Welcome to the Department of Electrical & Computer Engineering
Virtual Open House

The Electrical and Computer Engineering (ECE) Department offers:
- excellent undergraduate, graduate, and certificate programs
- opportunity to earn a 5-year BS/MS
- dual undergraduate major in electrical and computer engineering
- faculty who are involved in cutting-edge research—and who are dedicated teachers
- small class sizes
- well-equipped labs and facilities
- valuable hands-on professional experiences
- internships, co-op, and year-long senior design projects
- research opportunities at both the undergraduate and graduate levels

Students may join the Institute of Electrical and Electronics Engineers (IEEE), a professional society with a student branch in the department of Electrical and Computer Engineering. Qualified students can join the Zeta Xi Chapter of Eta Kappa Nu, the Electrical and Computer Engineering National Honor Society.

Accreditation
The computer engineering and the electrical engineering programs are accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Mission
The Department of Electrical and Computer Engineering at the University of Massachusetts Dartmouth provides students with a universally recognized undergraduate and graduate education in electrical and computer engineering, develops new ideas and technologies deployed around the world, and prepares its graduates to be vital contributors to the economic growth of the Commonwealth of Massachusetts, the nation, and beyond.

Vision
The Department of Electrical and Computer Engineering at the University of Massachusetts Dartmouth will continue to provide outstanding undergraduate and graduate education driven by excellence in teaching and research.

Electrical and Computer Engineering Fields
The fields of electrical and computer engineering are on the cutting edge of development, discovery, and changes in technology.

Electrical engineers design and develop electrical and electronic systems and devices such as communications equipment, integrated circuits, and computers.

Computer engineers specialize in areas such as embedded systems, computer networks, database systems, and cybersecurity.

UMassD's Electrical & Computer Engineering Department offers the following academic undergraduate programs:

- **Computer Engineering** BS, BS/MS
- **Cyber Security** Concentration
- **Electrical Engineering** BS, BS/MS
Welcome to the
Department of Electrical & Computer Engineering
Virtual Open House
Thursday, October 29, 2020

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- **Computer Engineering** BS, BS/MS
- **Cybersecurity** Concentration
- **Electrical Engineering** BS, BS/MS
Department videos

**Computer Engineering:** creating tools for progress

**Electrical Engineering:** shaping the future
Computer engineers apply electrical engineering techniques and computer science concepts to develop dependable, cost-effective hardware and software systems and components. Specialty areas within computer engineering include: computer architecture, computer networks, cybersecurity, embedded systems, mobile devices, wireless sensors, and Internet of Things.

Overview of skills developed

Computer engineering is a rapidly-growing discipline and is one of the highest-paid engineering fields. As a computer engineering major, you’ll be prepared to meet the changing high-technology needs of industry and to pursue graduate studies. Our program prepares you for this evolving field by providing a strong background in science, mathematics, and engineering.

Curriculum outline

The computer engineering program at UMass Dartmouth graduates students who excel in applications engineering and team leadership. Your courses will include programming, circuits, digital design, electronics, operating systems, algorithms, and computer networks. You can also choose from technical electives such as integrated circuits, computer architecture, wireless sensor networks, wireless communications, multimedia communications, database systems, network security, and dependable computing.

For the bachelor’s degree, you will complete 75 credits in general engineering, and computer and electrical engineering courses with 122 credits overall. During your senior year, you will complete a team design project that provides real-world experience defined by current industry needs.

We offer a concentration in cybersecurity, the application of measures to protect computers and computer systems from unauthorized access and attack.

Dual bachelor’s degrees in electrical and computer engineering will prepare you to meet a broad range of challenges in these ever-changing, high-tech fields.

A minor in computer engineering provides the opportunity to specialize in areas such as computer architecture, computer networks, database systems, and digital circuits. For the minor, you’ll complete at least 23.5 credits.

Internship sites

UMassD students intern with renowned companies, agencies, and institutions, including:

- Dell EMC
- Electric Boat
- MathWorks
- NASA
- Naval Undersea Warfare Center

Graduate opportunities at UMassD

Continue your education at UMass Dartmouth with a master’s degree in computer engineering. UMassD also offers an accelerated BS/MS degree program that enables qualified undergraduates to complete both degrees in computer engineering within five years.

