DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

CURRICULUM MAP OF MASTER OF SCIENCE IN ENGINEERING

Robotics and Control Concentration

	(EML 6805) Engineering Foundation for Robotics	(EEL 5683) Intro. to Autonomous Systems	(EEL 5646) Advanced Control Systems	(EEL 5XX1) Digital Control Systems	(EEL 5XX1) Digital Signal Processing	(EEL 5XX1) Communications Networks	(EEL 6617) Multivariable Linea Control Systems	(EEL 6692) Wearable Robotics	Engineering Technical Electives	(EGN 6429) Principles of Engineering Analysis	Thesis/Project
Content											
Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	I,R*	I,R*	I,R*	I,R*	I,R*	I,R*	I,R*	I,R*	R,M*	M,A*	M,A*
Critical Thinking											
Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.	I,R	I,R	I,R	I,R	I,R	I,R	I,R	I,R	R,M	M,A	M,A
Communication											
Communicate effectively verbally and in writing with a range of audiences.										M,A	M,A
Integrity/Values											
An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.										M,A	M,A
Project Management											
Apply the engineering design process to produce solutions that meet specified needs with consideration for public health and safety, and global, cultural, social, environmental, economic, and other factors as appropriate to the discipline.										M,A	M,A

* Entries in the table above identify where each program outcome is Introduced (I), Reinforced (R), Mastered (M), and Assessed (A).

Power Systems Concentration

	(EEL 5266) Power System Operation and Control	(EEL 5291) Smart Distribution System	(EEL 6245) Power Electronics and Utility Applications	(EEL 5XX1) Advanced Topics in Power Electronics	(EEL 5XX1) Intelligent Systems Applications	(EEL 5277) Cyber Security of Industrial Control Systems	(EEL 6XX1) Data Analytics and Applications to Engineering	Engineering Technical Electives	(EGN 6429) Principles of Engineering Analysis	Thesis/Project
Content										
Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	I,R*	I,R*	I,R*	I,R*	I,R*	I,R*	I,R*	R,M*	M,A*	M,A*
Critical Thinking										
Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.	I,R	I,R	I,R	I,R	I,R	I,R	I,R	R,M	M,A	M,A
Communication										
Communicate effectively verbally and in writing with a range of audiences.									M,A	M,A
Integrity/Values										
An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.									M,A	M,A
Project Management										
Apply the engineering design process to produce solutions that meet specified needs with consideration for public health and safety, and global, cultural, social, environmental, economic, and other factors as appropriate to the discipline.									M,A	M,A

* Entries in the table above identify where each program outcome is Introduced (I), Reinforced (R), Mastered (M), and Assessed (A).

Advanced Materials Concentration

	(EML 5546) Composite Materials	(EML 5570) Principles of Fracture Mechanics	(EML 6237) Advanced Solid Mechanics	(EEL 6XX1) Data Analytics and Applications to Engineering	Engineering Technical Electives	(EGN 6429) Principles of Engineering Analysis	Thesis/Project
Content							
Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	I,R*	I,R*	I,R*	I,R*	R,M*	M,A*	M,A*
Critical Thinking							
Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.	I,R	I,R	I,R	I,R	R,M	M,A	M,A
Communication							
Communicate effectively verbally and in writing with a range of audiences.						M,A	M,A
Integrity/Values							
An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.						M,A	M,A
Project Management							
Apply the engineering design process to produce solutions that meet specified needs with consideration for public health and safety, and global, cultural, social, environmental, economic, and other factors as appropriate to the discipline.						M,A	M,A

* Entries in the table above identify where each program outcome is Introduced (I), Reinforced (R), Mastered (M), and Assessed (A).