

Master of Science in Energy Science and Technology
School of Advanced Sciences

Programme Credit Structure		M.Sc.			PHY4209	Scientific Computation Fundamentals of	3	2	4
University Core Courses	12				PHY4210	Electrochemistry and Basics of Batteries	4	0	4
Programme Core Courses	53				PHY4211	Thermodynamics of energy conversion & Storage	4	0	4
Programme Elective	12				PHY4213	Sophisticated Instruments Lab	0	2	1
University Elective	03				PHY4301	Digital Electronics and Linear Integrated Circuits	3	2	4
Total Graded Credit Requirement	80				PHY4213	Industry Seminars	0	4	2
University Core [12 Credits]					Programme Electives (12 Credits)				
Course Code	Course Title	T	P	C	PHY4307	Battery Science and Technology	3	2	4
MIT5001	Internship/CO-OP/ Design Project	0	0	9	PHY4311	Solar Energy Conversion: Science and Technology	3	0	3
ENG5001	Technical and Research Writing	1	2	2	PHY4310	Hydrogen and Fuel Cells Decarbonization and	3	0	3
STS5001	Essentials of Business Etiquette and Problem Solving	0	2	1	PHY4313	Recycling-Renewable Energy Technologies	3	0	3
Programme Core (53 Credits)					PHY4302	Applied Magnetics	3	0	3
PHY4105	Foundations of Material Synthesis and Processing	4	0	4	PHY4303	Applied Optics	3	0	3
PHY4106	Advanced Characterization for Materials	4	0	4	PHY4304	Nanomaterials: Devices and Applications	3	0	3
PHY4107	Functional Nanomaterials	4	0	4	PHY4306	Optical Fibers Magneto electric Polymer	3	0	3
PHY4108	Mathematical Methods for Materials Science & Engineering	3	0	3	PHY4305	Composites and their Applications	3	0	3
PHY4109	Applications of Quantum Mechanics	3	0	3	University Electives (3 Credits)				
PHY4110	Electromagnetic Materials	3	0	3	ENGXXXX	Advanced Soft Skills - I	0	2	1
PHY4205	Basic Electronics	3	2	4	FRL1001	Basic French	2	0	2
PHY4100	General Physics Lab	0	2	1	FRL1004	Basic Spanish	2	0	2
PHY4207	Nanomaterials for Energy Applications	4	0	4	FRL1005	German for Beginners	2	0	2
PHY4208	Biomaterials and Applications	4	0	4	FRL1006	Japanese for Beginners	2	0	2
					PHY4206	Fundamentals of Vacuum Science and Thin Film Technology	3	0	3