

Sorted by "Department" below and then by "Course Number"		
(Updated March 27, 2019)		

E60 Courses (sorted by "Course Number" below)

Department	Department Number	Course Number	Title	Course Units	Topics Units (TU)
General	E60	110	Engineering Entrepreneurship, Innovation and Design	1.0	0.00
General	E60	120	First-Year Engineering Seminar	1.0	0.00
General	E60	150	Topics in Undergraduate Research	1.0	0.00
General	E60	220	Presentation Skills for Scientists and Engineers	3.0	0.00
General	E60	250	Engineering Impacts on Global Culture	3.0	0.00
General	E60	310	Technical Writing	3.0	0.00
General	E60	324	From Concept to Market: The Business of Engineering	3.0	3.00
General	E60	409	Engineering Thought: Examining the Role of Engineers, Scientists, and Technology in Innovation	1.0	0.00
General	E60	410	Founders Laboratory STL: Experiencing Tech Entrepreneurship & Engr Leadership	2.0	0.00
General	E60	4501	Engineering Ethics and Sustainability	1.0	0.00
General	E60	4502	Engineering Leadership and Team Building	1.0	0.00
General	E60	4503	Conflict Management and Negotiation	1.0	0.00
General	E60	4504	Essentials of Project Management	1.0	0.00
General	E60	4505	Publication Writing	3.0	0.00

E62 Courses (sorted by "Course Number" below)

Department	Department Number	Course Number	Title	Course Units	Topics Units (TU)
BME	E62	140	Introduction to Biomedical Engineering	3.0	3.00
BME	E62	210	Clinical Applications of BME	2.0	0.00
BME	E62	240	Biomechanics	3.0	3.00
BME	E62	240L	Biomechanics Laboratory	1.0	1.00
BME	E62	301A	Quantitative Physiology I	4.0	4.00
BME	E62	301B	Quantitative Physiology II	4.0	4.00
BME	E62	320B	Bioengineering Thermodynamics	3.0	3.00
BME	E62	329	Biothermodynamics in Practice	3.0	3.00
BME	E62	366	Transport Phenomena in Biomedical Engineering	3.0	3.00
BME	E62	400	Independent Study	0.0	0.00
BME	E62	400A	Independent Study	1.0	1.00
BME	E62	400B	Independent Study	2.0	2.00
BME	E62	400C	Independent Study	3.0	3.00
BME	E62	401	Biomedical Engineering Design	3.0	3.00
BME	E62	401A	Senior Capstone Design A	2.0	2.00
BME	E62	401B	Senior Capstone Design B	2.0	2.00
BME	E62	410	International Community Service Learning Project	2.0	0.00
BME	E62	413	Engineering for First- and Third-World Health	3.0	0.00
BME	E62	432	Physics of Biopolymers and Bioinspired Polymers	3.0	3.00
BME	E62	433	Biomedical Signal Processing	3.0	3.00
BME	E62	442	Biomacromolecules Design and Engineering	3.0	3.00
BME	E62	443	Molecular and Cellular Engineering	3.0	3.00
BME	E62	444	Biomedical Instrumentation	3.0	3.00
BME	E62	450	Numerical Methods for Computational Modeling in Biomedicine	3.0	3.00
BME	E62	459	Intermediate Biomechanics	3.0	3.00
BME	E62	461	Protein Structure and Dynamics	3.0	3.00
BME	E62	464	Special Topics: Orthopaedic Biomechanics--Cartilage/Tend	3.0	3.00
BME	E62	465	Biosolid Mechanics	3.0	3.00
BME	E62	471	Bioelectric Phenomena	3.0	3.00
BME	E62	472	Biological Neural Computation	3.0	3.00
BME	E62	4902	Biological Neurophysiology	3.0	3.00
BME	E62	4903	Physical Methods for Biomedical Scientists	3.0	3.00
BME	E62	4904	Interfaces and Attachments in Natural and Engineered Structures	3.0	3.00
BME	E62	493	Computational Methods for Inverse Problems	3.0	0.00
BME	E62	494	Ultrasound Imaging	3.0	3.00
BME	E62	500	Independent Study	0.0	0.00
BME	E62	501	Graduate Seminar	0.0	0.00
BME	E62	501C	BME Doctoral Seminar Series	1.0	0.00
BME	E62	507	Radiological Physics and Dosimetry	3.0	0.00
BME	E62	5071	Radiobiology	2.0	0.00
BME	E62	5072	Radiation Oncology Physics	3.0	0.00
BME	E62	5073	Radiation Protection and Safety	2.0	0.00
BME	E62	523	Biomaterials Science	3.0	3.00
BME	E62	524	Tissue Engineering	3.0	3.00
BME	E62	527	Design of Artificial Organs	3.0	3.00
BME	E62	528	Translational Regenerative Medicine	3.0	0.00
BME	E62	529	Design of Cardiac Assist Devices	3.0	0.00
BME	E62	530A	Molecular Cell Biology for Engineers	4.0	0.00
BME	E62	532	Physics of Biopolymers and Bioinspired Polymers	3.0	3.00
BME	E62	533	Biomedical Signal Processing	3.0	3.00
BME	E62	537	Computational Molecular Biology	3.0	3.00
BME	E62	538	Cell Signal Transduction	3.0	0.00
BME	E62	542	Biomacromolecules Design and Engineering	3.0	3.00
BME	E62	543	Molecular and Cellular Engineering	3.0	3.00
BME	E62	544	Biomedical Instrumentation	3.0	0.00
BME	E62	550	Numerical Methods for Computational Modeling in Biomedicine	3.0	3.00
BME	E62	5565	Mechanobiology of Cells and Matrices	3.0	3.00
BME	E62	559	Intermediate Biomechanics	3.0	3.00
BME	E62	5610	Protein Structures and Dynamics	3.0	3.00
BME	E62	562	Mechanics of Growth and Development	3.0	3.00
BME	E62	564	Special Topics: Orthopaedic Biomechanics--Cartilage/Tend	3.0	3.00
BME	E62	565	Biosolid Mechanics	3.0	3.00
BME	E62	5702	Application of Advanced Engineering Skills for Biomedical Innovators	3.0	0.00

