

Department of Materials Engineering

Ph.D. Program

Graduate students according to their field of study should take 16 credits and a research project (20 credits).

Curriculum for the Degree of PhD in Materials Engineering: *Materials Engineering*

	COURSE TITLE	CREDITS
Core Courses	Advanced Engineering Mathematics	3
	Solid State Physics	3
Elective Courses	Advanced Biomaterials	2
	Advanced Surface Engineering	2
	Engineering Design of Castings	2
	Elasticity and Plasticity	2
	Nanostructured Materials	2
	Tribology	2
	Lattice Defects	2
	Fracture	2
	Fatigue	2
	Creep	2
	Advanced welding Metallurgy	2
	Advanced Welding Methods	2
	Texture and Anisotropy	2
	Modeling Materials Processing	2
	Electro-ceramic I	2
	Electro-ceramic II	2
	Advanced casting	2
	Finite Elements	2
	Recovery and Recrystallization	2
	Engineering Design of Castings	2
	Composites	2
	Advanced Topic in Materials Engineering	2
	Advanced Casting Processes	2
Multi-Component Systems	2	
Materials science and Engineering in micro-electronics	2	
Engineering ceramics	2	
High Temperature Physical Chemistry	2	

Curriculum for the Degree of PhD in Materials Engineering: *Biomaterials*

	COURSE TITLE	CREDITS
Preliminary Courses	Anatomy	2
	Physiology I	2
	Physiology II	2
	Biochemistry	2
	Materials in Medicine	3
Core Courses	Introduction to Biocompatibility	2
	Polymeric Biomaterials	3
	Metallic Biomaterials	2
	Laser & its Medical Application	3
	Deterioration of Biomaterials in Bio-environments	2
	Principles & Appl. of Surf. Eng. Med	2
	Properties & Appl. of Bioceramics in Medicine	2
	Char. & Selection Methods of Biomaterials	2
	Dental Materials	2
	Materials for Implantation in Human Body	2
	Advanced Biocompatibility	2
	Composite Biomaterials	2
	Tissue Engineering	2
	Advanced biochemistry	2
	Advanced systems of biological materials	2
	Delivery in human body	3
	Special Topics in Bio-materials 1	2
	Special Topics in Bio-materials 2	2