Maulana Azad National Institute of Technology, Bhopal – 462003
Energy Centre

M Tech in Energy System Management

SCHEME OF STUDY (wef July 2021)

First Semester:

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
MTH 511	Advanced Mathematics	3	-	-	3
ES 511	Energy Audit and Management	3	-	-	3
ES 512	Operation Research and Management	3	-	-	3
ES 513	Sustainable Energy Management-1	3	-	-	3
HUM 511	Communication skills	2	-	-	2
	Elective-1 (A)	3	-	-	3
	Elective-2 (B)	3	-	-	3
ES 514	Lab-1	-	-	2	1
ES 515	Seminar-1	-	-	2	1
Total Hours: 24 Total Credits: 22		Total Semester Credits			22

Second Semester

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
ES 521	Sustainable Energy Management-2	3	-	-	3
ES 522	Energy Management in Buildings	3	-	-	3
ES 523	Energy Policy and Planning	3	-	-	3
	Elective-3 (A)	3	-	-	3
	Elective-4 (A)	3	-	-	3
	Elective-5 (C)	3	-	-	3
EC 524	Research Methodology	1	1	-	2
ES 525	Lab-2			2	1
ES 526	Seminar-2	-	-	2	1
Total Hours: 24 Total Credits: 44		Total Semester Credits			22

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Third Semester:

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
ES 611	Dissertation Phase - I	-	-	32	16
Total Hours: 32 Total Credits: 60		Total Semester Credits			16

Fourth Semester:

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
ES 621	Dissertation Phase - II	-	-	40	20
Total Hours: 40 Total Credits: 80		Total Semester Credits			20

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List of Program Electives A		List of Open Electives C	
ES 551	Project and Financial Management of Energy Systems	ARP - 581	Introduction to Urban Planning
ES 552	Power Controllers for Energy Systems	BSE – 581	Bioprocess Engineering
ES 553	Intellectual Property Rights	BSE – 582	Biophysics Tools and Techniques
ES 554	Waste Management	CHE – 581	Analytical Techniques
ES 555	Ocean and Geothermal Systems	CHE – 582	Green Technology & Processes
ES 556	Power Plant Engineering	CE – 581	Solid Waste Management
ES 557	Smart Energy Systems	CE – 582	Basic Concept of GIS
ES 558	Energy Modeling and Simulation	CE – 583	Road Safety
ES 559	Energy Efficiency in Electrical Utilities	CSE – 581	Machine Learning
ES 560	Alternative Fuels	CSE – 582	Advanced Data Structures and Algorithms
ES 561	Energy Efficiency in Thermal Utilities	PHY – 581	Nanotechnology and Nanoscience
ES 562	Smart and Micro Grid	EE – 581	Electric Machines & Applications
		EE – 582	Control and Instrumentation
		ECE – 581	Introduction to Fuzzy Logic
		ECE – 582	Neural Networks and its Applications
List of Departmental Electives B		HUM – 582	Applied Psychology: Human Centered Design and Engineering
RE 513	Energy Storage Technologies	MTH – 581	Advanced Operations Research
RE 551	Economics and Planning of Energy	MTH – 582	Computing Technologies
RE 556	Small Hydro Power	ME – 581	Value Engineering
RE 558	Green Buildings	ME – 582	Design Thinking
RE 560	Climate Change and Carbon Sequestration	ME - 583	Mechatronics and NDT in Engineering
RE 561	Pollution Control Technologies	MME – 581	Advanced Instrumentation Methods for Material Analysis
		MME – 582	Smart Materials and their Application
		MBA-581	Engineering Startup Management