BME	E62	5711	Ideation of Biomedical Problems and Solutions	3.0	0.00
BME	E62	5712	Implementation of Biomedical Solutions	3.0	0.00
BME	E62	5713	Translation of Biomedical Solutions to Products	3.0	0.00
BME	E62	572	Biological Neural Computation	3.0	3.00
BME	E62	5722	Feasibility Evaluation of Biomedical Products	2.0	0.00
BME	E62	5723	Realization of Biomedical Products in the Marketplace	1.0	0.00
BME	E62	5731	Business Foundations for Biomedical Innovators	2.0	0.00
BME	E62	5732	Entrepreneurship for Biomedical Innovators	2.0	0.00
BME	E62	574	Quantitative Bioelectricity and Cardiac Excitation	3.0	3.00
BME	E62	575	Molecular Basis of Bioelectrical Excitation	3.0	3.00
BME	E62	5771	Biomedical Product Development	3.0	0.00
BME	E62	5772	Biomedical Business Development	3.0	0.00
BME	E62	5799	Independent Study for Candidates in the Master of Engineering Program	6.0	0.00
BME	E62	5820	Fundamentals and Applications of Modern Optical Imaging	3.0	3.00
BME	E62	589	Biological Imaging Technology	3.0	3.00
BME	E62	5901	Integrative Cardiac Electrophysiology	3.0	3.00
BME	E62	5902	Special Topics: Cellular Neurophysiology	3.0	3.00
BME	E62	5903	Physical Methods for Biomedical Scientists	3.0	3.00
BME	E62	591	Biomedical Optics I: Principles	3.0	3.00
BME	E62	5911	Cardiovascular Biophysics Journal Club	1.0	0.00
BME	E62	5912	Applied Mathematics for Biomedical Sciences	3.0	0.00
BME	E62	5913	Molecular Systems Biology: Computation & Measurements for Understanding Cell Physiology and Disease	3.0	3.00
BME	E62	593	Computational Methods for Inverse Problems	3.0	0.00
BME	E62	594	Ultrasound Imaging	3.0	3.00
BME	E62	595	Drug Delivery Systems: Principles and Applications	3.0	0.00
BME	E62	599	Masters Research	0.0	0.00
BME	E62	600	Doctoral Research	0.0	0.00
BME	E62	601	Research Rotation for BME Doctoral Students	0.0	0.00
BME	E62	601C	Research Rotation for BME Doctoral Students	3.0	0.00

E44 Courses (sorted by "Course Number" below)

Department	Department Number	Course Number	Title	Course Units	Topics Units (TU)
EECE	E44	101	Introduction to Energy, Environmental and Chemical Engineering	3.00	3.00
EECE	E44	103	Topics in Energy, Environmental and Chemical Engineering	1.00	1.00
EECE	E44	112	Earth's Future: Causes and Consequences of Global Climate Change	3.00	0.00
EECE	E44	201	Engineering Analysis of Chemical Systems	3.00	3.00
EECE	E44	202	Computational Modeling in Energy, Environmental and Chemical Engineering	3.00	3.00
EECE	E44	203	Thermodynamics I in EECE	3.00	3.00
EECE	E44	204	Thermodynamics II in EECE	3.00	3.00
EECE	E44	205	Process Analysis and Thermodynamics	4.00	4.00
EECE	E44	210	Introduction to Environmental Engineering	3.00	3.00
