

# EE Professional Preparation Curriculum Planning

## Electronics 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 Electronics 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 of these non-EE technical electives).

### IC Design and Fabrication

#### Example:

MATE 210 Materials Engineering (3)  
MATE 215 Materials Lab I (1)  
MATE 340 Electronics Materials Systems (4)  
PHYS 412 Solid State Physics (3) [F]  
PHYS 452 Solid State Physics Lab (1) [SP]  
EE/PHYS 422 Polymer Electronics Lab (1) [F,W]  
EE 431/CPE 441 Computer-Aided Design of VLSI Devices (3+1) [F]  
BMED 434/EE 423/MATE 430 Micro/Nano Fabrication (3) [W]  
BMED 435 Microfabrication Lab (2) [W]  
EE 524 Solid State Electronics (3) [S]  
EE 531/CPE 541 Advanced VLSI Design (3+1) [F]  
EE 532 VLSI Testing (1) [S]  
EE 544 Solid-State Electronics & VLSI Lab (1) [S]  
IME/MATE 458/CPE 488 Microelectronics and Electronics Packaging (3+1)

### Wireless and RF Electronics

#### Example:

MATH 206 Linear Algebra I (4)  
MATH 304 Vector Analysis (4) [W,S]  
PHYS 408 Electromag. Fields & Waves I (4) [F]  
EE 440 Wireless Communications (3) [W]  
EE 480 Wireless Communications Lab (1) [W]  
EE 405 High Frequency Amplifier Design (3) [F]  
EE 445 High Frequency Amp Design Lab (1) [F]  
EE 412 Advanced Analog Circuits (3) [W]  
EE 452 Advanced Analog Circuits Lab (1) [W]  
EE 413 Advanced Electronic Design (4) [S]  
EE 425 Analog Filter Design (3) [S]  
EE 455 Analog Filter Design Lab (1) [S]

EE 524 Solid State Electronics (3) [S]  
EE 525 Stochastic Processes (4) [F]  
EE 529 Microwave Device Electronics (3) [W]

### Sustainability in Electronics

#### Example:

ME 211 Engineering Statics (3)  
ME 212 Engineering Dynamics (3)  
ME 302 Thermodynamics (3)  
PHYS 310 Physics of Energy (3) [SP]  
EE 410 Power Electronics I (3+1) [F]  
EE 411 Power Electronics II (3+1) [W]  
EE 413 Advanced Electronic Design (4) [SP]

### Biomedical Instrumentation

#### Example:

BMED 310 Measurement/Analysis (4) [FW]  
BMED 440 Bioelectronics and Instrumentation (3+1) [FW]  
EE 412 Advanced Analog Circuits (3) [W]  
EE 452 Advanced Analog Circuits (1) [W]  
EE 413 Advanced Electronic Design (3+1) [S]  
EE 419 Digital Signal Processing (3) [W]  
EE 459 Digital Signal Process. Lab (1) [W]  
CPE/EE 442 Real-Time Embedded Systems (3+1) [F]  
CPE/EE 447 Stringed Musical Instrument..Design (3+1) [S]

## **Engineering Support Electives Listing for Electronics Area:**

**MATE 210 Materials Engineering (3)**  
**MATE 215 Materials Lab I (1)**  
**MATE 340 Electronics Materials Systems (4)**  
**PHYS 412 Solid State Physics (3) [F]**  
**PHYS 452 Solid State Physics Lab (1) [SP]**  
**EE/PHYS 422 Polymer Electronics Lab (1) [F,W]**  
**MATH 206 Linear Algebra I (4)**  
**MATH 304 Vector Analysis (4) [W,S]**  
**PHYS 408 Electromag. Fields & Waves I (4) [F]**  
**ME 211 Engineering Statics (3)**  
**ME 212 Engineering Dynamics (3)**  
**ME 302 Thermodynamics (3)**  
**PHYS 310 Physics of Energy (3) [SP]**  
**BMED 310 Measurement/Analysis (4) [FW]**

## **Technical Electives Listing for Electronics Area**

**EE 431/CPE 441 Computer-Aided Design of  
VLSI Devices (3+1) [F]**  
**BMED 434/EE 423/MATE 430 Micro/Nano  
Fabrication (3) [W]**  
**BMED 435 Microfabrication Lab (2) [W]**  
**EE 524 Solid State Electronics (3) [S]**  
**EE 531/CPE 541 Advanced VLSI Design (3+1) [F]**  
**EE 532 VLSI Testing (1) [S]**  
**EE 544 Solid-State Electronics & VLSI Lab (1) [S]**  
**IME/MATE 458/CPE 488 Microelectronics and  
Electronics Packaging (3+1)**  
**EE 440 Wireless Communications (3) [W]**  
**EE 480 Wireless Communications Lab (1) [W]**  
**EE 405 High Frequency Amplifier Design (3) [F]**  
**EE 445 High Frequency Amp Design Lab (1) [F]**  
**EE 412 Advanced Analog Circuits (3) [W]**  
**EE 452 Advanced Analog Circuits Lab (1) [W]**  
**EE 413 Advanced Electronic Design (4) [S]**  
**EE 425 Analog Filter Design (3) [S]**  
**EE 455 Analog Filter Design Lab (1) [S]**  
**EE 524 Solid State Electronics (3) [S]**  
**EE 525 Stochastic Processes (4) [F]**  
**EE 529 Microwave Device Electronics (3) [W]**  
**EE 410 Power Electronics I (3+1) [F]**  
**EE 411 Power Electronics II (3+1) [W]**  
**EE 413 Advanced Electronic Design (4) [SP]**  
**BMED 440 Bioelectronics and  
Instrumentation (3+1) [FW]**  
**EE 419 Digital Signal Processing (3) [W]**  
**EE 459 Digital Signal Process. Lab (1) [W]**  
**CPE/EE 442 Real-Time Embedded Systems  
(3+1) [F]**  
**CPE/EE 447 Stringed Musical  
Instrument..Design (3+1) [S]**