CIS UNRESTRICTED TECHNICAL ELECTIVE (EUCU)

Code	Title	Course Units
AMCS 5461	Advanced Applied Probability	1
BCHE 2280	Physical Models of Biological Systems	1
BE 2000	Introduction to Biomechanics	1
BE 2200	Biomaterials	1
BE 2700	Bioengineering Laboratory Principles	1
BE 3010	Bioengineering Signals and Systems	1
BE 3300	Self-Assembly of Soft Materials	1
BE 4700	Medical Devices	1
BE 4800	Introduction to Biomedical Imaging	1
BE 5210	Brain-Computer Interfaces	1
BE 5300	Theoretical and Computational Neuroscience	1
BE 5690	Systems Biology of Cell Signaling Behavior	1
BEPP 2500	Managerial Economics	1
BEPP 2800	Applied Data Analysis	1
BEPP 9040	Experimental Economics	1
BIOL 2210	Molecular Biology and Genetics	1
BIOL 2510	Statistics for Biologists	1
BIOL 4231	Genome Science and Genomic Medicine	1
BIOL 4536	Introduction to Computational Biology & Biological Modeling	1
BIOL 5536	Fundamentals of Computational Biology	1
BIOL 5571	Topics in Computational Biology	1
CAMB 4310	Genome Science and Genomic Medicine	1
CBE 2300	Material and Energy Balances of Chemical Processes	1
CBE 2310	Thermodynamics of Fluids	1
CBE 3500	Fluid Mechanics	1
CBE 3600	Chemical Process Control	1
CBE 3750	Engineering and the Environment	1
CBE 4215	Energy and Sustainability: Science, Engineering and Technology	1
CBE 4790	Biotechnology and Biochemical Engineering	1
CBE 5215	Energy and Sustainability: Science, Engineering and Technology	1
CHEM 2210	Physical Chemistry I	1
CHEM 2220	Physical Chemistry II	1
CHEM 2410	Principles of Organic Chemistry I	1
CHEM 2411	Principles of Organic Chemistry I with Laboratory	1.5
CHEM 2420	Principles of Organic Chemistry II	1
CIS 2330	Introduction to Blockchain	1
CIS 2450	Big Data Analytics	1
CIS 3500	Software Design/Engineering	1
CIS 3990	Special Topics	0-1
CIS 4120	Introduction to Human Computer Interaction	1
CIS 4190	Applied Machine Learning	1
CIS 4210	Artificial Intelligence	1
CIS 4270	Trustworthy Machine Learning	1
CIS 4360	Introduction to Computational Biology & Biological Modeling	1
CIS 4410	Embedded Software for Life-Critical Applications	1
CIS 4500	Database and Information Systems	1
CIS 4510	Computer and Network Security	1
CIS 4520	Advanced Programming	1
CIS 4521	Compilers and Interpreters	1
CIS 4550	Internet and Web Systems	1
CIS 4600	Interactive Computer Graphics	1
CIS 4610	Advanced Rendering	1
CIS 5000	Software Foundations	1
CIS 5020	Analysis of Algorithms	1
CIS 5030	Algorithms for Big Data	1
CIS 5050	Software Systems	1
CIS 5200	Machine Learning	1
CIS 5210	Artificial Intelligence	1
CIS 5220	Deep Learning for Data Science	1
CIS 5270	Trustworthy Machine Learning	1
CIS 5300	Natural Language Processing	1
CIS 5360	Fundamentals of Computational Biology	1
CIS 5450	Big Data Analytics	1
CIS 5490	Wireless Communications for Mobile Networks and Internet of Things	1
CIS 5500	Database and Information Systems	1
CIS 5510	Computer and Network Security	1
CIS 5520	Advanced Programming	1
CIS 5521	Compilers and Interpreters	1
CIS 5530	Networked Systems	1
CIS 5550	Internet and Web Systems	1
CIS 5560	Cryptography	1
CIS 5590	Programming and Problem Solving	1
CIS 5650	GPU Programming and Architecture	1
CIS 5660	Procedural Computer Graphics	1
CIS 5800	Machine Perception	1
CIS 5810	Computer Vision & Computational Photography	1
CIS 6250	Theory of Machine Learning	1
CIS 6770	Advanced Topics in Algorithms and Complexity	1
CIS 7000	Special Topics	1
COMM 4590	Social Networks and the Spread of Behavior	1
DSGN 2570	User Experience (UX) and User Interface (UI) Design	1
EAS 5070	Intellectual Property and Business Law for Engineers	1
EAS 5450	Engineering Entrepreneurship I	1
EAS 5460	Engineering Entrepreneurship II	1