EECE	E44	301	Transport Phenomena I: Basics and Fluid Mechanics	3.00	3.00
EECE	E44	302	Transport Phenomena II: Mass Transfer	3.00	3.00
EECE	E44	303	Transport Phenomena III: Energy Transfer Processes	3.00	3.00
EECE	E44	304	Mass Transfer Operations	3.00	3.00
EECE	E44	305	Materials Science	3.00	3.00
EECE	E44	309	Environmental Engineering Fate and Transport	3.00	3.00
EECE	E44	311	Green Engineering	3.00	3.00
EECE	E44	313	Engineering Economics, Analytics, and Policy Analysis Tools	3.00	3.00
EECE	E44	314	Air Quality and Pollution Control	3.00	3.00
EECE	E44	401	Chemical Process Dynamics and Control	3.00	3.00
EECE	E44	402	ChE Capstone	3.00	3.00
EECE	E44	403	Chemical Reaction Engineering	3.00	3.00
EECE	E44	405	Unit Operations Laboratory	4.00	4.00
EECE	E44	411	International Experience in Energy, Environmental and ChE	3.00	3.00
EECE	E44	412	Sustainability Exchange: Community and University Practicums	3.00	0.00
EECE	E44	413	Energy Systems	3.00	3.00
EECE	E44	414	New Product and Process Development	3.00	2.00
EECE	E44	416	Chemical Process Safety	3.00	3.00
EECE	E44	418	Principles of Surface and Colloid Science	3.00	3.00
EECE	E44	420	Properties of Materials	3.00	3.00
EECE	E44	421	Advanced Energy Lab	3.00	3.00
EECE	E44	424	Digital Process Control Laboratory	3.00	3.00
EECE	E44	425	Environmental Engineering Lab	3.00	3.00
EECE	E44	426	ChE Honors Design Project	3.00	1.00
EECE	E44	428	Special Topics: Practical Beer Brewing Process and Techniques	3.00	2.00
EECE	E44	501	Transport Phenomena in EECE	3.00	0.00
EECE	E44	502	Advanced Thermodynamics in EECE	3.00	0.00
EECE	E44	503	Mathematical Methods in EECE	3.00	0.00
EECE	E44	504	Aerosol Science and Technology	3.00	3.00
EECE	E44	505	Aquatic Chemistry	3.00	3.00
EECE	E44	506	Bioprocess Engineering I: Fundamentals & Applications	3.00	3.00
EECE	E44	507	Kinetics and Reaction Engineering Principles	3.00	0.00
EECE	E44	508	Research Rotation	0.00	0.00
EECE	E44	509	Seminar in Energy, Environmental and Chemical Engineering	1.00	0.00
EECE	E44	510	Advanced Topics in Aerosol Science & Engineering	3.00	3.00
EECE	E44	512	Combustion Phenomena	3.00	3.00
EECE	E44	513	Topics in Nanotechnology	3.00	3.00
EECE	E44	514	Atmospheric Science and Climate	3.00	3.00
EECE	E44	515	Dynamics of Air Pollution	3.00	3.00
EECE	E44	516	Measurement Techniques for Particle Characterization	3.00	3.00
EECE	E44	518	Sustainable Air Quality	3.00	3.00
EECE	E44	531	Environmental Organic Chemistry	3.00	3.00
EECE	E44	532	Environmental Engineering Laboratory	3.00	3.00
EECE	E44	533	Physical and Chemical Processes for Water Treatment	3.00	3.00
EECE	E44	534	Environmental Nanochemistry	3.00	3.00

