### Communications Systems Depth

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**Year 1**

**Year 2**

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**Year 3**

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- For personalized course plans, please set up an appointment with an advisor.
- Due to six different college requirements, only major requirements are listed.

### Major Requirements

**Lower Division Requirements**
- □ CHEM 6A General Chemistry I
- □ MATH 18 Linear Algebra
- □ PHYS 2A Mechanics
- □ MATH 20A Calculus I
- □ PHYS 2B Electricity and Magnetism
- □ MATH 20B Calculus II
- □ PHYS 2C Flu, Wav, Thrmdyn, Optics
- □ MATH 20C Calculus III
- □ PHYS 2D Relativity & Quantum
- □ MATH 20D Differential Equations
- □ MATH 20E Vector Calculus
- □ ECE 5 Intro to ECE
- □ ECE 15 Engineering Computation
- □ ECE 25 Intro to Digital Design
- □ ECE 30 Intro to Computer Eng
- □ ECE 35 Intro to Analog Design
- □ ECE 45 Circuits & Systems
- □ ECE 65 Components & Circuits Lab

**Upper Division Requirements**

**BREADTH**
- □ ECE 100 Linear Electronic Systems
- □ ECE 101 Linear Systems Fundamentals
- □ ECE 102 Intro Active Circuit Design
- □ ECE 107 Electromagnetism
- □ ECE 109 Eng. Probability & Stats

**Communications Systems Depth**
- □ ECE 153 Probability and Random Processes for Engineers
- □ ECE 154A Communications Systems I
- □ ECE 154B Communications Systems II
- □ ECE 154C Communications Systems III
- □ ECE 158A Data Networks I
- □ Design Course: ECE 111, 115, 191, or 190

**Electives**
- □ 4 Technical
- □ 2 Professional
## COMPUTER SYSTEM DESIGN DEPTH

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### MAJOR REQUIREMENTS

#### Lower Division Requirements
- CHEM 6A General Chemistry I
- PHYS 2A Mechanics
- PHYS 2B Electricity and Magnetism
- PHYS 2C Flu, Wav, Thrmdyn, Optics
- PHYS 2D Relativity & Quantum
- MATH 20B Calculus II
- MATH 20C Calculus III
- MATH 20D Differential Equations
- MATH 20E Vector Calculus
- MATH 18 Linear Algebra

#### Upper Division Requirements

##### BREADTH
- ECE 100 Linear Electronic Systems
- ECE 101 Linear Systems Fundamentals
- ECE 102 Intro Active Circuit Design
- ECE 103 Fundamentals/Devics & Matrls
- ECE 109 Eng. Probability & Stats

##### COMPUTER SYSTEM DESIGN DEPTH
- CSE 141 Intro to Computer Architecture
- ECE 165 Digital Integrated Circuit Design and two of
  - ECE 111 Advanced Digital Design Project
  - ECE 158A Data Networks I
  - CSE 143 Microelectronic System Design
- Design Course: ECE 191 or 190

#### ELECTIVES
- 5 Technical
- 2 Professional

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ECE Undergraduate Student Affairs Office | Jacobs Hall 2701 & 2702 | ece.ucsd.edu
Questions? Go to vac.ucsd.edu
Updated 5/18/2018
### ELECTRONIC CIRCUITS & SYSTEMS DEPTH

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### MAJOR REQUIREMENTS

#### Lower Division Requirements
- CHEM 6A General Chemistry I
- PHYS 2A Mechanics
- PHYS 2B Electricity and Magnetism
- PHYS 2C Flu, Wav, Thrmdyn, Optics
- PHYS 2D Relativity & Quantum
- MATH 20A Calculus I
- MATH 20B Calculus II
- MATH 20C Calculus III
- MATH 20D Differential Equations
- MATH 20E Vector Calculus
- MATH 18 Linear Algebra

#### Upper Division Requirements

**BREADTH**
- ECE 100 Linear Electronic Systems
- ECE 101 Linear Systems Fundamentals
- ECE 102 Intro Active Circuit Design
- ECE 103 Fundamentals/Devices & Matrls
- ECE 107 Electromagnetism
- ECE 109 Eng. Probability & Stats

**ELECTRONIC CIRCUITS & SYSTEMS DEPTH**
- ECE 164 Analog Integrated Circuit Design
- ECE 165 Digital Integrated Circuit Design
- ECE 166 Microwave Systems and Circuits
- Design Course: ECE 111, 191, or 190

**ELECTIVES**
- 5 Technical
- 2 Professional

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**ELECTRONIC DEVICES & MATERIALS DEPTH**

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**MAJOR REQUIREMENTS**

**Lower Division Requirements**

- CHEM 6A General Chemistry I
- PHYS 2A Mechanics
- PHYS 2B Electricity and Magnetism
- PHYS 2C Flu, Wav, Therm, Dyn, Optics
- PHYS 2D Relativity & Quantum
- MATH 20E Vector Calculus
- MATH 18 Linear Algebra
- MATH 20A Calculus I
- MATH 20B Calculus II
- MATH 20C Calculus III
- MATH 20D Differential Equations

