GENERAL CURRICULUM IN ELECTRICAL ENGINEERING

Technical Electives

Select from the following: [1,2,3]		11
EE Senior Design Lecture/Laboratory Electives		
EE 410	Power Electronics I	
EE 411	Power Electronics II	
EE 413	Advanced Electronic Design	
EE/CPE 414	Robotic Systems Integration	
EE 417	Alternating Current Machines	
EE 420	Sustainable Electric Energy Conversion	
EE 424	Introduction to Remote Sensing	
EE/CPE 428	Computer Vision	
EE 431/CPE 441	Computer-Aided Design of VLSI Devices	
EE 433	Introduction to Magnetic Design	
EE 434	Automotive Engineering for a Sustainable Future	
EE/CPE 439	Introduction to Real-Time Operating Systems	
EE/CPE 442	Real Time Embedded Systems	
EE/CPE 446	Design of Fault-Tolerant Digital Systems	
EE/CPE 447	Stringed Musical Instrument Acoustics, Mechanics, and Transducer Design	
EE 495	Cooperative Education Experience [4]	
EE 502	Microwave Component and System Engineering	
EE 504	Software Defined Radio	
EE 516	Pattern Recognition	
EE 518	Power System Protection	
EE/CPE 521	Computer Systems	
EE/CPE 522	Advanced Real-Time Operating Systems Design	
EE/CPE 523	Digital Systems Design	
EE 529	Microwave Device Electronics	
EE 531/CPE 541	Advanced VLSI Design	
EE 534	Advanced Photonic Systems	
EE/CPE 542	Advanced Real Time Embedded Systems	
EE Senior Design Lecture Electives		
EE 400	Special Problems [5]	
EE 403	Introduction to Photonics and Fiber Optics	
EE 405	High Frequency Amplifier Design	
EE 406	Power Systems Analysis I	
EE 407	Power Systems Analysis II	
EE 412	Advanced Analog Circuits	
EE 415	Communication Systems Design	
EE 416	Digital Communication Systems	
EE 418	Photonic Engineering	
EE 419	Digital Signal Processing	
EE 423/ BMED 434/ MATE 430	Micro/Nano Fabrication	
EE 425	Analog Filter Design	
EE/CPE 432	Digital Control Systems	
EE 440	Wireless Communications	
EE 470	Selected Advanced Topics	
EE 502	Microwave Component and System Engineering	
EE 509	Computational Intelligence	
EE 511	Electric Machines Theory	
EE 513	Control Systems Theory	
EE 514	Advanced Topics in Automatic Control	
EE 515	Discrete Time Filters	
EE 518	Power System Protection	
EE 519	Advanced Analysis of Power Systems	
EE 520	Advanced Solar-Photovoltaic Systems Design	
EE 524	Solid State Electronics	
EE 526	Advanced Digital Communications	
EE 527	Advanced Topics in Power Electronics	
EE 528	Digital Image Processing	
EE 530	Fourier Optics	
EE 533	Antennas	
EE 570	Selected Advanced Topics	
EE Senior Design Laboratory Electives		
EE 400	Special Problems [5]	
EE/PHYS 422	Polymer Electronics Laboratory	
EE 435	Industrial Power Control and Automation	
EE 443	Introduction to Photonics and Fiber Optics Laboratory	
EE 444	Power Systems Laboratory	
EE 445	High Frequency Amplifier Design Laboratory	
EE 452	Advanced Analog Circuits Laboratory	
EE 455	Analog Filter Design Laboratory	
EE 456	Digital Communication Systems Laboratory	
EE 458	Photonic Engineering Laboratory	
EE 459	Digital Signal Processing Laboratory	
EE 471	Selected Advanced Laboratory	
EE/CPE 472	Digital Control Systems Laboratory	
EE 473/ BMED 435/MATE 435	Microfabrication Laboratory	
EE 475	Communication Networks and Systems Laboratory	
EE 480	Wireless Communications Laboratory	
EE/CPE 532	VLSI Circuit Testing	