EECE	E44	535	Environmental Data Science	3.00	3.00
EECE	E44	536	Computational Chemistry of Molecular & Nanoscale Systems	3.00	3.00
EECE	E44	551	Metabolic Engineering & Synthetic Biology	3.00	3.00
EECE	E44	552	Biomass Energy Systems and Engineering	3.00	3.00
EECE	E44	554	Molecular Biochemical Engineering	3.00	3.00
EECE	E44	556	Bioenergy	2.00	0.00
EECE	E44	571	Industrial and Environmental Catalysis	3.00	3.00
EECE	E44	572	Advanced Transport Phenomena	3.00	3.00
EECE	E44	574	Electrochemical Engineering	3.00	0.00
EECE	E44	576	Chemical Kinetics and Catalysis	3.00	3.00
EECE	E44	590	Energy and Environmental Economic Decision-Making	1.50	0.00
EECE	E44	591	Energy and Buildings	3.00	0.00
EECE	E44	593	Energy and Environment	3.00	0.00
EECE	E44	595	Principles and Methods of Micro and Nanofabrication	3.00	3.00
EECE	E44	597	EECE Project Management	3.00	0.0

E81 Courses (sorted by "Course Number" below)

Department	Department Number	Course Number	Title	Course Units	Topics Units (TU)
CSE	E81	104	Web Development	3.0	3.00
CSE	E81	131	Computer Science I	3.0	3.00
CSE	E81	131R	Seminar: Computer Science I	1.0	0.00
CSE	E81	132	Computer Science II	3.0	3.00
CSE	E81	141	The Digital Society	3.0	0.00
CSE	E81	200	Engineering and Scientific Computing	3.0	2.00
CSE	E81	204A	Web Development	3.0	3.00
CSE	E81	217A	Introduction to Data Science	3.0	3.00
CSE	E81	222S	Internet of Things	3.0	3.00
CSE	E81	231S	Introduction to Parallel and Concurrent Programming	3.0	3.00
CSE	E81	232	Programming Skills Workshop	1.0	0.00
CSE	E81	240	Logic and Discrete Mathematics	3.0	3.00
CSE	E81	240E	Discrete Math Seminar	3.0	3.00
CSE	E81	241	Algorithms and Data Structures	3.0	3.00
CSE	E81	245A	Fair Division in Theory and Practice	3.0	2.00
CSE	E81	247	Data Structures and Algorithms	3.0	3.00
CSE	E81	260M	Introduction to Digital Logic and Computer Design	3.0	3.00
CSE	E81	311A	Introduction to Intelligent Agents Using Science Fiction	3.0	3.00
CSE	E81	316A	Social Network Analysis	3.0	3.00
CSE	E81	330S	Rapid Prototype Development and Creative Programming	3.0	3.00
CSE	E81	332S	Object-Oriented Software Development Laboratory	3.0	3.00
CSE	E81	341T	Parallel and Sequential Algorithms	3.0	3.00
CSE	E81	347	Analysis of Algorithms	3.0	3.00
CSE	E81	357A	Introduction to Visualization	3.0	3.00
CSE	E81	361S	Introduction to Systems Software	3.0	3.00
CSE	E81	362M	Computer Architecture	3.0	3.00
CSE	E81	365S	Elements of Computing Systems	3.0	3.00
CSE	E81	400	Independent Study	3.0	0.00
CSE	E81	400E	Independent Study	3.0	0.00
CSE	E81	411A	AI and Society	3.0	0.00
CSE	E81	416A	Analysis of Network Data	3.0	3.00
CSE	E81	417T	Introduction to Machine Learning	3.0	3.00
CSE	E81	422S	Operating Systems Organization	3.0	3.00
CSE	E81	425S	Programming Systems and Languages	3.0	3.00
CSE	E81	427S	Cloud Computing with Big Data Applications	3.0	3.00
CSE	E81	431S	Translation of Computer Languages	3.0	3.00
CSE	E81	433S	Secure Software Engineering	3.0	3.00
CSE	E81	437R	Technical Interviewing	2.0	0.00
CSE	E81	437S	Software Engineering Workshop	3.0	3.00
CSE	E81	438S	Mobile Application Development	3.0	3.00
CSE	E81	441T	Advanced Algorithms	3.0	3.00
CSE	E81	450A	Video Game Programming I	3.0	3.00
CSE	E81	452A	Computer Graphics	3.0	3.00
CSE	E81	457A	Introduction to Visualization	3.0	3.00
CSE	E81	460T	Switching Theory	3.0	3.00
CSE	E81	462M	Computer Systems Design	3.0	3.00
CSE	E81	463M	Digital Integrated Circuit Design and Architecture	3.0	3.00
CSE	E81	465M	Digital Systems Laboratory	3.0	3.00
CSE	E81	467S	Embedded Computing Systems	3.0	3.00
CSE	E81	468T	Introduction to Quantum Computing	3.0	0.00
CSE	E81	469S	Security of the Internet of Things and Embedded System Security	3.0	3.00
CSE	E81	473S	Introduction to Computer Networks	3.0	3.00
CSE	E81	483M	Introduction to Electronic Instrumentation Design	3.0	3.00
CSE	E81	497	Senior Project I	3.0	0.00
CSE	E81	498	Senior Project II	3.0	0.00
CSE	E81	499	Undergraduate Honors Thesis	3.0	0.00
CSE	E81	500	Independent Study	3.0	0.00
CSE	E81	501N	Programming Concepts and Practice	3.0	3.00
CSE	E81	502N	Fundamentals of Computer Science	3.0	3.00
CSE	E81	503S	Rapid Prototype Development and Creative Programming	3.0	3.00
CSE	E81	504N	Object-Oriented Software Development Laboratory	3.0	3.00
CSE	E81	505A	Data Security	3.0	0.00
CSE	E81	506M	Principle and Methods of Micro- and Nanofabrication	3.0	3.00
CSE	E81	507A	Technology Entrepreneurship	3.0	0.00
CSE	E81	509A	Digital Image Processing	3.0	0.00
CSE	E81	511A	Introduction to Artificial Intelligence	3.0	0.00
CSE	E81	512A	Statistical Computing for Scientific Research	3.0	0.00
CSE	E81	514A	Data Mining	3.0	3.00

