

Energy Systems Engineering

(Formerly Sustainable Energy)

Master of Engineering: 30 Credits / 10 Courses

Students pursuing this option must complete five of the core courses and five technical electives. There is no research or thesis required for this degree.

Energy Systems Engineering Core (choose 5):	
ENPM622 Energy Conversion I - Stationary Power*	(every fall)
ENPM624 Renewable Energy Applications * or ENME701 Sustain. Energy Conversion & the Environment* [rec: ENME633]	(every fall)
ENPM627 Environmental Risk Analysis*	(every spring)
ENPM656 Energy Conversion II – Mobile Power* [ENPM672 or equivalent]	(every spring)
ENCH648K Advanced Fuel Cells and Batteries*	(every spring)
ENCH648L Photovoltaics: Solar Energy*	
ENPM654 Energy Systems Management*	(every summer)

Energy Systems Engineering Pre-approved Technical Elective courses (choose 5):	
ENPM623 Engineering Combustion Emissions for Air Pollution Control *	(every other fall)
ENPM635 Thermal Systems Design Analysis* or ENME635 Energy Systems Analysis*	(every 1.5 years)
ENSE621 Systems Engineering Concepts and Processes: A Model-Based Approach*	(every fall)
ENSE622 System Trade-off Analysis, Modeling, and Simulation* [ENSE621/ ENPM641]	(every spring)
ENPM650 Solar Thermal Energy Systems*	(every spring)
ENPM651 Heat Transfer for Modern Applications*	(every 1.5 years)
ENPM660 Wind Energy Engineering*	(every fall)
ENPM670 Advanced Energy Audit and Conservation*	
ENPM808C Ocean Energy Harvesting*	(every other spring)
ENPM809M Fundamentals of Power Electronics for Energy Systems*	(every other fall)
ENPM809Z Sustainability and Innovation	(every other spring)
ENRE447 Fundamentals of Reliability Engineering*	
ENRE600 Fundamentals of Failure Mechanisms*	
ENRE602 Reliability Analysis*	
ENRE620 Mathematical Techniques for Engineers* (credit is only granted for ENRE620 or ENPM620)	
ENRE670 Risk Assessment for Engineers I* [ENRE602]	
ENRE671 Risk Assessment for Engineers II* [ENRE670]	

NOTE: Any courses not listed above must be approved by the Senior Academic Advisor **PRIOR** to registration.

KEY	
Online Option *	(offering information)
[Prerequisite course]	