

# MASTER OF ENGINEERING IN ENERGY SYSTEMS, ENERGY GENERATION AND SUSTAINABILITY TRACK

## Curriculum

Code	Title	Credit Hours
<b>Core Courses:</b>		<b>(9)</b>
Select 9 credit hours from the following list:		9
CHE 543	Energy, Environment, and Economics	3
ECE 418	Power System Analysis	3
MMAE 501	Engineering Analysis I	3
MMAE 522	Nuclear, Fossil-Fuel, and Sustainable Energy Systems	3
MMAE 525	Fundamentals of Heat Transfer	3
<b>Energy Generation and Sustainability Courses</b>		<b>(9)</b>
Select 9 credit hours from the following courses:		9
CHE 541	Renewable Energy Technologies	3
ECE 411	Power Electronics	4
ECE 412	Hybrid Electric Vehicle Drives	4
ECE 539	Computer Aided Design of Electric Machines	3
ECE 552	Adjustable Speed Drives	3
ECE 580	Elements of Sustainable Energy	3
MMAE 425	Direct Energy Conversion	3
MMAE 433	Design of Thermal Systems	3
MMAE 453	Electrified Vehicle Powertrains	3
MMAE 523	Fundamentals of Power Generation	3
MMAE 524	Fundamentals of Combustion	3
MMAE 526	Heat Transfer: Conduction	3
MMAE 527	Heat Transfer: Convection and Radiation	3
<b>Elective Courses</b>		<b>(12)</b>
Select 12 credit hours from the following courses:		12
CAE 513	Building Science	3
CAE 515	Building Energy Modeling	3
CAE 526	Energy Conservation in Buildings	3
CHE 541	Renewable Energy Technologies	3
ECE 411	Power Electronics	4
ECE 412	Hybrid Electric Vehicle Drives	4
ECE 539	Computer Aided Design of Electric Machines	3
ECE 551	Advanced Power Electronics	3
ECE 552	Adjustable Speed Drives	3
ECE 555	Power Market Operations	3
ECE 556	Power Market Economics and Security	3
ECE 561	Deregulated Power Systems	3
ECE 562	Power System Transaction Management	3
ECE 564	Control and Operation of Electric Power Systems	3
ECE 580	Elements of Sustainable Energy	3
ECE 581	Elements of Smart Grid	3
ECE 582	Microgrid Design and Operation	3
ECE 597	Special Problems	1-3
MMAE 425	Direct Energy Conversion	3
MMAE 433	Design of Thermal Systems	3
MMAE 453	Electrified Vehicle Powertrains	3

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MMAE 520	Advanced Thermodynamics	3
MMAE 523	Fundamentals of Power Generation	3
MMAE 597	Special Topics	1-20

**Minimum Degree Credits Required: 30**