

| Department of Mechanical Engineering | | | |
|--|--|--------------------------------|---------------------|
| Production and Manufacturing Processes I (67332) | | | |
| Total Credits | 3 | | |
| major compulsory | | | |
| Prerequisites | P1 : Engineering Materials (67314) OR Engineering Workshop II (67200) OR Engineering Materials (67330) OR Eng'g Workshop II (61103) | | |
| Course Contents | | | |
| Metal Alloys, Ferrous Metals and alloys, Metal- Casting Processes, Rolling of Metals, Forging of Metals, Extrusion and Drawing of Metals, Sheet-Metal forming Processes, Machining Processes and Machine Tools, Joining Processes and Equipment and Surface Technology | | | |
| Intended Learning Outcomes (ILO's) | | Student Outcomes (SO's) | Contribution |
| 1 | Clarify the up-to-date concepts of producing iron and steel making and casting methods. | J | 25 % |
| 2 | Illustrate the bulk deformation and sheet metal working process such as rolling, forging, extrusion, drawing process | H | 25 % |
| 3 | Analysing the material removable processes related to theory of metal machining and cutting tools specifications and forces. These processes include turning, drilling, milling and other machine types. | E | 35 % |
| 4 | Identify the effect of the joining and surface finishing and lubrication processes | H | 15 % |
| Textbook and/ or References | | | |
| Serope Kalpakjian and Steven R. Schmid. (2006) Manufacturing Engineering and Technology. 5th edition. London, UK. Virender Narula. (2008). Manufacturing Processes. New Delhi. | | | |
| Assessment Criteria | | Percent (%) | |
| First Exam | | 25 % | |
| Second Exam | | 25 % | |
| Final Exam | | 50 % | |
| Course Plan | | | |
| Week | Topic | | |
| 1,2 | Ferrous Metals and alloys: Production, Properties and Applications | | |
| 3, 4,5 | Metal Casting | | |
| 5,6,7 | Rolling, Forging and Extrusion of metals | | |
| 7 | First exam | | |
| 8,9 | Sheet-Metal forming Processes | | |
| 9,10,11 | Machining Processes and Machine Tools: Forces and Failure | | |
| 11,12 | Joining Processes and Equipment | | |
| 12 | Second exam | | |
| 13,14 | Joining Processes and Equipment | | |
| 15,16 | Surface Technology | | |
| 16 | Final exam | | |