%+5%****50%** |
| **ESSENTIAL READINGS : Textbooks, reference books Website addresses, journals, etc** |
| **Text Books & Reference Books::*** *R. W. Heine, C. R. Loper P. C. Rosentha, Principles of Metal Casting, McGraw -Hill, 2nd edition, (1967).*
* *P. L. Jain, Principles of Foundary Technology, McGraw Hill, 5th edition, (1995).*
* *R. S. Parmer, Welding Engineering and Technology, Khanna Publishers, 2nd edition, (2010).*
* *Kalpakijan and Schmid Manufacturing Engineering and Technology 4th edition Pearson education Inc*

**Reference Books:*** *N. K. Srinivasan, Foundary Technology, Khanna Publications, (1986).*
* *H. B. Carry and S. Helzer, Modern Welding Technology, Prentice Hall, 6th edition, (2004).*
* *R. S. Mishra, M.V. Mahoney,Y. Sato and Y. Hovanski, Friction Stir Welding and Processing, John Wiley & Sons, (2013).*
* *M. D. Jackson, Welding Methods and Metallurgy, Grffin, (1967).*
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| **COURSE EXIT SURVEY**  |
| **Feedback from the student after 9th week :**on knowledge gained, subjects relevant to the course, methodology adopted, aspect of improvement. Whether the topics fulfil the course outcome and program outcome. |
| **COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)** |
| **Attendance :** 75% attendance is Mandatory for appearing exams.Extra chances will be given to the students not appeared ( with medical or official reason) in any mode of assessments. |
| **ADDITIONAL COURSE INFORMATION** |
| The Course Coordinator is available for consultation at times that are displayed on the coordinator’s office notice board. Queries may also be emailed directly at boomadevi@nitt.edu |
| **FOR SENATE’S CONSIDERATION** |
| **Course Faculty \_\_\_\_\_\_\_\_\_\_ CC-Chairperson \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ HOD \_\_\_\_\_\_\_\_\_\_\_\_** |