TA 202 (Introduction to Manufacturing Processes)

Course content: Introduction to manufacturing; Evolution of manufacturing; Importance of design in manufacturing; Conventional material removal processes: chip formation, tool dynamics, practical machining and finishing operations; CNC machining; Unconventional machining; Introduction to microfabrication, layered manufacturing and metrology.

Specialized Infrastructure requirement: Unconventional machining demonstration equipment.

Lecture-wise break-up:

S. No.	Titles	Suggested of number of lectures
1.	Introduction to manufacturing and its evolution	1
2.	Computer numerical control and programming	2
3.	Conventional material removal processes	4
4.	Un-conventional material removal processes	4
5.	Micro-fabrication processes	1
6.	Layered / generative manufacturing processes	1
7.	Engineering metrology	1
	Total number of lectures	**14**

Laboratory Session:

Session	Name of Experiment
1	Turning
2	Milling + CNC demonstration
3	Drilling and fitting
4 & 5	CNC class room training system usage and exercise
6 – 13	Project
	Project evaluation

Suggested text and reference material:

1. Fundamental of Modern Manufacturing: Materials, Processes and Systems: M. P. Groover (John Wiley).
2. Manufacturing Processes for Engineering Materials: S. Kalpakliam and S. R. Schmid (Prentice Hall).
3. Fundamental of Manufacturing Processes: G. K. Lal and S. K. Choudhuary (Narosa).
4. Advanced Machining Processes: V. K. Jain (Allied Publishers).
5. Introduction to Micromachining: Ed. V. K. Jain (Narosa).
6. Micromanufacturing Processed: Ed.: V.K.Jain (CRC Press)