ENERGY SYSTEMS MINOR

Minor Coordinator

Please contact:

Jianshun Zhang
263 Link Hall
Syracuse University
Syracuse, NY 13244-1240
315-443-1366
jszhang@syr.edu

This minor option will provide students enrolled within the College of Engineering and Computer Science with a grouping of courses/electives that will provide academic depth in the field of energy related systems in 4 different but related tracks.

Admission to the energy systems minor is by permission of an academic advisor and requires students to be enrolled in a B.S. program in Engineering within the College of Engineering and Computer Science.

Students with sufficient technical background from other Syracuse University Academic Units may be considered for admission to the Minor in Energy Systems and such decisions will be made by the E&CS Energy Systems Committee.

Course Requirements

The following courses must be taken by all students within the minor regardless of the specific track:

Code	Title	Credits
Course Requirements		
The following courses must be taken by all students within the minor regardless of the specific track:		
MAE 251	Thermodynamics	3
CEN 252	Chemical Engineering Thermodynamics I	3
MAE 548	Engineering Economics and Technology Valuation	3
ECN 203	Economic Ideas and Issues	3
MAE 551	Energy Conversion	3
Track-Specific Courses		
In addition, 3 track-specific courses must be taken from a list of required and elective courses for each of the 4 individual tracks. These 4 track specific lists are available from an academic advisor.		
Thermo-Mechanical Energy Systems Track		
Select any two of the following courses, plus one elective from any of the four Energy Systems Tracks:		6
MAE 553	HVAC Systems Analysis and Design	
MAE 554	Principles of Refrigeration	
MAE 585	Principles of Turbomachines	
MAE 457	Automotive Engineering for ECS Students	
AEE 446	Air-breathing and Rocket Propulsion	
Nuclear Energy Track		
NUC 301	Introduction to Nuclear Engineering and Reactor Safety	3
NUC 510	Nuclear Reactor Design, Operation and Safety	3
or NUC 520	Radiochemistry, Nuclear Fuel Reprocessing and Nonproliferation	
Plus 1 of the remaining NUC Electives, or 1 Elective from any other Energy Systems Track:		3
NUC 510	Nuclear Reactor Design, Operation and Safety	
NUC 520	Radiochemistry, Nuclear Fuel Reprocessing and Nonproliferation	
NUC 530	Electric Power Generation and Distribution	
NUC 540	Experiential Studies in Nuclear Technology	
Renewable Energy Track		
Select any 2 of the following, plus 1 elective from any of the 4 energy Systems Tacks:		6
CEN 455	Materials for Energy Systems	
CEN 462	Biofuels, Bioproducts, and Biorefining	
or CEN 421	Biochemical Engineering	
MAE 486	Fuel Cell Science and Technology	
MAE 587	Design of Solar Energy System	
or PHY 305	Solar Energy Science and Architectures	
MAE 588	Principles of Wind Turbines	
Others to be announced		
Electric Power Track		
Select any two electives from the following list:		6
Plus one elective from any of the 4 Energy Systems Tracks. (Note: You can take either ELE 514 or ELE/NUC 530 but not both)		
ELE 324	Electromagnetics I	
ELE 416	Electromechanical Devices	

Notes

Because MEE students take ECN 203 Economic Ideas and Issues as a required SS/H course they must take another SS/H elective as part of their minor.