

Semester VII

Project-I

3 (0+3)

Objective

To strengthen the skill of the students and for developing their confidence to take up either research or employment/ entrepreneurship as a future career.

Activity

The activities should aim at development of advanced skill for research/ employment and entrepreneurship. The activities can be planned considering the total 7 credit hours allocated in the 7th and 8th semesters, viz. Project I (0+3 credit hours in 7th semester) and Project II (0+4 credit hours in the 8th semester).

The course can be taken either for developing research skills in form of project (R and D based, field study based) or for entrepreneurship development (incubation/ experiential learning based). The student will have the option to choose the mode of this course in consultation with a faculty mentor (each student will be attached to a mentor either from the College/ University or from any organisation/ industry).

Engineering Graphics and Design

2 (0+2)

Objective

1. To acquaint the students with CAD softwares for drawing of machine components
2. To integrate the computers at various levels of planning and manufacturing

Practical

Application of computers for design; CAD- introduction, overview of CAD window; Various options on drawing screen; Practice on draw and dimension tool bar; Practice on OSNAP, line thickness and format tool bar; Practice on mirror, offset; Practice on array commands; Practice on trim, extend; Practice on trim chamfer and fillet commands; Practice on copy, move, scale and rotate commands; Drawing of 2 D- drawing using draw tool bar; Practice on creating boundary, region, hatch and gradient commands; Practice on Editing polyline- PEDIT and Explode commands; Setting of view ports for sketched drawings; Printing of selected view ports in various paper sizes; 2D- drawing of machine parts with all dimensions and allowances; Drawing of foot step bearing, knuckle joint; Sectioning of foot step bearing and stuffing box; Drawing of hexagonal, nut and bolt and other machine parts; Practice on 3-D commands- Extrusion and lift, sweep and press pull, revolving, joining; Demonstration on CNC machine and practice problems.

Suggested Readings

1. Lee, K. 1999. *Principles of CAD/CAM/CAE Systems*. Addison Wesley Longman, Inc.
2. Rao, P. N. 2002. *CAD/CAM Principles and Applications*. McGraw-Hill Education Pvt. Ltd., New Delhi.
3. Sareen, K. and Grewal, C. D. 2010. *CAD/CAM Theory and Practice*. S. Chand & Company Ltd., New Delhi.