M.Sc. Program

Graduate students according to their field of study must take 24 credits in his or her required courses, and thesis (8 credits), totally 32 credits to obtain M.Sc. degree.

Curriculum for the Degree of Master of Science in Materials Engineering: ***Identification and Selection of Materials***

	COURSE TITLE	CREDITS
Core Courses		
	Advanced Metallography and Lab	3
	Advanced Materials Thermodynamics	2
	Diffusion in Solids	2
	Advanced Solidification Processing	2
	Metallurgical Phase Transformation	2
	Theory of Dislocations	2
	Errors in Measurements	1
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
	Model ling 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
	Cast Composites	2
	Advanced Topic in Materials Engineering	2
	Advanced Casting Processes	2
	Multi-Component Systems	2
	Materials Science and Eng. in Micro-electronics	2
	Engineering Ceramics	2

Curriculum for the Degree of Master of Science in Materials Engineering: *Corrosion and Protection of Materials*

	COURSE TITLE	CREDITS
Core Courses		
	Advanced Metallography and Lab	3
	Advanced MaterialsThermodynamics	2
	Advanced Electrochemistry	2
	Kinetics in Materials Engineering	2
	Advanced Corrosion	2
	Cathodic and Anodic Protection	2
	Advanced corrosion Lab	2
	High Temperature Corrosion	2
	Mechanical Aspects of Corrosion	2
Elective Courses		
	Errors in Measurements	1
	Advanced Transfer Phenomena	2
	Advanced welding Metallurgy	2
	Advanced Welding Methods	2
	Texture and Anisotropy	2
	Finite Elements	2
	Recovery and Recrystallization	2
	Composites	2
	Corrosion Inhibitors	2
	High Temperature Oxidation and Corrosion	2
	Paints and conversion coatings	2
	Corrosion in Natural Environment	2

Curriculum for the Degree of Master of Science in Materials Engineering: *Extractive Metallurgy*

	COURSE TITLE	CREDITS
Core Courses		
	Advanced Metallography and Lab	3
	Advanced Materials Thermodynamics	2
	Kinetics in Materials Engineering	2
	Theory of Pyrometallurgy	2
	HydroMetallurgy	2
Elective Courses		
	Extraction of rare metals	2
	Sponge iron	2
	Advanced Transfer Phenomena	2
	Finite Elements	2
	High Temperature Physical Chemistry	2
	Multi-Component Systems	2
	Engineering ceramics	2
	Special Topics	2
	Errors in Measurements	1

Curriculum for the Degree of Master of Science in Materials Engineering: *Casting*

	COURSE TITLE	CREDITS
Core Courses		
	Advanced Metallography and Lab	3
	Advanced Materials Thermodynamics	2
	Engineering Design of Castings	2
	Advanced Solidification Processing	2
	Advanced Transfer Phenomena	2
	Advanced Casting Processes	2
	Special Topics in Casting & Solidification	2
	Errors in Measurements	1
Elective Courses		
	Techno-economi Studies in Casting Industry	2
	Cast composites	2
	Modelling of Casting and Solidification Processes	2
	Ingot Casting	2
	Fluid Mechanics in casting	2
	Powder Injection Metallurgy	2
	Advanced Surface Engineering	2
	Advanced welding Metallurgy	2
	Advanced Welding Methods	2
	Composites	2