EE 541	Advanced Microwave Laboratory
EE 544	Solid-state Electronics and VLSI Laboratory
Non-EE Electives	
BMED 420	Principles of Biomaterials Design
BMED 425	Biomedical Engineering Transport
BMED 430	Biomedical Modeling and Simulation
BMED 440	Bioelectronics and Instrumentation
BMED 445	Biopotential Instrumentation
BUS 311	Managing Technology in the International Legal Environment
CHEM 314	Biochemistry: Fundamentals and Applications
CPE 315	Computer Architecture
CPE 333	Computer Hardware Architecture and Design
CPE 416	Autonomous Mobile Robotics
CPE 464	Introduction to Computer Networks
CSC/CPE 357	Systems Programming
CSC/CPE 453	Introduction to Operating Systems
CSC/CPE 458	Current Topics in Computer Systems
CSC/CPE 471	Introduction to Computer Graphics
ECON 330	International Trade Theory
ECON 337	Money, Banking and Credit
ENVE 331	Fundamentals of Environmental Engineering
IME 301	Operations Research I
IME 303	Project Organization and Management
IME 305	Operations Research II
IME 319	Human Factors Engineering
IME 401	Sales Engineering
IME 435	Reliability for Design and Testing
IME 457	Advanced Electronic Manufacturing
IME/MATE 458/ CPE 488	Microelectronics and Electronics Packaging
MATE 340	Electronic Materials Systems
MATH 304	Vector Analysis
MATH 306	Linear Algebra II
MATH 406	Linear Algebra III
MATH 410	Complex Analysis I
MATH 411	Complex Analysis II
MATH 412	Introduction to Analysis I
MATH 413	Introduction to Analysis II
MATH 451	Numerical Analysis I
MATH 452	Numerical Analysis II
MATH 453	Numerical Optimization
ME 302	Thermodynamics I
ME 405	Mechatronics
ME 415	Energy Conversion
MU 311	Introduction to Recording, Synthesis, and Production
MU 312	Advanced Recording, Synthesis, and Production
MU 411	Sonic Interactions with Technology
PHYS 305	Classical Mechanics I
PHYS 306	Classical Mechanics II
PHYS 310	Physics of Energy
PHYS 313	Introduction to Atmospheric Physics
PHYS 318	Special Theory of Relativity
PHYS 403	Particle and Nuclear Physics
PHYS 405	Quantum Mechanics I
PHYS 406	Quantum Mechanics II
PHYS 408	Electromagnetic Fields and Waves I
PHYS 409	Electromagnetic Fields and Waves II
PHYS 423	Advanced Optics
PHYS 425	Solid State Physics
PHYS 426	Solid State Physics Laboratory
PHYS 428	Nonlinear Dynamical Systems
Approved Engineering Electives	
Select from the following: [1,2,6]	9
BIO 111	General Biology
BMED 212	Introduction to Biomedical Engineering Design
BMED 310	Biomedical Engineering Measurement and Analysis
BMED 450	Contemporary Issues in Biomedical Engineering
CHEM 125	General Chemistry for Physical Science and Engineering II
CHEM 212	Introduction to Organic Chemistry
CHEM 314	Biochemistry: Fundamentals and Applications
CPE 290	Selected Topics (Introduction to C++ Programming)
CPE 315	Computer Architecture
CPE 333	Computer Hardware Architecture and Design
CSC/CPE 202	Data Structures
CSC/CPE 203	Project-Based Object-Oriented Programming and Design
CSC 248	Discrete Structures
CSC/CPE 357	Systems Programming
EE 261	Intro C Programming with a Hardware Emphasis
EE 262	Intro C++ Programming with a Hardware Emphasis
EE/PHYS 422	Polymer Electronics Laboratory
IME 142	Manufacturing Processes: Materials Joining
IME 143	Manufacturing Processes: Material Removal
IME 301	Operations Research I
IME 305	Operations Research II
IME 314	Engineering Economics
IME 315	Financial Decision Making for Engineers
MATE 210	Materials Engineering

MATE 215	Materials Laboratory I
MATE 232	Materials, Ethics, and Society
MATE 340	Electronic Materials Systems
MATE 430/ BMED 434/ EE 423	Micro/Nano Fabrication
MATE/BMED 435/EE 473	Microfabrication Laboratory
MATH 206	Linear Algebra I
MATH 248	Methods of Proof in Mathematics
MATH 304	Vector Analysis
MATH 306	Linear Algebra II
MATH 406	Linear Algebra III
MATH 412	Introduction to Analysis I
MATH 410	Complex Analysis I
MATH 411	Complex Analysis II
MATH 451	Numerical Analysis I
MATH 452	Numerical Analysis II
MATH 453	Numerical Optimization
ME 211	Engineering Statics
ME 212	Engineering Dynamics
ME 228	Engineering Design Communication
ME 251	Introduction to Detailed Design with Solid Modeling
ME 302	Thermodynamics I
ME 341	Fluid Mechanics I
PHYS 212	Modern Physics II
PHYS 310	Physics of Energy
PHYS 313	Introduction to Atmospheric Physics
PHYS 315	Lasers
PHYS 318	Special Theory of Relativity
PHYS 323	Optics
PHYS 403	Particle and Nuclear Physics
PHYS 405	Quantum Mechanics I
PHYS 406	Quantum Mechanics II
PHYS 408	Electromagnetic Fields and Waves I
PHYS 409	Electromagnetic Fields and Waves II
PHYS 423	Advanced Optics
PHYS 425	Solid State Physics
PHYS 426	Solid State Physics Laboratory
PHYS 428	Nonlinear Dynamical Systems
Total units	**20**

1 Consultation with an advisor is recommended prior to selecting Technical Electives or Approved Electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.

2 A course cannot be double-counted as a Technical Elective and an Approved Engineering Elective.

3 A minimum of two EE Senior Design Lecture Electives and two EE Senior Design Laboratory Electives.

4 Four units maximum.

5 Four units maximum may count toward Technical Electives; one unit maximum, with approval of department chair, may count towards Senior Design Laboratory Elective.

6 The number of units given for transfer credit will not exceed the number of units of the Cal Poly course.