**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).* | | | | | | | | | | |
| **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 \_\_\_\_\_\_\_\_\_\_\_\_** | | | | | | | | | | |