

Khulna Polytechnic Institute
Khulna-9000

T	P	C
3	3	4

Mechanical Technology
Subject: Tool Design(27072)

Semester Plan:

Week No.	Theory Content, Specific Object	Practical Content, Specific Object
1	Discuss Marks Credits & Curriculum in this Subject. Understand the tools of tool maker. Define tools of tool maker Describe different types of tool for tool maker. List the tools of the tool maker. Describe the necessity for the tool designer to be familiar with the tool room equipment used by the tool maker. Describe the uses of different tools of the tool maker. (Chapter-1)	Description of practical class.
2	Differentiate between dial test indicator and regular indicator. Describe the processes of hand finishing and polishing. Identify screws and dowels. (Chapter-1)	1. Make a single point cutting tool by using mild steel bar.
3	2. Understand the construction and operation of jigs and boring (Chapter-2)	Make a single point cutting tool by using mild steel bar.
4	3. Understand the designing concepts of material as cutting tools. Describe the basic requirement of cutting tools. List the elements of cutting process. Describe the geometry of cutting Tools. Function of different cutting angles. (Chapter-3) Quiz Test-1	2. Make twist drill bit using mild steel rod.
5	Explain the velocity relation of cutting tools. Describe the thermal aspects of metal cutting. List the causes of tool wear and failure & their controlling aspect. (Chapter-3)	Make twist drill bit using mild steel rod.
6	4. Understand the chip and chip formation.	3. Make a box jig.

	Describe chips formation. List different types of chips. Describe the mechanism of chip formation. Explain the geometry of chip formation. (Chapter- 4) Class Test-1	
7	5. Understand the location and clamping methods. Describe the freedom of movements. Describe the six point locations. Explain the method of movement restriction for any object. (Chapter-5)	Make a box jig.
8	Differentiate clamp, locators and holders. Identify suitable clamps and locators for various jobs. (Chapter-5)	Make a box jig.
9	Mid Semester Examination	
10	6. Understand the basic concept of jigs and fixtures.	4. Make a simple die and punch.
11	7. Understand the fundamentals of press tools. Chapter-9	Make a simple die and punch
12	8. Understand the press operations. Describe blanking & piercing dies, bending dies, forming dies and rubber dies. Describe drawing operations. Describe the method of preparing economical strip layout. Describe the method of determining blank size. (Chapter-8) Class Test-2	Make a simple die and punch
13	Define capacity of press. Describe the action of shearing force, bending force, drawing force and stripping force in press operation. Explain the necessity of auxiliary press tools. e.g. pilots, strippers, pressure pads, knockout and pierce pads. (Chapter-8)	5. Design a urethane/epoxy resin forming die/mold.
14	9. Understand the concept of plastics as tooling materials.	Design a urethane/epoxy resin forming die/mold.