The Department of Electrical & Computer Engineering offers a doctoral degree with an option in computer engineering and graduate certificates in specialization areas for working professionals.

Graduate school placements

Our graduates have attended:

- California Institute of Technology
- Georgia Institute of Technology
- MIT
- Purdue University
- University of Michigan
- University of Texas

Entry-level salary range: $68,500-$75,250
(National Association of Colleges and Employers 2020)

Career placements

Computer engineers work in a variety of fields such as aerospace, automotive, biomedical, communications, consumer electronics, medicine, power, and space. As a computer engineer, you may work as a designer, researcher, scientist, educator, consultant, entrepreneur, executive, public official, or in the military.

Our graduates have secured jobs at:

- AT&T
- General Dynamics
- Lockheed Martin Corporation
- Raytheon
- Siemens

Contact info umassd.edu/programs/computer-engineering/
# Bachelor of Science in Computer Engineering

## Freshman Year

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<th>Course Name</th>
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<td>Circuit Theory I</td>
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<td>ECE 161</td>
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**Total Credits:** 17

## Junior Year

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<td>ECE 388</td>
<td>Embedded Design Project</td>
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<td>ECE 369</td>
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**Total Credits:** 16

## Senior Year

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<td>ECE 320</td>
<td>Discrete-Time Linear Systems</td>
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<td>EGR 303</td>
<td>Engineering Economics</td>
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<td>University Studies Elective&lt;sup&gt;3&lt;/sup&gt;</td>
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**Total Credits:** 12

**Total Credits for Class of 2022 and Beyond:** 122

---

1. This course meets the University Studies Cluster 1E requirement: Foundation for Learning through Engagement.
2. This course meets the University Studies Cluster 1D requirement: Mathematics.
3. See University Studies requirements (Clusters 3A, 3B, 4A, and 4B).
4. This course meets the University Studies Cluster 2A requirement: Science of the Natural World.
5. This course meets the University Studies Cluster 1C requirement: Intermediate Writing.
6. Must be chosen from the University Studies cluster 2B (Science in the Engaged Community) approved list (www.umassd.edu/universitystudies/approvedcourses/) and be a BIO, BNG, CHM, MAR, or MLS course; or a PHY course numbered above 150. Requirement may not be satisfied by independent study, seminars or internships.
7. This course meets the University Studies Cluster 5B requirement: Learning through Engagement.
8. This course meets the University Studies Cluster 5A requirement: Capstone Study.
9. Must be taken from approved list of courses.
10. This course meets the University Studies Cluster 4C requirement: The Nature of the Global Society.
BACHELOR OF SCIENCE IN COMPUTER ENGINEERING
(TOTAL NUMBER OF CREDITS: 122)

ENL 101
Crit. Writing and Reading I
[3] (Fall & Spring)

EGR 111
Intro. Eng. & Computing
[3] (Fall)

MTH 153
Calculus App. Sci. & Eng. I
[4] (Fall & Spring)

ECE 160
Found. Comp. Engineering I
[4] (Fall & Spring)

University Studies Elective (3B)
[3] (Fall & Spring)

ENL 102
Crit. Writing and Reading II
[3] (Spring & Fall)

ECE 250
Fundamentals of MATLAB
[2] (Spring & Fall)

MTH 154
Calculus App. Sci. & Eng. II
[4] (Spring & Fall)

PHY 111
Physics for Sci. and Eng. I
[4] (Spring & Fall)

ECE 264
[4] (Spring)

ENL 266
Technical Communications
[3] (Fall & Spring)

ECE 251
Circuit Theory I
[3½] (Fall & Spring)

MTH 213
Calculus App. Sci. & Eng. III
[4] (Fall & Spring)

PHY 112
Physics for Sci. and Eng. II
[4] (Fall & Spring)

ECE 265
Found. Cyber Security
[3] (Fall)

ECE 201
Circuit Theory I
[3½] (Fall & Spring)

MTH 212
Differential Equations
[3] (Spring & Fall)

ECE 261
Found. Comp. Engineering II
[4] (Spring)