CSE	E81	515T	Bayesian Methods in Machine Learning	3.0	3.00
CSE	E81	516A	Multi-Agent Systems	3.0	3.00
CSE	E81	517A	Machine Learning	3.0	2.00
CSE	E81	518A	Crowdsourcing and Human Computation	3.0	3.00
CSE	E81	519T	Advanced Machine Learning	3.0	3.00
CSE	E81	520S	Real-Time Systems	3.0	3.00
CSE	E81	521S	Wireless Sensor Networks	3.0	3.00
CSE	E81	522S	Advanced Operating Systems	3.0	3.00
CSE	E81	523S	Systems Security	3.0	3.00
CSE	E81	530A	Database Management Systems	3.0	0.00
CSE	E81	530S	Database Management Systems	3.0	0.00
CSE	E81	531S	Theory of Compiling and Language Translation	3.0	2.50
CSE	E81	532S	Advanced Multi-Paradigm Software Development	3.0	3.00
CSE	E81	536S	Distributed System Design: Models and Languages	3.0	3.00
CSE	E81	538T	Modeling and Performance Evaluation of Interconnected Computer Systems	3.0	3.00
CSE	E81	539S	Concepts in Multicore Computing	3.0	3.00
CSE	E81	541T	Advanced Algorithms	3.0	3.00
CSE	E81	542T	Advanced Data Structures and Algorithms	3.0	0.00
CSE	E81	543S	Advanced Secure Software Engineering	3.0	3.00
CSE	E81	543T	Algorithms for Nonlinear Optimization	3.0	0.00
CSE	E81	544T	Special Topics in Computer Science Theory	3.0	0.00
CSE	E81	546T	Computational Geometry	3.0	0.00
CSE	E81	547T	Introduction to Formal Languages and Automata	3.0	0.00
CSE	E81	549T	Theory of Parallel Systems	3.0	3.00
CSE	E81	550S	Mobile Robotics	3.0	3.00
CSE	E81	553S	Advanced Mobile Robotics	3.0	3.00
CSE	E81	554A	Geometric Computing for Biomedicine	3.0	3.00
CSE	E81	555A	Computational Photography	3.0	3.00
CSE	E81	556A	Human-Computer Interaction Methods	3.0	3.00
CSE	E81	557A	Advanced Visualization	3.0	3.00
CSE	E81	559A	Computer Vision	3.0	3.00
CSE	E81	560M	Computer Systems Architecture I	3.0	3.00
CSE	E81	561M	Computer Systems Architecture II	3.0	3.00
CSE	E81	562M	Digital System Verification, Testing, and Reliability	3.0	0.00
CSE	E81	563M	Digital Integrated Circuit Design and Architecture	3.0	3.00
CSE	E81	565M	Acceleration of Algorithms in Reconfigurable Logic	3.0	3.00
CSE	E81	566S	High Performance Computer Systems	3.0	3.00
CSE	E81	567M	Computer Systems Analysis	3.0	3.00
CSE	E81	568M	Imaging Sensors	3.0	0.00
CSE	E81	569M	Parallel Architectures and Algorithms	3.0	3.00
CSE	E81	569S	Advanced IoT, Real-Time, and Embedded Systems Security	3.0	3.00
CSE	E81	570S	Recent Advances in Networking	3.0	3.00
CSE	E81	571S	Network Security	3.0	3.00
CSE	E81	573S	Protocols for Computer Networks	3.0	3.00
CSE	E81	574S	Wireless and Mobile Networking	3.0	3.00
CSE	E81	581T	Approximation Algorithms	3.0	3.00
CSE	E81	582T	Complexity Theory	3.0	0.00
CSE	E81	584A	Algorithms for Biosequence Comparison	3.0	3.00
CSE	E81	585T	Sparse Modeling for Imaging and Vision	3.0	0.00
CSE	E81	586A	Analysis of Imaging Data	3.0	0.00
CSE	E81	587A	Algorithms for Computational Biology	3.0	3.00
CSE	E81	591	Introduction to Graduate Study in CSE	3.0	0.00
CSE	E81	596	Seminar in Imaging Science & Engineering	0.0	0.00
CSE	E81	597	Practicum: Imaging Science & Engineering	1.0	1.00
CSE	E81	598	Masters Project	6.0	0.00
CSE	E81	599	Masters Research	6.0	0.00
CSE	E81	637S	Software Security	3.0	0.00
CSE	E81	659A	Advances in Computer Vision	3.0	0.00
CSE	E81	699	Doctoral Research	6.0	0.00
CSE	E81	7001	Research Seminar on Computer Science Pedagogy	1.0	0.00
CSE	E81	710x	Research Seminar on Artificial Intelligence	1.0	0.00
CSE	E81	711x	Research Seminar on Representation and Reasoning	1.0	0.00
CSE	E81	720x	Research Seminar on Programming Languages	1.0	0.00
CSE	E81	721x	Research Seminar on Software Systems	1.0	0.00
CSE	E81	722x	Research Seminar on Visual Programming	1.0	0.00
CSE	E81	730x	Research Seminar on Distributed System Design	1.0	0.00
CSE	E81	740x	Research Seminar on Algorithms	1.0	0.00
CSE	E81	741x	Research Seminar on Computational Logic	1.0	0.00
CSE	E81	750x	Research Seminar on Graphics, Robotics and Vision	1.0	0.00
CSE	E81	751x	Research Seminar on Digital Image Processing	1.0	0.00
CSE	E81	760x	Research Seminar on Computer Systems Architecture	1.0	0.00
CSE	E81	770x	Research Seminar on Networking	1.0	0.00
CSE	E81	772x	Research Seminar on Reconfigurable Hardware	1.0	0.00
CSE	E81	780x	Research Seminar on Computational Molecular Biology	1.0	0.00
CSE	E81	887	Masters Candidate	1.0	0.00
CSE	E81	888	Doctoral Candidate	1.0	0.00

E35 Courses (sorted by "Course Number" below)

Department	Department Number	Course Number	Title	Course Units	Topics Units (TU)
ESE	E35	100	Independent Study	0.0	0.00
ESE	E35	101	Introduction to Engineering Tools: Matlab and Simulink	1.0	1.00
ESE	E35	103	Introduction to Electrical Engineering	1.0	1.00
ESE	E35	141	Introductory Robotics	1.0	1.00
ESE	E35	151	Introduction to Systems Science and Engineering	2.0	2.00
ESE	E35	205	Introduction to Engineering Design	3.0	3.00
ESE	E35	230	Introduction to Electrical Networks	4.0	4.00
ESE	E35	231	Electrical & Electronic Circuits Laboratory	1.0	1.00