EAS 5470	Engineering Product Management from Theory to Practice	1
EAS 5490	Engineering Entrepreneurship Lab	1
ECON 2100	Intermediate Microeconomics	1
ECON 2200	Intermediate Macroeconomics	1
ECON 2300	Statistics for Economists	1
ECON 2310	Econometric Methods and Models	1
ECON 4100	Game Theory	1
ECON 4130	Market Design	1
ECON 4210	Numerical Methods for Macroeconomists	1
ECON 4230	Macro Perspectives on Challenges for Economic Policy	1
ECON 4240	Money and Banking	1
ECON 4430	Labor Economics	1
ECON 4450	Industrial Organization	1
ECON 4460	Health Economics	1
ECON 4510	International Trade	1
EESC 4630	Hydrology	1
ENGR 2120	Concepts in Micro- and Nanotechnology	1
ENGR 3440	Answering Questions with Data, for Everyone	1
ENGR 4215	Energy and Sustainability: Science, Engineering and Technology	1
ENGR 4500	Modern Biotechnology for Engineers	1
ENGR 5215	Energy and Sustainability: Science, Engineering and Technology	1
ENM 3750	Biological Data Science I - Fundamentals of Biostatistics	1
ESE 2000	Artificial Intelligence Lab: Data, Systems, and Decisions	1
ESE 2040	Decision Models	1
ESE 2100	Introduction to Dynamic Systems	1
ESE 2150	Electrical Circuits and Systems	1.5
ESE 2180	Electronic, Photonic, and Electromechanical Devices	1.5
ESE 2240	Signal and Information Processing	1.5
ESE 2900	Introduction to Electrical and Systems Engineering Research Methodology	0.5
ESE 2910	Introduction to Electrical and Systems Engineering Research and Design	1
ESE 2920	Invention Studio	0.5
ESE 3030	Stochastic Systems Analysis and Simulation	1
ESE 3050	Foundations of Data Science	1
ESE 3060	Deep Learning: A Hands-on Introduction	1
ESE 3190	Fundamentals of Solid-State Circuits	1.5
ESE 3250	Fourier Analysis and Applications in Engineering, Mathematics, and the Sciences	1
ESE 3500	Embedded Systems/Microcontroller Laboratory	1.5
ESE 3600	TinyML: Tiny Machine Learning for Embedded Systems	1
ESE 3700	Circuit-Level Modeling, Design, and Optimization for Digital Systems	1

ESE 4000	Engineering Economics	1
ESE 4070	Introduction to Networks and Protocols	1
ESE 4210	Control For Autonomous Robots	1.5
ESE 4380	Machine Learning for Time-Series Data	1
ESE 5090	Quantum Circuits and Systems	1
ESE 5140	Graph Neural Networks	1
ESE 5300	Elements of Probability Theory	1
ESE 5390	Hardware/Software Co-Design for Machine Learning	1
ESE 5430	Human Systems Engineering	1
ESE 6050	Modern Convex Optimization	1
ESE 6450	Deep Generative Models	1
ESE 6500	Learning in Robotics	1
ESE 6740	Information Theory	1
FNCE 2090	Real Estate Investment: Analysis and Financing	1
FNCE 2310	Global Valuation and Risk Analysis	1
FNCE 7170	Financial Derivatives	1
FNCE 9110	Financial Economics	1
GCB 5360	Fundamentals of Computational Biology	1
IPD 5110	How to Make Things: Production Prototyping Studio	1
IPD 5150	Product Design	1
IPD 5450	Engineering Entrepreneurship I	1
LAW 5770	Internet Law	3
LGIC 2100	Discrete Mathematics I	1
LGIC 2200	Discrete Mathematics II	1
LGIC 3100	Logic and Computability 1	1
LGIC 3200	Logic and Computability 2	1
LGIC 4960	Topics in Mathematical Logic	1
LING 2300	Sound Structure of Language	1
LING 5150	Dynamics of Language	1
LING 5250	Computer Analysis and Modeling of Biological Signals and Systems	1
MATH 2020	Proving Things: Analysis	1
MATH 2030	Proving things: Algebra	1
MATH 2400	Calculus, Part III	1
MATH 2410	Calculus, Part IV	1
MATH 3120	Linear Algebra	1
MATH 3130	Computational Linear Algebra	1
MATH 3140	Advanced Linear Algebra	1
MATH 3200	Computer Methods in Mathematical Science I	1
MATH 3400	Discrete Mathematics I	1
MATH 3410	Discrete Mathematics II	1
MATH 3500	Number Theory	1
MATH 3600	Advanced Calculus	1
MATH 3610	Advanced Calculus	1
MATH 3700	Algebra	1
MATH 3710	Algebra	1
MATH 4100	Complex Analysis	1
MATH 4200	Ordinary Differential Equations	1
MATH 4250	Partial Differential Equations	1