ECE 202
Circuit Theory II
[3½] (Spring)

MTH 335
Applied Discrete Structures
[3] (Fall)

ECE 311
Digital Electronics
[4] (Fall)

ECE 355
Applied Discrete Structures
[3] (Fall)

ECE 316
Design Project I
[3] (Fall)

Science Elective
University Studies (2B)
[3] (Spring & Fall)

ECE 263
Embedded System Design
[3½] (Fall)

ECE 356
Design/Impl. RT Emb. RMS
[3] (Fall)

ECE 311
Digital Electronics
[4] (Fall)

ECE 368
Digital Design Project
[3] (Fall)

University Studies Elective (3A)
[3] (Fall & Spring)

ECE 369
Computer Networks
[3] (Spring)

MTH 331
Probability
[3] (Spring & Fall)

ECE 370
Design/Impl. RT Emb. RMS
[3] (Fall)

ECE 320
Discrete-Time Lin. Systems
[3] (Fall)

Technical Elective
[3] (Spring & Fall)

MTH 331
Probability
[3] (Spring & Fall)

EGR 303
Eng. Economics
[3] (Fall)

University Studies Elective (4C)
[3] (Spring & Fall)

** To enroll in ECE 457, students must have passed three of the following four courses: ECE 311, ECE 368, ECE 369, ECE 388.
Technical electives are courses above and beyond the required courses that allow computer engineering students to broaden or deepen their engineering knowledge in one or more technical areas. Students are required to take two technical electives. Generally, allowable technical electives are any 400- or 500- level courses in the College of Engineering (CEN, CIS, ECE, MNE, PHY, BNG departments) or in Mathematics (MTH) except seminars, independent study, directed study, internships, or required courses within the program.

Choices of technical electives must always be discussed with, and approved by, the student’s academic advisor prior to enrollment. Some restrictions are:

1. No more than one technical elective may be taken from outside the department of Electrical and Computer Engineering (ECE).
2. Only 400- or 500-level courses can be used as technical electives.
3. The student must have the required prerequisites and/or co-requisites for each technical elective.
4. Enrollment in 500-level courses requires the written permission of the instructor.
Cybersecurity Concentration

The Electrical & Computer Engineering Department offers a bachelor's degree in computer engineering with a concentration in cybersecurity: the application of measures to protect computers and computer systems from unauthorized access and attack. With the expanding threat of cyber attacks, cybersecurity is one of the fastest growing fields in computer engineering.

As a concentration within UMassD's computer engineering major, your program of study will explore the foundations of cybersecurity—including hardware, software, and information systems—as well as contemporary issues in software reliability, security risk, internet of things, and smart and connected cities.

Your course work will cover:

- **computer forensics**: detection and prevention of digital criminal activity; ethical and legal issues in the collection, analysis, and reporting of digital data
- **cyber threats and security management**: trustworthy systems, security life cycles, social engineering, risk assessment
- **design and implementation**: real-time embedded resource management systems
- **network security**: defense of network resources, cryptography, models

As a computer engineering major, you'll be prepared to meet the changing high-technology needs of industry and to continue with graduate studies.

Computer engineers with a background in cybersecurity will find exciting and challenging work in a variety of fields including banking, communications, e-commerce, government, the military, and social media.
Calculation of the GPA in the Computer Engineering Major

In order to graduate students must have a minimum 2.000 cumulative grade point average (GPA) for all courses taken at the university. Students must also have a minimum 2.000 cumulative GPA in the major. For purposes of this computation:

1. All courses that are used to fulfill degree requirements and have an ECE prefix (except ECE 298, ECE 400, ECE 401, ECE 495 or ECE 595) or a CIS prefix numbered 200 or above (except CIS 298, CIS 411, CIS 491, CIS 492, CIS 495 or CIS 595) count in calculating the GPA for the major.
2. Courses required for the major but taken outside the major discipline are not counted.
3. If a course is repeated, only the most recent course grade (whether higher or lower) shall be used to calculate the major cumulative GPA.
As the world innovates to answer the challenges of the 21st century, electrical engineering is at the heart of nearly every solution. Electrical engineers design and develop electrical and electronic devices and systems for power, communications, and control; integrated circuits; and computers. Electrical engineers are working in such diverse fields as: acoustics, aerospace, automotive, communications, consumer electronics, control systems and robotics, medical instrumentation, power systems, and underwater systems.

