

Department of Mechanical Engineering			
Engineering Workshop I (67100)			
Total Credits		1	
Faculty compulsory			
Prerequisites		-	
Course Contents			
Development of basic skills in fields of manual sheet metal fabrication, welding processes, and household electric circuits. Students should perform in individual practical exercises.			
Intended Learning Outcomes (ILO's)		Student Outcomes (SO's)	Contribution
1	To illustrate health and safety aspects in engineering workshop environment.	H	15 %
2	To use hand processes techniques	K	20 %
3	To identify engineering materials and their properties and knowledge related to hand process techniques	H	30 %
4	To conduct basic electrical circuits necessary for engineering practice.	B	25 %
5	To achieve basic knowledge about contemporary issues in engineering workshop environment.	J	10 %
Textbook and/ or References			
Workshop technology, by PK Spara &RK Kapur, 1996.Workshop processes and materials first level, by Collier. P., 1980.Workshop technology part 1, fifth edition, by W.A.J/Chapman, 1978Workshop processes , Practices , and Material , Bruce J. Blake , 1979.			
Assessment Criteria		Percent (%)	
First Exam		25 %	
Second Exam		25 %	
Final Exam		50 %	
Course Plan			
Week	Topic		
1_6	Health and safety (workshop hazards) Objectives , General precautions , Workshop rules , Accidents , Resuscitation, Noise , Safety colors and safety signs , fire .		
7_9	Hand processes ( Filing , Chipping , and scraping) .Filing which include type of files , Grades of cut , Methods of filing. Chipping: Chisels and chipping , types of chisels . Scraping: Types of chisels.		
10_14	Engineering materials :Grouping of engineering materials , properties of materials , Ferrous metals, Effect of carbon content, plain carbon steel, alloy steels , cast iron.		
15-16	Metal joining methods Soldering , Brazing ,Fusion welding , ( gaz and arc welding ) , Adhesive bonding		