

Regularly Offered ECE Graduate Courses by Concentration

Communication, Control, and Signal Processing

EECE 5576 Wireless Communication Systems 4 SH
EECE 5580 Classical Control Systems 4 SH
EECE 5610 Digital Control Systems 4 SH
EECE 5639 Computer Vision 4SH
EECE 5642 Data Visualization 4SH
EECE 5664 Biomedical Signal Processing 4SH
EECE 5666 Digital Signal Processing 4SH
EECE 5626 Image Processing and Pattern Recognition 4SH
EECE 5644 Introduction to Machine Learning and Pattern Recognition 4SH
EECE 7200 Linear Systems Analysis 4 SH
EECE 7203 Complex Variable Theory and Differential Equations 4 SH
EECE 7204 Applied Probability and Stochastic Processes 4 SH
EECE 7211 Nonlinear Control 4 SH
EECE 7213 System Identification and Adaptive Control 4 SH
EECE 7214 Optimal and Robust Control 4 SH
EECE 7242 Integrated Circuits for Communications and Analog Signal Processing 4 SH
EECE 7245 Microwave Circuit Design for Wireless Communications 4 SH
EECE 7310 Modern Signal Processing 4 SH
EECE 7311 Two Dimensional Signal and Image Processing 4 SH
EECE 7312 Statistical and Adaptive Signal Processing 4 SH
EECE 7313 Pattern Recognition 4 SH
EECE 7323 Numerical Optimization Methods 4 SH
EECE 7335 Detection and Estimation Theory 4 SH
EECE 7336 Digital Communications 4 SH
EECE 7337 Information Theory 4 SH
EECE 7364 Mobile and Wireless Networking 4 SH
EECE 7364 Advanced Computer Vision 4 SH
EECE 7393 Analysis and Design of Data Networks 4 SH
EECE 7397 Advanced Machine Learning 4SH

Computer Systems and Software (CSSW)

EECE 5627 Arithmetic and Circuit Design for Inexact Computing 4SH
EECE 5640 High Performance Computing 4SH
EECE 5643 Simulation and Performance Evaluation 4SH

EECE 7205 Fundamentals Computer Engineering 4SH
EECE 7352 Computer Architecture 4SH
EECE 7353 VLSI Design 4SH
EECE 7357 Fault Tolerant Computers 4SH
EECE 7360 Combinatorial Optimization 4SH
EECE 7390 Computer Hardware Security 4SH
EECE 7376 Operating Systems: Interface and Implementation 4SH
EECE 7368 High-Level Design of HW/SW Systems 4SH
EECE 7375 Compilers for Modern Architectures 4SH
EECE 7398 Special Topics: Advanced Computer Architecture 4SH
CS 5200 Database Systems Management 4SH
CS 6410 Compilers 4SH

Computer Networks and Security (CNWS)

EECE 5576 Wireless Communication Systems 4SH
EECE 5640 High Performance Computing 4SH
EECE 5698 Special Topics: Networks: Technology, Economics, Social Interactions 4SH
EECE 5698 Special Topics in Software Security 4SH
EECE 5645 Introduction to Software Security 4SH
EECE 7204 Applied Probability and Stochastic Processes 4SH
EECE 7205 Fundamentals Computer Engineering 4SH
EECE 7352 Computer Architecture 4SH
EECE 7364 Mobile and Wireless Networking 4SH
EECE 7360 Combinatorial Optimization 4SH
EECE 7393 Analysis and Design of Data Networks 4SH
EECE 7390 Computer Hardware Security 4SH
EECE 7374 Fundamentals of Computer Networks 4SH
EECE 7398 Special Topics: Probabilistic System Modeling and Analysis 4 SH
EECE 7393 Analysis and Design of Data Networks 4 SH
CS 5700 Fundamentals of Computer Networks 4SH
CS 6754 Secure Wireless Ad-hoc Robots on Mission 1 4SH
CS 7785 Special Topics in Network Science 4SH

Computer Vision, Machine Learning, and Algorithms (CVMA)

EECE 5626 Image Processing and Pattern Recognition 4SH
EECE 5639 Computer Vision 4SH

