MASTER OF SCIENCE IN ENGINEERING AND MANAGEMENT

Engineering Electives		
Civil and Environmental Engineering		
1.001	Engineering Computation and Data Science	12
1.125	Architecting and Engineering Software Systems	12
1.208	Resilient Networks	12
1.261[J]	Case Studies in Logistics and Supply Chain Management	6
1.263[J]	Urban Last-Mile Logistics	6
1.275[J]	Business and Operations Analytics	6
1.286[J]	Urban Energy Systems and Policy	12
1.472[J]	Innovative Project Delivery in the Public and Private Sectors	6
1.541	Mechanics and Design of Concrete Structures	12
1.573[J]	Structural Mechanics	12
1.818[J]	Sustainable Energy	12
Mechanical Engineering		
2.096[J]	Introduction to Modeling and Simulation	12
2.111[J]	Quantum Computation	12
2.120	Introduction to Robotics	12
2.131	Advanced Instrumentation and Measurement	12
2.140	Analysis and Design of Feedback Control Systems	12
2.151	Advanced System Dynamics and Control	12
2.154	Maneuvering and Control of Surface and Underwater Vehicles	12
2.156	Artificial Intelligence and Machine Learning for Engineering Design	12
2.160	Identification, Estimation, and Learning	12
2.165[J]	Robotics	12
2.183[J]	Biomechanics and Neural Control of Movement	12
2.22	Design Principles for Ocean Vehicles	12
2.42	General Thermodynamics	12
2.55	Advanced Heat and Mass Transfer	12
2.62[J]	Fundamentals of Advanced Energy Conversion	12
2.680	Unmanned Marine Vehicle Autonomy, Sensing, and Communication	12
2.720	Elements of Mechanical Design	12
2.737	Mechatronics	12
2.740	Bio-inspired Robotics	12
2.75[J]	Medical Device Design	12
2.76	Global Engineering	12
2.782[J]	Design of Medical Devices and Implants	12
2.788	Mechanical Engineering and Design of Living Systems	12
2.798[J]	Molecular, Cellular, and Tissue Biomechanics	12
2.810	Manufacturing Processes and Systems	12
2.821[J]	Structural Materials	12
2.83	Energy, Materials and Manufacturing	12
2.888	Professional Seminar in Global Manufacturing Innovation and Entrepreneurship	3
2.98	Sports Technology: Engineering & Innovation	6
Materials Science and Engineering		
3.207	Innovation and Commercialization	12
3.22	Structure and Mechanics of Materials	12
3.371[J]	Structural Materials	12
3.560	Industrial Ecology of Materials	12
3.70	Materials Science and Engineering of Clean Energy	12
3.963[J]	Biomaterials Science and Engineering	12
Electrical Engineering and Computer Science		
6.3102	Dynamical System Modeling and Control Design	12
6.3702	Introduction to Probability	12
6.3952	AI, Decision Making, and Society	12
6.4132[J]	Principles of Autonomy and Decision Making	12
6.4822[J]	Quantitative Physiology: Organ Transport Systems	12
6.4832[J]	Fields, Forces, and Flows in Biological Systems	12
6.4861[J]	Medical Device Design	12
6.5080	Multicore Programming	12
6.5160[J]	Classical Mechanics: A Computational Approach	12
6.5400[J]	Theory of Computation	12
6.5610	Applied Cryptography and Security	12
6.5660	Computer Systems Security	12
6.5810	Operating System Engineering	12

6.5820	Computer Networks	12
6.5830	Database Systems	12
6.5940	TinyML and Efficient Deep Learning Computing	12
6.6010	Analysis and Design of Digital Integrated Circuits	12
6.6020	High-Frequency Integrated Circuits	12
6.6300	Electromagnetics	12
6.6330	Fundamentals of Photonics	12
6.6400	Applied Quantum and Statistical Physics	12
6.6500[J]	Integrated Microelectronic Devices	12
6.7300[J]	Introduction to Modeling and Simulation	12
6.7410	Principles of Digital Communication	12
6.7810	Algorithms for Inference	12
6.7910[J]	Statistical Learning Theory and Applications	12
6.8110[J]	Cognitive Robotics	12
6.7900	Machine Learning	12
6.7910[J]	Statistical Learning Theory and Applications	12
6.7930[J]	Machine Learning for Healthcare	12
6.8210	Underactuated Robotics	12
6.8110[J]	Cognitive Robotics	12
6.8210	Underactuated Robotics	12
6.8300	Advances in Computer Vision	12
6.8420	Computational Design and Fabrication	12
6.8510	Intelligent Multimodal User Interfaces	12
6.8610	Quantitative Methods for Natural Language Processing	12
6.8620[J]	Spoken Language Processing	12
6.8800[J]	Biomedical Signal and Image Processing	12
Chemical Engineering		
10.392[J]	Fundamentals of Advanced Energy Conversion	12
10.524	Pharmaceutical Engineering	9
10.53[J]	Advances in Biomanufacturing	3
10.551	Systems Engineering	9
10.552	Modern Control Design	9
10.595	Molecular Design and Bioprocess Development of Immunotherapies	9
10.626	Electrochemical Energy Systems	12
Aeronautics and Astronautics		
16.31	Feedback Control Systems	12
16.32	Principles of Optimal Control and Estimation	12
16.363	Communication Systems and Networks	12
16.422	Human Supervisory Control of Automated Systems	12
16.423[J]	Aerospace Biomedical and Life Support Engineering	12
16.511	Aircraft Engines and Gas Turbines	12
16.512	Rocket Propulsion	12
16.522	Space Propulsion	12
16.851	Introduction to Satellite Engineering	6
16.885	Aircraft Systems Engineering	12
16.89[J]	Space Systems Engineering	12
16.895[J]	Engineering Apollo: The Moon Project as a Complex System	12
Biological Engineering		
20.201	Fundamentals of Drug Development	12
20.203[J]	Neurotechnology in Action	12
20.405[J]	Principles of Synthetic Biology	12
20.410[J]	Molecular, Cellular, and Tissue Biomechanics	12
20.420[J]	Principles of Molecular Bioengineering	12
20.445[J]	Methods and Problems in Microbiology	12
20.463[J]	Biomaterials Science and Engineering	12
20.554[J]	Advances in Chemical Biology	12
Nuclear Science and Engineering		
22.13	Nuclear Energy Systems	6
22.55[J]	Radiation Biophysics	12
22.611[J]	Introduction to Plasma Physics I	12
22.811[J]	Sustainable Energy	12
Institute for Data, Systems and Society		
IDS.131[J]	Statistics, Computation and Applications	12
IDS.521[J]	Energy Systems for Climate Change Mitigation	12
IDS.522	Mapping and Evaluating New Energy Technologies	12