MATH 4320	Game Theory	1
MATH 4600	Topology	1
MATH 4650	Differential Geometry	1
MATH 5020	Abstract Algebra	1
MATH 5030	Abstract Algebra	1
MATH 5080	Advanced Analysis	1
MATH 5090	Advanced Analysis	1
MATH 5460	Advanced Applied Probability	1
MATH 6020	Algebra	1
MEAM 2010	Machine Design and Manufacturing	1
MEAM 2020	Introduction to Thermal-Fluids Engineering	1
MEAM 2030	Thermodynamics I	1
MEAM 2100	Statics and Strength of Materials	1
MEAM 2110	Engineering Mechanics: Dynamics	1
MEAM 2200	Fundamentals of Materials Science and Engineering	1
MEAM 2470	Mechanical Engineering Laboratory I	.5
MEAM 2480	Mechanical Engineering Lab I	.5
MEAM 3020	Fluid Mechanics	1
MEAM 3210	Dynamic Systems and Control	1
MEAM 3330	Heat and Mass Transfer	1
MEAM 3470	Mechanical Engineering Design Laboratory	1
MEAM 3540	Mechanics of Solids	1
MEAM 4050	Mechanical Properties of Macro/Nanoscale Materials	1
MEAM 4150	Product Design	1
MEAM 4210	Control For Autonomous Robots	1.5
MEAM 5100	Design of Mechatronic Systems	1
MEAM 5200	Introduction to Robotics	1
MKTG 2120	Data and Analysis for Marketing Decisions	1
MKTG 2710	Models for Marketing Strategy	1
MKTG 4760	Applied Probability Models in Marketing	1
MKTG 7120	Data and Analysis for Marketing Decisions	0.5-1
MSE 2200	Fundamentals of Materials Science and Engineering	1
MSE 2600	Energetics of Macro and Nano-scale Materials	1
MSE 3300	Self-Assembly of Soft Materials	1
MSE 3600	Structure at the Nanoscale	1
MSE 3930	Materials Selection	1
MSE 4050	Mechanical Properties of Macro/Nanoscale Materials	1
NETS 2120	Scalable and Cloud Computing	1
NETS 2130	Crowdsourcing and Human Computation	1
NETS 3120	Theory of Networks	1
NETS 4120	Algorithmic Game Theory	1
NGG 5210	Brain-Computer Interfaces	1
NGG 5940	Theoretical and Computational Neuroscience	1
NRSC 5585	Theoretical and Computational Neuroscience	1
OIDD 2450	Analytics and the Digital Economy	1

OIDD 3190	Advanced Decision Systems: Evolutionary Computation	1
OIDD 4150	Product Design	1
OIDD 4690	Information Strategy and Economics	0.5-1
OIDD 4810	Convex Optimization for Statistics and Data Science	1
OIDD 5110	How to Make Things: Production Prototyping Studio	1
OIDD 5150	Product Design	1
OIDD 5250	Thinking with Models: Business Analytics for Energy and Sustainability	1
OIDD 6130	Online Business Models and the Information-Based Firm	0.5
OIDD 6530	Mathematical Modeling and its Application in Finance	0.5,1
OIDD 9040	Experimental Economics	1
OIDD 9150	Advanced Graph Theory	1
OIDD 9300	Stochastic Models	0.5
OIDD 9340	Dynamic Programming and Stochastic Models	0.5
OIDD 9500	Perspectives on Information Systems	1
PHIL 4720	Topics in Mathematical Logic	1
PHIL 4721	Logic and Computability 1	1
PHIL 4722	Logic and Computability 2	1
PHIL 4724	Logic: From Gödel to Gödel	1
PHIL 4770	Philosophy of Mathematics	1
PHYS 2260	Introduction to Computational Physics	1
PHYS 2280	Physical Models of Biological Systems	1
PHYS 3351	Analytical Mechanics	1
PHYS 3359	Data Analysis for the Natural Sciences II: Machine Learning	1
PHYS 3361	Electromagnetism I: Electricity and Potential Theory	1
PHYS 3362	Electromagnetism II: Magnetism, Maxwell's Equations, and Electromagnetic Waves	1
PHYS 3364	Laboratory Electronics	1
PHYS 4401	Thermodynamics and the Introduction to Statistical Mechanics and Kinetic Theory	1
PHYS 4411	Introduction to Quantum Mechanics I	1
PHYS 5585	Theoretical and Computational Neuroscience	1
PSCI 5800	Game Theory	1
PSYC 2377	Cognitive Development	1
PSYC 5390	Theoretical and Computational Neuroscience	1
REAL 2090	Real Estate Investment: Analysis and Financing	1
STAT 4310	Statistical Inference	1
STAT 4320	Mathematical Statistics	1
STAT 4330	Stochastic Processes	1
STAT 4350	Forecasting Methods for Management	1
STAT 4420	Introduction to Bayesian Data Analysis	1
STAT 4700	Data Analytics and Statistical Computing	1
STAT 4710	Modern Data Mining	1

STAT 4750	Sample Survey Design	1
STAT 4760	Applied Probability Models in Marketing	1
STAT 4810	Convex Optimization for Statistics and Data Science	1
STAT 4830	Numerical Optimization for Data Science and Machine Learning	1
STAT 5200	Applied Econometrics I	1
STAT 5330	Stochastic Processes	1
STAT 5350	Forecasting Methods for Management	1
STAT 5710	Modern Data Mining	1
STAT 9270	Bayesian Statistical Theory and Methods	1