EE Professional Preparation Curriculum Planning

Systems Area Examples

In addition to the required courses in the BSEE curriculum and flowchart, students choose **9 Engineering Support Electives units** and **11 Technical Electives units**. If you are interested in careers in any of the following Electrical Engineering Systems Area Examples, we would recommend that you review courses offerings from the following **Engineering Support Electives** and **Technical Electives course listings** We provide example lists of course arrangements here (* - choose at most one non-EE technical electives).

Digital Signal Processing Example:

CSC/CPE 202 Data Structures (3+1)
CSC/CPE 203 Object Oriented Program.(3+1)
CPE 357 Systems Programming (3+1)
MATH 206 Linear Algebra I (4)
MATH 248 Methods of Proof in Math. (4)
MATH 306 Linear Algebra II (4)
EE 419 Digital Signal Processing (3) [W]
 EE 459 Digital Signal Process. Lab (1) [W]
EE 515 Discrete Time Filters (4) [F]
EE 509 Computational Intelligence (4) [S]
EE 525 Stochastic Processes (4) [F]

Image Processing / Computer Vision Example:

CSC 202 Data Structures (4)
MATH 206 Linear Algebra I (4)
PHYS 323 Optics (4) [W]
CPE/EE 428 Computer Vision (3+1) [W]
EE 528 Digital Image Processing (4) [F]
EE 424 Intro. to Remote Sensing (3+1) [W]
EE 516 Pattern Recognition (3+1) [S]

Robotics/Mechatronics Example:

ME 211 Engineering Statics (3)
ME 212 Engineering Dynamics (3)
MATE 210 Materials Engineering (3)
 MATE 215 Materials Laboratory I (1)
CPE/EE 414 Robotic Systems Integration (3+1)
EE 432 Digital Control Systems (3) [F]
 EE 472 Digital Control Systems Lab (1) [F]
CPE/EE 428 Computer Vision (3+1) [W]
CPE/EE 439 Intro. to Real-Time Op.Sys. (3+1)
CPE/EE 442 Real-Time Embedded Syst. (3+1)
EE 513 Control System Theory (4) [W]
*CPE 416 Autonomous Mobile Robotics (3+1)

*ME 405 Mechatronics (3+1) [W,S]
*PHYS 417 Nonlinear Dynamic. Syst. (3+1) [S]

Communications Example:

MATH 206 Linear Algebra I (4)
MATH 248 Methods of Proof in Math. (4)
MATH 306 Linear Algebra II (4)
PHYS 322 Vibrations and Waves (3) [F]
EE 415 Communication System Design (3) [F]
EE 416 Digital Communications (3) [F]
EE 456 Communication Systems Lab (1) [F]
EE 475 Com. Networks and Systems Lab (1) [F]
EE 403 Fiber Optic Communication (3) [F]
 EE 443 Fiber Optic Communication Lab (1) [F]
EE 440 Wireless Communications (3) [W]
 EE 480 Wireless Communications Lab (1) [W]
EE 504 Software Defined Radio (3+1) [S]
EE 525 Stochastic Processes (4) [F]
EE 526 Advanced Digital Commun. (4) [W]

Audio Engineering Example:

PHYS 322 Vibrations and Waves (3) [F]
MU 311 Sound Design: Technologies (3+1) [F]
EE 419 Digital Signal Processing (3) [W]
 EE 459 Digital Signal Process. Lab (1) [W]
EE 447 Stringed Musical Instrument (3+1) [S]
EE 425 Analog Filter Design (3) [S]
 EE 455 Analog Filter Design Lab (1) [S]
EE 515 Discrete Time Filters (4) [F]

Control Systems Example:

MATH 206 Linear Algebra 1 (4)
ME 211 Engineering Statics (3)
ME 212 Engineering Dynamics (3)
EE 432 Digital Control Systems (3) [F]
 EE 472 Digital Control Systems Lab (1) [F]
EE 513 Control System Theory (4) [W]
EE 509 Computational Intelligence (4) [S]
EE 514 Adv. Topics in Auto. Control (4) [S]

Engineering Support Electives Listing for Systems Area:

CSC/CPE 202 Data Structures (3+1)
CSC/CPE 203 Object Oriented Program.(3+1)
CPE 357 Systems Programming (3+1)
MATH 206 Linear Algebra I (4)
MATH 248 Methods of Proof in Math. (4)
MATH 306 Linear Algebra II (4)
PHYS 323 Optics (4) [W]
ME 211 Engineering Statics (3)
ME 212 Engineering Dynamics (3)
MATE 210 Materials Engineering (3)
 MATE 215 Materials Laboratory I (1)
MATH 248 Methods of Proof in Math. (4)
MATH 306 Linear Algebra II (4)
PHYS 322 Vibrations and Waves (3) [F]

Technical Electives Listing for Systems Area

EE 419 Digital Signal Processing (3) [W]
 EE 459 Digital Signal Process. Lab (1) [W]
EE 515 Discrete Time Filters (4) [F]
EE 509 Computational Intelligence (4) [S]
EE 525 Stochastic Processes (4) [F]
CPE/EE 428 Computer Vision (3+1) [W]
EE 528 Digital Image Processing (4) [F]
EE 424 Intro. to Remote Sensing (3+1) [W]
EE 516 Pattern Recognition (3+1) [S]
CPE/EE 414 Robotic Systems Integration (3+1)
EE 432 Digital Control Systems (3) [F]
 EE 472 Digital Control Systems Lab (1) [F]
CPE/EE 428 Computer Vision (3+1) [W]
CPE/EE 439 Intro. to Real-Time Op.Sys. (3+1)
CPE/EE 442 Real-Time Embedded Syst. (3+1)
EE 513 Control System Theory (4) [W]
*CPE 416 Autonomous Mobile Robotics (3+1)
*ME 405 Mechatronics (3+1) [W,S]
*PHYS 417 Nonlinear Dynamic. Syst. (3+1) [S]
EE 415 Communication System Design (3) [F]
EE 416 Digital Communications (3) [F]
EE 456 Communication Systems Lab (1) [F]
EE 475 Com. Networks and Systems Lab (1) [F]
EE 403 Fiber Optic Communication (3) [F]
 EE 443 Fiber Optic Communication Lab (1) [F]
EE 440 Wireless Communications (3) [W]
 EE 480 Wireless Communications Lab (1) [W]
EE 504 Software Defined Radio (3+1) [S]
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EE 509 Computational Intelligence (4) [S]
EE 514 Adv. Topics in Auto. Control (4) [S]