

| Course code | Course Name | L-T-P - Credits | Year of Introduction | | | | | | |
|--|----------------|-----------------|----------------------|---|----------|--|----------|---|----------|
| **341 | DESIGN PROJECT | 0-1-2-2 | 2016 | | | | | | |
| Prerequisite : Nil | | | | | | | | | |
| <p>Course Objectives</p> <ul style="list-style-type: none"> • To understand the engineering aspects of design with reference to simple products • To foster innovation in design of products, processes or systems • To develop design that add value to products and solve technical problems | | | | | | | | | |
| <p>Course Plan</p> <p>Study : Take minimum three simple products, processes or techniques in the area of specialisation, study, analyse and present them. The analysis shall be focused on functionality, strength, material, manufacture/construction, quality, reliability, aesthetics, ergonomics, safety, maintenance, handling, sustainability, cost etc. whichever are applicable. Each student in the group has to present individually; choosing different products, processes or techniques.</p> <p>Design: The project team shall identify an innovative product, process or technology and proceed with detailed design. At the end, the team has to document it properly and present and defend it. The design is expected to concentrate on functionality, design for strength is not expected.</p> <p><i>Note :</i> The one hour/week allotted for tutorial shall be used for discussions and presentations. The project team (not exceeding four) can be students from different branches, if the design problem is multidisciplinary.</p> | | | | | | | | | |
| <p>Expected outcome .</p> <p>The students will be able to</p> <ol style="list-style-type: none"> i. Think innovatively on the development of components, products, processes or technologies in the engineering field ii. Analyse the problem requirements and arrive workable design solutions | | | | | | | | | |
| <p>Reference:</p> <p>Michael Luchs, Scott Swan, Abbie Griffin, 2015. Design Thinking. 405 pages, John Wiley & Sons, Inc</p> | | | | | | | | | |
| <p>Evaluation</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 80%;">First evaluation (Immediately after first internal examination)</td> <td style="text-align: right;">20 marks</td> </tr> <tr> <td>Second evaluation (Immediately after second internal examination)</td> <td style="text-align: right;">20 marks</td> </tr> <tr> <td>Final evaluation (Last week of the semester)</td> <td style="text-align: right;">60 marks</td> </tr> </table> <p><i>Note:</i> All the three evaluations are mandatory for course completion and for awarding the final grade.</p> | | | | First evaluation (Immediately after first internal examination) | 20 marks | Second evaluation (Immediately after second internal examination) | 20 marks | Final evaluation (Last week of the semester) | 60 marks |
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| **352 | Comprehensive Examination | 0-1-1-2 | 2016 |
| Prerequisite : Nil | | | |
| Course Objectives | | | |
| <ul style="list-style-type: none"> To assess the comprehensive knowledge gained in basic courses relevant to the branch of study To comprehend the questions asked and answer them with confidence. | | | |
| Assessment | | | |
| <p>Oral examination – To be conducted weekly during the slot allotted for the course in the curriculum (@ three students/hour) – 50 marks</p> <p>Written examination - To be conducted by the Dept. immediately after the second internal examination– common to all students of the same branch – objective type (1 hour duration)– 50 multiple choice questions (4 choices) of 1 mark each covering all the courses up to and including semester V – no negative marks – 50 marks.</p> <p><i>Note:</i> Both oral and written examinations are mandatory. But separate minimum marks is not insisted for pass. If a students does not complete any of the two assessments, grade I shall be awarded and the final grade shall be given only after the completion of both the assessments. The two hours allotted for the course may be used by the students for library reading and for oral assessment.</p> | | | |
| Expected outcome . | | | |
| <ul style="list-style-type: none"> The students will be confident in discussing the fundamental aspects of any engineering problem/situation and give answers in dealing with them | | | |



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| **451 | Seminar and Project Preliminary | 0-1-4-2 | 2016 |
| Prerequisite : Nil | | | |
| Course Objectives <ul style="list-style-type: none"> To develop skills in doing literature survey, technical presentation and report preparation. To enable project identification and execution of preliminary works on final semester project | | | |
| Course Plan Seminar: Each student shall identify a topic of current relevance in his/her branch of engineering, get approval of faculty concerned, collect sufficient literature on the topic, study it thoroughly, prepare own report and present in the class. Project preliminary: Identify suitable project relevant to the branch of study. Form project team (not exceeding four students). The students can do the project individually also. Identify a project supervisor. Present the project proposal before the assessment board (excluding the external expert) and get it approved by the board. The preliminary work to be completed: (1) Literature survey (2) Formulation of objectives (3) Formulation of hypothesis/design/methodology (4) Formulation of work plan (5) Seeking funds (6) Preparation of preliminary report Note: The same project should be continued in the eighth semester by the same project team. | | | |
| Expected outcome . The students will be able to <ol style="list-style-type: none"> Analyse a current topic of professional interest and present it before an audience Identify an engineering problem, analyse it and propose a work plan to solve it. | | | |
| Evaluation Seminar : 50 marks (Distribution of marks for the seminar is as follows: i. Presentation : 40% ii. Ability to answer questions : 30% & iii. Report : 30%) Project preliminary : 50 marks (Progress evaluation by the supervisor : 40% and progress evaluation by the assessment board excluding external expert : 60%. Two progress evaluations, mid semester and end semester, are mandatory.) Note: All evaluations are mandatory for course completion and for awarding the final grade. | | | |

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| **492 | PROJECT | 6 | 2016 | | | | | | |
| Prerequisite : Nil | | | | | | | | | |
| Course Objectives <ul style="list-style-type: none"> • To apply engineering knowledge in practical problem solving • To foster innovation in design of products, processes or systems • To develop creative thinking in finding viable solutions to engineering problems | | | | | | | | | |
| Course Plan In depth study of the topic assigned in the light of the preliminary report prepared in the seventh semester Review and finalization of the approach to the problem relating to the assigned topic Preparing a detailed action plan for conducting the investigation, including team work Detailed Analysis/Modelling/Simulation/Design/Problem Solving/Experiment as needed Final development of product/process, testing, results, conclusions and future directions Preparing a paper for Conference presentation/Publication in Journals, if possible Preparing a report in the standard format for being evaluated by the dept. assessment board Final project presentation and viva voce by the assessment board including external expert | | | | | | | | | |
| Expected outcome The students will be able to <ul style="list-style-type: none"> iii. Think innovatively on the development of components, products, processes or technologies in the engineering field iv. Apply knowledge gained in solving real life engineering problems | | | | | | | | | |
| Evaluation Maximum Marks : 100 <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">(i) Two progress assessments</td> <td style="width: 50%;">20% by the faculty supervisor(s)</td> </tr> <tr> <td>(ii) Final project report</td> <td>30% by the assessment board</td> </tr> <tr> <td>(iii) Project presentation and viva voce</td> <td>50% by the assessment board</td> </tr> </table> <p><i>Note:</i> All the three evaluations are mandatory for course completion and for awarding the final grade.</p> | | | | (i) Two progress assessments | 20% by the faculty supervisor(s) | (ii) Final project report | 30% by the assessment board | (iii) Project presentation and viva voce | 50% by the assessment board |
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| (ii) Final project report | 30% by the assessment board | | | | | | | | |
| (iii) Project presentation and viva voce | 50% by the assessment board | | | | | | | | |