ESE	E35	232	Introduction to Electronic Circuits	3.0	3.00
ESE	E35	251	Introduction to Systems Science and Engineering	2.0	2.00
ESE	E35	260	Introduction to Digital Logic and Computer Design	3.0	3.00
ESE	E35	297	Introduction to ESE Undergraduate Research Projects	3.0	0.00
ESE	E35	318	Engineering Mathematics A	3.0	0.00
ESE	E35	319	Engineering Mathematics B	3.0	0.00
ESE	E35	326	Probability and Statistics for Engineering	3.0	1.00
ESE	E35	330	Engineering Electromagnetics Principles	3.0	3.00
ESE	E35	331	Electronics Laboratory	3.0	3.00
ESE	E35	332	Power, Energy and Polyphase Circuits	3.0	3.00
ESE	E35	336	Principles of Electronic Devices	3.0	3.00
ESE	E35	337	Electronic Devices and Circuits	3.0	3.00
ESE	E35	351	Signals and Systems	3.0	3.00
ESE	E35	352	Introduction to Signals and Systems Lab	1.0	0.00
ESE	E35	362	Computer Architecture	3.0	3.00
ESE	E35	400	Independent Study	0.0	0.00
ESE	E35	403	Operations Research	3.0	3.00
ESE	E35	404	Applied Operations Research	3.0	3.00
ESE	E35	405	Reliability and Quality Control	3.0	3.00
ESE	E35	407	Analysis and Simulation of Discrete Event Systems	3.0	3.00
ESE	E35	408	A System Dynamics Approach to Designing Sustainable Policies and Programs	3.0	2.00
ESE	E35	415	Optimization	3.0	3.00
ESE	E35	425	Random Processes and Kalman Filtering	3.0	3.00
ESE	E35	427	Financial Mathematics	3.0	3.00
ESE	E35	429	Basic Principles of Quantum Optics and Quantum Information	3.0	3.00
ESE	E35	431	Introduction to Quantum Electronics	3.0	3.00
ESE	E35	433	RF and Microwave Technology for Wireless Systems	3.0	3.00
ESE	E35	434	Solid-State Power Circuits and Applications	3.0	3.00
ESE	E35	435	Electrical Energy Laboratory	3.0	3.00
ESE	E35	437	Sustainable Energy Systems	3.0	3.00
ESE	E35	438	Applied Optics	3.0	3.00
ESE	E35	439	Introduction to Quantum Communications	3.0	3.00
ESE	E35	441	Control Systems	3.0	3.00
ESE	E35	444	Sensors and Actuators	3.0	3.00
ESE	E35	446	Robotics: Dynamics and Control	3.0	3.00
ESE	E35	447	Robotics Laboratory	3.0	3.00
ESE	E35	448	Systems Engineering Laboratory	3.0	3.00
ESE	E35	449	Digital Process Control Laboratory	3.0	3.00
ESE	E35	455	Quantitative Methods for Systems Biology	3.0	3.00
ESE	E35	460	Switching Theory	3.0	3.00
ESE	E35	461	Design Automation for Integrated Systems	3.0	3.00
ESE	E35	462	Computer Systems Design	3.0	3.00
ESE	E35	463	Digital Integrated Circuit Design and Architecture	3.0	3.00
ESE	E35	465	Digital Systems Laboratory	3.0	3.00
ESE	E35	467	Embedded Computing Systems	3.0	3.00
ESE	E35	471	Communication Theory and Systems	3.0	3.00
ESE	E35	474	Introduction to Wireless Sensor Networks	3.0	3.00
ESE	E35	482	Digital Signal Processing	3.0	3.00
ESE	E35	484	Modern Optical Imaging	3.0	3.00
ESE	E35	488	Signals and Systems Laboratory	3.0	3.00
ESE	E35	497	Undergraduate Research	3.0	0.00
ESE	E35	498	Electrical Engineering Design Projects	3.0	3.00
ESE	E35	499	Capstone Design Project	3.0	3.00
ESE	E35	500	Independent Study	0.0	0.00
ESE	E35	501	Mathematics of Modern Engineering I	3.0	3.00
ESE	E35	502	Mathematics of Modern Engineering II	3.0	3.00
ESE	E35	513	Convex Optimization and Duality Theory	3.0	0.00
ESE	E35	515	Nonlinear Optimization	3.0	3.00
ESE	E35	516	Optimization in Function Space	3.0	0.00
ESE	E35	517	Partial Differential Equations	3.0	3.00
ESE	E35	518	Optimization Methods in Control	3.0	3.00
ESE	E35	519	Convex Optimization	3.0	0.00
ESE	E35	520	Probability and Stochastic Processes	3.0	3.00
ESE	E35	523	Information Theory	3.0	3.00
ESE	E35	524	Detection and Estimation Theory	3.0	3.00
ESE	E35	526	Network Science	3.0	0.00
ESE	E35	529	Special Topics in Information Theory and Applied Probability	3.0	0.00
ESE	E35	531	Nano and Micro Photonics	3.0	3.00
ESE	E35	532	Introduction to Nano-Photonic Devices	3.0	3.00
ESE	E35	533	RF and Microwave Technology for Wireless Systems	3.0	3.00
ESE	E35	534	Special Topics in Advanced Electrodynamics	3.0	3.00
ESE	E35	536	Introduction to Quantum Optics	3.0	3.00
ESE	E35	537	Advanced Electromagnetic Theory	3.0	3.00
ESE	E35	538A	Applied Optics	3.0	3.00
ESE	E35	543	Control Systems Design by State Space Methods	3.0	3.00
ESE	E35	544	Optimization and Optimal Control	3.0	3.00
ESE	E35	545	Visionics, Dynamics and Control	3.0	3.00
ESE	E35	545	Stochastic Control	3.0	3.00
ESE	E35	546	Dynamics & Control in Neuroscience and Brain Medicine	3.0	3.00
ESE	E35	547	Robust and Adaptive Control	3.0	3.00
ESE	E35	548	Instruments and Components for Automatic Control	3.0	0.00
ESE	E35	551	Linear Dynamic Systems I	3.0	3.00
ESE	E35	552	Linear Dynamic Systems II	3.0	3.00
ESE	E35	553	Nonlinear Dynamic Systems	3.0	1.00
ESE	E35	554	Advanced Nonlinear Dynamic Systems	3.0	0.00
ESE	E35	557	Hybrid Dynamic Systems	3.0	3.00
ESE	E35	559	Special Topics in Systems and Control: Control of High-Dimensional Complex Systems	3.0	3.00