EECE 5640 High Performance Computing 4SH
EECE 5644 Introduction to Machine Learning and Pattern Recognition 4SH
EECE 5642 Data Visualization 4SH
EECE 5698 Special Topics: Mobile Robotics 4SH
EECE 7204 Applied Probability and Stochastic Processes 4SH
EECE 7205 Fundamentals Computer Engineering 4SH
EECE 7313 Pattern Recognition 4SH
EECE 7323 Numerical Optimization Methods 4SH
EECE 7352 Computer Architecture 4SH
EECE 7360 Combinatorial Optimization 4SH
EECE 7370 Advanced Computer Vision 4SH
EECE 7397 Advanced Machine Learning 4SH
EECE 7398 Special Topics: Human Centered Computing 4SH

Electromagnetics, Plasma, and Optics

EECE 5648 Biomedical Optics 4 SH
EECE 5695 RF and Optical Antennas 4 SH
EECE 5697 Acoustics and Sensing 4 SH
EECE 7105 Optics for Engineers 4 SH
EECE 7202 Electromagnetic Theory 1 4 SH
EECE 7203 Complex Variable Theory and Differential Equations 4 SH
EECE 7245 Microwave Circuit Design for Wireless Communication 4 SH
EECE 7270 Electromagnetic Theory 2 4 SH
EECE 7271 Computational Methods in Electromagnetics 4 SH
EECE 7275 Antennas and Radiation 4 SH
EECE 7276 Microwave Properties of Materials 4 SH
EECE 7284 Optical Properties of Matter 4 SH
EECE 7296 Electronic Materials 4 SH
EECE 7297 Advanced Magnetic Materials 4 SH
EECE 7295 Magnetic Materials Fundamentals and Measurements 4 SH
EECE 7309 Special Topics in Electromagnetics, Plasma, Optics 4 SH

Microsystems, Material, and Devices

EECE 5606 Micro- and Nanofabrication 4 SH
EECE 5648 Biomedical Optics 4 SH
EECE 5649 CMOS Analog Integrated Circuits 4 SH

EECE 5696 Energy Harvesting Systems 4 SH
EECE 7201 Solid State Devices 4 SH
EECE 7240 Analog Integrated Circuit Design 4 SH
EECE 7241 Advanced Solid State Devices 4 SH
EECE 7242 Integrated Circuits for Communications and Analog Signal Processing 4 SH
EECE 7243 Integrated Circuit Fabrication 4 SH
EECE 7244 Introduction to Microelectromechanical Systems (MEMS) 4 SH
EECE 7245 Microwave Circuit Design for Wireless Communication 4 SH
EECE 7246 Design and Analysis of Digital Integrated Circuits 4 SH
EECE 7247 Radio Frequency Integrated Circuit Design 4 SH
EECE 7353 VLSI Design 4 SH
EECE 7276 Microwave Properties of Materials 4 SH
EECE 7284 Optical Properties of Matter 4 SH
EECE 7398 Special Topics in Magnetic Materials 4 SH

Power Systems, Power Electronics, and Motion Control

EECE 5580 Classical Control Systems 4 SH
EECE 5610 Digital Control Systems 4SH
EECE 5666 Digital Signal Processing 4SH
EECE 5682 Power System Analysis 1 4SH
EECE 5684 Power Electronics 4SH
EECE 5686 Electrical Machines 4SH
EECE 5688 Analysis of Unbalanced Power Networks 4SH
EECE 5694 Numerical Optimization 4SH
EECE 5698 Special Topic: Energy Harvesting Systems 4 SH
EECE 7200 Linear System Analysis 4SH
EECE 7211 Nonlinear Control 4SH
EECE 7212 Multivariable Control Systems 4SH
EECE 7213 System Identification and Adaptive Control 4SH
EECE 7214 Optimal and Robust Control 4SH
EECE 7323 Numerical Optimization Methods 4SH
EECE 7224 Power System State Estimation 4SH
EECE 7236 Special Topics in Control 4SH
EECE 7237 Special Topics in Power Electronics 4SH
EECE 7239 Special Topics in Power Systems 4SH
EECE 7335 Detection and Estimation 4SH
ENGR 5670 Sustainable Energy 4SH