**Upper Division Requirements**

**BREADTH**

- ECE 100 Linear Electronic Systems
- ECE 101 Linear Systems Fundamentals
- ECE 102 Intro Active Circuit Design
- ECE 103 Fundamentals/Devices & Matrials
- ECE 107 Electromagnetism
- ECE 109 Eng. Probability & Stats

**ELECTRONIC DEVICES & MATERIALS DEPTH**

- ECE 135A Semiconductor Physics
- ECE 135B (Electronic Devices
- ECE 136L Microelectronics Laboratory
- ECE 183 Optical Electronics

- Design Course: ECE 111, 191, or 190

**ELECTIVES**

4 Technical

2 Professional

Questions? Go to vac.ucsd.edu

Updated 5/18/2018
# Electrical Engineering Major

**Machine Learning & Controls Depth**

**Suggested Transfer Plan 2017-2018**

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## Major Requirements

### Lower Division Requirements
- CHEM 6A General Chemistry I
- PHYS 2A Mechanics
- PHYS 2B Electricity and Magnetism
- PHYS 2C Flu, Wav, Thrm, Dyn, Optics
- PHYS 2D Relativity & Quantum
- MATH 5 Linear Algebra
- MATH 20A Calculus I
- MATH 20B Calculus II
- MATH 20C Calculus III
- MATH 20D Differential Equations
- MATH 20E Vector Calculus
- ECE 5 Intro to ECE
- ECE 15 Engineering Computation
- ECE 25 Intro to Digital Design
- ECE 30 Intro to Computer Eng
- ECE 35 Intro to Analog Design
- ECE 45 Circuits & Systems
- ECE 65 Components & Circuits Lab

### Upper Division Requirements

#### Breadth
- ECE 100 Linear Electronic Systems
- ECE 101 Linear Systems Fundamentals
- ECE 107 Electromagnetism
- ECE 109 Eng. Probability & Stats

#### Machine Learning & Controls Depth
- ECE 171A Linear Control System Theory
- ECE 174 Intro to Linear and Nonlinear Optimization with Applications
- ECE 175A Elements of MI: Pattern Recognition & Machine Learning
- *One of: ECE 171B Linear Control System Theory, OR ECE 172A Intro to Intelligent Sys: Robotics & Machine Intelligence, OR ECE 175B Elements of MI: Probabilistic Reasoning & Graphical Models

- Design Course: ECE 111, 191, or 190

## Electives
- 6 Technical
- 2 Professional

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- **MATH 18 Linear Algebra**
- **PHY 2A Mechanics**
- **MATH 20A Calculus I**
- **PHY 2B Electricity and Magnetism**
- **MATH 20B Calculus II**
- **PHY 2C Flu, Wav, Thmdyn, Optics**
- **MATH 20C Calculus III**
- **PHY 2D Relativity & Quantum**
- **MATH 20D Differential Equations**
- **MATH 20E Vector Calculus**
- **ECE 5 Intro to ECE**
- **ECE 100 Linear Electronic Systems**
- **ECE 107 Intro to Computer Eng**
- **ECE 109 Eng. Probability & Stats**
- **ECE 181 Physical Optics and Fourier Optics**
- **ECE 182 Electromagnetic Optics, Guided-Wave, and Fiber Optics**
- **ECE 183 Optical Electronics**
- **ECE 184 Optical Information Processing and Holography, OR ECE 185 Lasers and Modulators**

#### Upper Division Requirements
- **BREADTH**
  - **ECE 100 Linear Electronic Systems**
  - **ECE 101 Linear Systems Fundamentals**
  - **ECE 103 Fundamentals/Devics & Matrls**
  - **ECE 107 Electromagnetism**
  - **ECE 109 Eng. Probability & Stats**

#### PHOTONICS DEPTH
- **ECE 181 Physical Optics and Fourier Optics**
- **ECE 182 Electromagnetic Optics, Guided-Wave, and Fiber Optics**
- **ECE 183 Optical Electronics**
- **One of: ECE 184 Optical Information Processing and Holography, OR ECE 185 Lasers and Modulators**

#### Electives
- 5 Technical
- 2 Professional

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#### Lower Division Requirements

- **CHEM 6A General Chemistry I**
- **MATH 20A Calculus I**
- **PHYS 2A Mechanics**
- **PHYS 2B Electricity and Magnetism**
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- ECE 35 Intro to Analog Design
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- ECE 65 Components & Circuits Lab

#### Upper Division Requirements

- ECE 100 Linear Electronic Systems
- ECE 101 Linear Systems Fundamentals
- ECE 107 Electromagnetism
- ECE 109 Eng. Probability & Stats
- ECE 153 Probability and Random Processes for Engineers
- ECE 161A Intro to Digital Signal Processing
- ECE 161B Digital Signal Processing I
- ECE 161C Applications of Digital Signal Processing
- Design Course: ECE 111, 191, or 190

#### ELECTIVES

- 6 Technical
- 2 Professional

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