ESE	E35	560	Computer Systems Architecture I	3.0	3.00
ESE	E35	561	Computer Systems Architecture II	3.0	3.00
ESE	E35	562	Analog Integrated Circuits	3.0	0.00
ESE	E35	565	Acceleration of Algorithms in Reconfigurable Logic	3.0	3.00
ESE	E35	566A	Modern System-on-Chip Design	3.0	3.00
ESE	E35	567	Computer Systems Analysis	3.0	3.00
ESE	E35	568	Imaging Sensors	3.0	0.00
ESE	E35	569	Parallel Architectures and Algorithms	3.0	3.00
ESE	E35	570	Coding Theory	3.0	3.00
ESE	E35	571	Transmission Systems and Multiplexing	3.0	3.00
ESE	E35	572	Signaling and Control in Communication Networks	3.0	3.00
ESE	E35	575	Fiber-Optic Communications	3.0	3.00
ESE	E35	582	Fundamentals and Applications of Modern Optical Imaging	3.0	3.00
ESE	E35	585A	Sparse Modeling for Imaging and Vision	3.0	3.00
ESE	E35	588	Quantitative Image Processing	3.0	3.00
ESE	E35	589	Biological Imaging Technology	3.0	3.00
ESE	E35	590	Electrical & Systems Engineering Graduate Seminar	0.0	0.00
ESE	E35	591	Special Topics: Biomedical Topics I: Principles	3.0	3.00
ESE	E35	592	Special Topics: Biomedical Optics II: Imaging	3.0	0.00
ESE	E35	596	Seminar in Imaging Science and Engineering	1.0	0.00
ESE	E35	597	Practicum in Imaging Science and Engineering	1.0	1.00
ESE	E35	599	Masters Research	0.0	0.00
ESE	E35	600	Doctoral Research	0.0	0.00

E37 Courses (sorted by "Course Number" below)

Department	Department Number	Course Number	Title	Course Units	Topics Units (TU)
MEMS	E37	1001	Machine Shop Practicum	1.0	1.0
MEMS	E37	1003	Mechanical Engineering Design and Build	1.0	0.0
MEMS	E37	101	Introduction to Mechanical Engineering and Mechanical Design	2.0	2.0
MEMS	E37	102	Computer Aided Design - Sketchup	1.0	1.0
MEMS	E37	103	Computer Aided Design - AutoCAD	1.0	1.0
MEMS	E37	201	Numerical Methods and Matrix Algebra	3.0	3.0
MEMS	E37	202	Computer Aided Design	2.0	2.0
MEMS	E37	203	Advanced CAD	3.0	3.0
MEMS	E37	205	Mechanics and Materials Science Laboratory	2.0	2.0
MEMS	E37	253	Statics and Mechanics of Materials	3.0	3.0
MEMS	E37	255	Dynamics	3.0	3.0
MEMS	E37	301	Thermodynamics	3.0	3.0
MEMS	E37	305	Fluid Mechanics and Heat Transfer Laboratory	2.0	0.0
MEMS	E37	3110	Machine Elements	3.0	3.0
MEMS	E37	3410	Fluid Mechanics	3.0	3.0
MEMS	E37	3411	Fluid Mechanics Laboratory	1.0	1.0
MEMS	E37	3420	Heat Transfer	3.0	3.0
MEMS	E37	350	Solid Mechanics	3.0	3.0
MEMS	E37	3601	Materials Engineering	3.0	3.0
MEMS	E37	3610	Materials Science	3.0	3.0
MEMS	E37	400	Independent Study	0.0	0.0
MEMS	E37	4001	Fundamentals of Engineering Review	0.0	0.00
MEMS	E37	405	Vibrations and Machine Elements Laboratory	2.0	2.0
MEMS	E37	4101	Manufacturing Processes	3.0	3.0
MEMS	E37	411	Mechanical Engineering Design Project	3.0	3.0
MEMS	E37	412	Design of Thermal Systems	3.0	3.0
MEMS	E37	421	Analysis and Design of Modern Structures I	3.0	3.0
MEMS	E37	422	Analysis & Design of Modern Structures II	3.0	3.0
MEMS	E37	423	Behavior and Design of Structural Systems	4.0	4.0
MEMS	E37	424	Introduction to Finite Element Methods in Structural Analysis	3.0	3.0
MEMS	E37	4301	Modeling, Simulation and Control	3.0	3.0
MEMS	E37	4302	Aircraft Flight Dynamics and Control	3.0	3.0
MEMS	E37	4310	Dynamics and Vibrations	3.0	3.0
MEMS	E37	4401	Combustion and Environment	3.0	3.0
MEMS	E37	463	Nanotechnology Concepts and Applications	3.0	0.0
MEMS	E37	500	Independent Study	0.0	0.0
MEMS	E37	5001	Optimization Methods in Engineering	3.0	3.0
MEMS	E37	501	Graduate Seminar	0.0	0.0
MEMS	E37	5101	Analysis and Design of Fluid-Power Systems	3.0	3.0
MEMS	E37	5102	Materials Selection in Design	3.0	3.0
MEMS	E37	5104	CAE-Driven Mechanical Design	3.0	3.0
MEMS	E37	5301	Nonlinear Vibrations	3.0	3.0
MEMS	E37	5302	Theory of Vibrations	3.0	3.0
MEMS	E37	5401	General Thermodynamics	3.0	3.0
MEMS	E37	5402	Radiation Heat Transfer	3.0	3.0
MEMS	E37	5403	Conduction and Convection Heat Transfer	3.0	3.0
MEMS	E37	5404	Combustion Phenomena	3.0	3.0
MEMS	E37	5410	Fluid Dynamics I	3.0	3.0
MEMS	E37	5411	Fluid Dynamics II	3.0	3.0
MEMS	E37	5412	Computational Fluid Dynamics	3.0	3.0
MEMS	E37	5413	Advanced Computational Fluid Dynamics	3.0	3.0
MEMS	E37	5414	Aeroelasticity & Flow-Induced Vibrations	3.0	0.0
MEMS	E37	5416	Turbulence	3.0	3.0
MEMS	E37	5420	HVAC Analysis and Design I	3.0	3.0
MEMS	E37	5421	HVAC Analysis and Design II	3.0	3.0
MEMS	E37	5422	Solar Energy Thermal Processes	3.0	3.0
MEMS	E37	5423	Sustainable Environmental Building Systems	3.0	3.0
MEMS	E37	5424	Thermo-Fluid Modeling of Renewable Energy Systems	3.0	3.0
MEMS	E37	5425	Thermal Management of Electronics	3.0	3.0
MEMS	E37	5500	Elasticity	3.0	3.0
MEMS	E37	5501	Mechanics of Continua	3.0	3.0

