

Degree Requirements of MSc (Energy Systems)

(for cohorts AY2022/2023 and onwards)

The graduation requirements include obtaining a minimum Grade Point Average (GPA) of 3.0 (equivalent to an average of Grade B-) for the best 40 units.

Students of the M.Sc. (Energy Systems) must successfully complete an interdisciplinary programme of study consisting of 40 units – at least 12 units from Energy Technologies and at least 12 units from Innovation and Management. The remaining 16 units can be from any basket of courses listed below. Besides this, students can take 2 courses (equivalent to 8 units) from CDE (with approval from the programme directors).

Elective Courses in Energy Technologies

CN5190	Hydrogen Energy and Technology
CN5192	Future Fuel Options: Prospects and Technologies
CN5194	Carbon Capture Sequestration and Utilization
CN5195	Biomass and Energy
CN5207	Energy Transition Towards Net Zero
CN5216	Electronic Materials and Energy Technologies ⁺
CN5240	Principles and Applications of Battery Technologies (offering in S2 AY26/27)
CN5301	Sustainability Strategies for Energy Systems ⁺
CN5303	Industrial Case Studies for Renewable Energy Systems ^{#+}
CN5304	Process Systems Analysis and Decision-Making (offering in S2 AY26/27)
EE5713	Modern Power Systems and Smart Grid ⁺
IE5204	Energy Systems Optimization: Modelling and Analytics (offering in S2 AY26/27)
ME5207	Solar Energy Systems
ME5209	Energy Technologies and Systems
ME5211	Nuclear Energy Technologies: Fission and Fusion Systems
MLE5212	Energy Conversion and Storage
MLE5222	Nano and 2D Materials for Energy Applications
MLE5226	Problem Solving for Future Sustainability Challenges ⁺
SH5407	Sustainable Energy and Environment

Elective Courses in Innovation and Management

CN5191	Project Engineering ⁺
CN5302	Industrial Project Processes in Energy Transition ^{#+}
IE5003	Cost Analysis and Engineering Economy
IE5203	Decision Analysis
IE5206	Energy and Sustainability: A Systems Approach
IE5207	Energy Systems Modelling and Market Mechanisms
MT5007/G	Management of Technological Innovation ⁺
MT5010	Technology Forecasting, Intelligence & Foresighting ⁺
MT5020	Managing the Human Elements of Technology Management
SH5409	Sustainability and Environmental Analysis

General Elective Courses

CN5202	Selected Topics in Energy Systems ^{#+}
CN5246	Catalysis Science & Engineering
CN5366	Industrial Practice in Energy Systems (8 units) ^{#+}
CN5550	Energy Systems Project (8 units) ^{#+}

Note: All courses listed are worth 4 units each except for CN5366 Industrial Practice in Energy Systems and CN5550 Energy Systems Project which are 8 units.

** Not all courses listed above are necessarily available in any one year, and new courses may be made available from time to time.*

[#] Courses that are offered to MSc (Energy Systems) students only.

⁺ 100% Continuous Assessment; no final exam