

SYLLABUS :-

Introduction: Natural biological materials: structure and properties (bone, skin and other elastic tissues). Biocompatibility: tissue response to biomaterials; corrosion. Testing of biomaterials: Metallic materials in medical application: Stainless steel, cobalt based alloys, titanium based alloys (including shape memory alloys). Ceramics and glasses-bioceramics: nearly inert ceramics, bio-reactive glasses and glass ceramics, porous ceramics; Calcium phosphate ceramics: grafts, coatings Physico-chemical surface modification of materials used in medicine. Composites - reinforcing systems-fabrication, mechanical properties, absorbable matrix composites, non-absorbable matrix composites, Implants: internal fracture fixation. joint replacement, shape memory alloys.