

Year & Sem:	Course Code: ME3505	Course Name: Advanced Materials Technology	No. of Credits: 4	L 2	T&PS 2	P 0
Advanced Materials: Introduction, Demand of advanced materials, design principles and processing. Structural Materials: Porous matrix ceramics- composites, Metallic foam, Cellular Materials. Nano tubes, Nano wires. Mechanically alloyed oxide dispersion strengthened superalloys, High strength and ductile bulk quasi crystalline alloys and their composites. Thermal barrier coating for aero engines and gas turbines. Processing of Ni- base superalloys for turbine engine discs, Gamma- Titanium aluminades. Functional Materials: Low dielectric constant materials, optoelectronic materials. Glassy and Nano crystalline materials for soft and hard magnetic properties and their applications. Smart Materials: Shape memory alloys, hydrogen storage alloys, Functionally gradient material (FGM). References/Text Books: Lecture Plan: Unit-I & -II syllabus for MID-I, Unit-III & -IV syllabus for MID-II and Unit-V & -VI syllabus for MID-III examinations. Video Lectures (Web Links): Study Materials (Web Links): Problems & Solutions (Web Links): Assignments (Web Links):						