MEMS	E37	5502	Plates and Shells	3.0	3.0
MEMS	E37	5504	Fracture Mechanics	3.0	3.0
MEMS	E37	5505	Seminar in Advanced Mechanics of Materials	1.0	1.0
MEMS	E37	5506	Experimental Methods in Solid Mechanics	3.0	3.0
MEMS	E37	5507	Fatigue and Fracture Analysis	3.0	3.0
MEMS	E37	5510	Finite Element Analysis	3.0	3.0
MEMS	E37	5515	Numerical Simulation in Solid Mechanics I	3.0	0.0
MEMS	E37	5516	Numerical Simulation in Solid Mechanics II	3.0	0.0
MEMS	E37	5520	Advanced Analytical Mechanics	3.0	3.0
MEMS	E37	5560	Interfaces and Attachments in Natural and Engineered Structures	3.0	3.0
MEMS	E37	5561	Mechanics of Cell Motility	3.0	0.0
MEMS	E37	5562	Cardiovascular Mechanics	3.0	0.0
MEMS	E37	5564	Orthopaedic Biomechanics-Cartilage/Tendon	3.0	3.0
MEMS	E37	5565	Mechanobiology of Cells and Matrices	3.0	3.0
MEMS	E37	5566	Engineering Mechanobiology	3.0	3.0
MEMS	E37	5601	Mechanical Behavior of Materials	3.0	3.0
MEMS	E37	5602	Non-metallics	3.0	3.0
MEMS	E37	5603	Materials Characterization Techniques I	3.0	3.0
MEMS	E37	5604	Materials Characterization Techniques II	3.0	3.0
MEMS	E37	5605	Mechanical Behavior of Composites	3.0	3.0
MEMS	E37	5606	Soft Nanomaterials	3.0	3.0
MEMS	E37	5607	Introduction to Polymer Blends and Composites	3.0	3.0
MEMS	E37	5608	Introduction to Polymer Science and Engineering	3.0	3.0
MEMS	E37	5609	Electronic Materials Processing	3.0	3.0
MEMS	E37	5610	Quantitative Materials Science & Engineering	3.0	3.0
MEMS	E37	5611	Principles and Methods of Micro and Nanofabrication	3.0	3.0
MEMS	E37	5612	Atomistic Modeling of Materials	3.0	3.0
MEMS	E37	5613	Biomaterials Processing	3.0	3.0
MEMS	E37	5614	Polymeric Materials Synthesis and Modification	3.0	3.0
MEMS	E37	5700	Aerodynamics	3.0	3.0
MEMS	E37	5701	Aerospace Propulsion	3.0	3.0
MEMS	E37	5703	Analysis of Rotary-Wing Systems	3.0	3.0
MEMS	E37	5704	Aircraft Structures	3.0	0.0
MEMS	E37	5705	Wind Energy Systems	3.0	3.0
MEMS	E37	5706	Aircraft Performance	3.0	3.0
MEMS	E37	5801	Micro-Electro-Mechanical Systems I	3.0	3.0
MEMS	E37	5802	Micro-Electro-Mechanical Systems II	3.0	3.0
MEMS	E37	5804	Engineering Project Management	3.0	3.0
MEMS	E37	5912	Biomechanics Journal Club	1.0	1.0
MEMS	E37	597	MEMS Research Rotation	3.0	0.0
MEMS	E37	598	Energy Analysis and Design Project	6.0	0.0
MEMS	E37	599	Masters Research	6.0	0.0
MEMS	E37	600	Doctoral Research	0.0	0.0
MEMS	E37	883	Masters Continuing Student Status	0.0	0.0
MEMS	E37	884	Doctoral Continuing Student Status	0.0	0.0
MEMS	E37	885	Masters Nonresident	0.0	0.0
MEMS	E37	886	Doctoral Nonresident	0.0	0.0

Physics Courses (sorted by "Course Number" below)

Department	Department Number	Course Number	Title	Course Units	Topics Units (TU)
Physics	L31	314	Physics of the Heart	3.0	3.00
Physics	L31	321	Electronics Laboratory	3.0	3.00
Physics	L31	322	Physical Measurement Laboratory	3.0	1.00
Physics	L31	350	Physics of the Brain	3.0	3.00
Physics	L31	351	Introduction to Biomedical Physics	3.0	3.00
Physics	L31	355	Physics of Vision	3.0	3.00
Physics	L31	421	Electricity & Magnetism	3.0	3.00
Physics	L31	422	Electricity & Magnetism II	3.0	3.00
Physics	L31	450	Physics of the Brain	3.0	3.00
Physics	L31	471	Quantum Mechanics	3.0	3.00

Business Courses (sorted by "Course Number" below)

Department	Department Number	Course Number	Title	Course Units	Topics Units (TU)
OSCM	B58	400C	Analytics for Operational Excellence	3.0	3.0