

## Course Template for M.S. (R)

Courses	Semester →	1	2	Summer Term	3	4
		SEE-601* [9]	SEE-604* [9]		SEE899 [36]	SEE899 [36]
		SEE-602* [9]	SEE-605** [9]	0-2 Research units (SEE899) <sup>#</sup>		
		SEE-603* [9]	SEE-612* [9]			
		SEE-609*,& [9]	SEE801/802** [0]		SEE801/802**[0]	
		0-2 DE [0-18]	0-2 DE [0-18]			
		0-1 OE <sup>\$</sup> [0-9]	0-1 OE <sup>\$</sup> [0-9]			
		0-2 Research units (SEE899)	0-2 Research units (SEE899)			
	Credits →	36	36	[0-18] <sup>#</sup>	36	36
					<b>Min. Total Credits (PG)</b>	<b>144</b>

1. Total number of courses: 6 for students from 2025 batch and onwards.
2. \*Student must take a total of 2 core basket courses combined from Semester I and II.
3. \*\*Compulsory course.
4. \$,&Refer to the open elective course basket for more details.
5. <sup>#</sup>Summer research credits (recommended).
6. A student should take at the least 2 DE's.

<b>Department Electives (DE)</b>	
SEE-606: Electrochemical Energy Systems	SEE-621: Biomass Conversion and Biorefineries
SEE-607: Hydrogen Energy: Production, Storage and Utilization	SEE-622A: Sustainable Energy- Enabling Net Zero Emissions
SEE-608: Introduction to Bioenergy and Biofuels	SEE-623: Fuel Cell Electrical Energy Systems
SEE-610: Introduction to Materials Modelling and Simulations	SEE-624A: Design Strategies for Net-Zero Energy Buildings
SEE-611: Energy Systems: Modelling and Analysis	SEE-625: Structural, Microstructural and Spectroscopic Characterization of Materials
SEE-612: Manufacturing of Energy Systems	SEE-626M: Ecological Principles and Biodiversity for Sustainability
SEE 613: Solar Photovoltaics	SEE-628: Policy Processes and Analytical Methods: Application to Climate Policies
SEE-614: Wind Energy	SEE-629M: Ecology, Equity and the Economy
SEE-615: Solar Thermal Engineering	SEE-631 Sustainable Forest Management
SEE-616: Renewables Integrated Smart Power Systems	SEE-632: Heating, Ventilation, and Air-Conditioning of Buildings
SEE-617: Introduction to Sustainable Energy Policy	SEE-633: Power Electronics for Electric Vehicles
SEE-618A: Energy Efficient Building Design	SEE-634: Critical Material Resources for Clean Energy Transition
SEE-619: Finite Volume Methods for Engineers	
SEE-620A: Heat Driven Cooling Systems	Any other SEE [3-0-0-9] courses that will be added later.
<b>Open Electives (OE)</b>	
EE698E: Power Converters for EV Charging	CHE642A: Numerical Methods^
EE662: Control Techniques in Power Electronics	ME685A: Applied Numerical Methods^
EE698A: EMI/EMC in Power Electronics	AE603: Introduction to Scientific Computing^
EE798A: Design, Operation, and Control of Microgrids	CHE622A: Molecular Simulations^
EE630A: Simulations of Power Systems	ChE626A: Practical Introduction to Quantum Mechanical Methods for Scientists and Engineers^
EE660A: Basics of Power Electronic Converters	MBA681A: Energy and Carbon Markets: Economics, Policy and Regulation
EE631A: Advanced Power System Stability	MBA782A: Renewable Energy - Economics, Policy and Regulation
ME743: Fuel Cells	MBA683A: Power Sector Reform and Regulation
MSE673: Fundamentals and Applications of Electrochemistry	Any other 600 level or higher-level course in the institute of minimum 9 credits

&,\$Students can take one of these courses if they have not credited SEE 609 earlier [9].,

(i.e. Students can take ONLY one of the following set: CHE642A, ME685A, AE603, SEE-609 and ONLY one of the following two: CHE622A, ChE626A).

**Minimum credit requirement for M.S.(R).**

Coursework	54 (36 + 18 <sup>\$</sup> )
Thesis	90 (108 - 18 <sup>\$</sup> )
Total	144

<sup>\$</sup>Applicable for the admitted students from 2025 and onwards.