

B TECH CURRICULUM FOR ME&MS DEPARTMENT
2022 batch

Semester-1 It's a materials world (DIC-I) (6) Math (8) Biology (6) Chemistry (8) Makerspace (8) Chemistry lab (3) NCC/NSS/NSO	Semester-2 Lifecycle of materials: Extraction, Manufacturing and Recycling (DIC-II) (6) Math (8) CS 101 (6) Physics (8) Introduction to HASMED (8) Physics lab (3) NCC/NSS/NSO
Semester-3 Structure of Materials (6) Thermodynamics of materials (6) AI and Data Science (6) Economics (6) Lab: Sensors and measurements lab (4 credits)	Semester-4 Numerical methods for materials engineering (6) Process kinetics and transport (6) Electrochemistry and its applications (6) Design Thinking (6) Lab: Computation lab (3 credits) Electrochemistry and corrosion lab (3 credits)

Semester-5 (Core 3T+2L) Diffusion and Phase transformations (6) Mechanical behavior of materials (6) Electronic, magnetic, and optical properties of materials (6) HASMED elective 1 (6) Honors elective 1 (6) Lab: Alloy processing and characterization lab (4 credits) Processing and characterization lab of non-metallic materials (Lab) (3 credits)	Semester-6 (Core 1T+1L) Introduction to polymers (6) Department Elective (6) HASMED elective 2 (6) STEM elective 1 (6) Honors elective 2 (6) Lab: Thin films processing and characterization lab (4 credits)
Semester-7 BTP 1*/Equivalent Department elective (6) Department Elective (6) STEM elective 2 (6) Flexible elective 1 (6) Flexible elective 2 (6) Honors elective 3 (6)	Semester-8 BTP 2*/Equivalent Department electives 2 (12) Flexible elective 3 (6) Flexible elective 4 (6) Flexible elective 5 (6) Honors elective 4 (6)

Other salient features are:

1. *BTP 1 or BTP 2 are not mandatory, however, BTP 1 is a prerequisite for BTP 2 and must be done with the same guide.
2. Honors electives can be any 4 courses from the department that are 400 level or above. Courses with significant content overlap cannot be taken. BTP can be taken to complete the Honors requirements, with the constraint in (1).