Overview of skills developed

Our program prepares you for this evolving field by providing a strong background in science, mathematics, and engineering. You will be prepared for positions in government and industry and to continue your studies at the graduate level.

Curriculum outline

For the BS in electrical engineering, you will complete 75 credits in general engineering, and electrical and computer engineering courses with 125 credits overall. You’ll also choose technical electives in areas such as acoustics, computer networks, integrated circuits, wireless communications, and others. Your courses will include:

- Analog circuits
- Computer programming
- Digital and embedded system design
- Electromagnetics
- Electronics
- Signals and systems

During your final year, you will complete a senior design project that provides real-world experience defined by industry need.

Dual bachelor’s degrees in electrical and computer engineering will prepare you to meet a broad range of challenges in these ever-changing, high-tech fields.

A minor in electrical engineering provides an opportunity to specialize in a specific area such as electromagnetic theory, communications theory, electronics, signal processing, or very large-scale integration. For the minor, you’ll complete at least 19 credits.

Internship sites

UMassD students intern with renowned companies, agencies, and institutions, including:

- General Dynamics Electric Boat
- MathWorks
- Naval Undersea Warfare Center

Graduate opportunities at UMassD

Continue your education at UMass Dartmouth with a master’s degree in electrical engineering. UMassD also offers an accelerated BS/MS degree program that enables qualified undergraduates to complete both degrees in electrical engineering within five years.

The Department of Electrical & Computer Engineering offers a doctoral degree with an option in electrical engineering, and graduate certificates in specialized areas for working professionals.

Graduate school placements

Our graduates have attended:

- Dartmouth College
- MIT
- Purdue University
- Stanford University
- University of Connecticut
- University of Michigan
- University of New Hampshire
- Worcester Polytechnic Institute

Entry-level salary range: $65,000-$75,500
(National Association of Colleges and Employers 2020)

Career placements

Electrical engineering is the largest field within the engineering profession and continues to grow and evolve. The U.S. Bureau of Labor Statistics projects a 5% job growth rate through 2029.

Massachusetts is ranked as “one of the best states” for its strong economy. Our graduates secure jobs here and across the country at:

- Dell EMC
- GE Aviation
- General Dynamics C4 Systems
- Lockheed Martin Corporation
- MIT Lincoln Laboratory
- U.S. Navy

Contact info umassd.edu/programs/electrical-engineering/
# Bachelor of Science in Electrical Engineering

**FRESHMAN YEAR**

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**SOPHOMORE YEAR**

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<th>C</th>
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<tbody>
<tr>
<td>ECE 311 Digital Electronics</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>ECE 310 Engineering Ethics</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>ECE 320 Discrete-Time Linear Systems</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>ECE 312 Analog Electronics</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>ECE 335 Electromagnetic Theory I</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>ECE 321 Continuous-Time Linear Systems</td>
<td>3</td>
<td>0</td>
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<tr>
<td>ECE 388 Embedded Design Project</td>
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<td>ECE 336 Electromagnetic Theory II</td>
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<tr>
<td>University Studies Elective⁵</td>
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<td>3</td>
<td>ECE 384 Random Signals &amp; Noise</td>
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<td><strong>Total Credits</strong></td>
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**SENIOR YEAR**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>R</th>
<th>L</th>
<th>C</th>
<th>Second Semester</th>
<th>R</th>
<th>L</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 457 Design Project I°</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>ECE 458 Design Project II°</td>
<td>1</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>ECE 471 Communication Theory</td>
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<td>Technical Elective⁹</td>
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</tr>
<tr>
<td>Engineering Mathematics¹°</td>
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<td>0</td>
<td>3</td>
<td>University Studies Elective⁹</td>
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<td>EGR 303 Engineering Economics¹¹</td>
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<td></td>
<td><strong>Total Credits</strong></td>
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</tbody>
</table>

**TOTAL CREDITS = 125**

R = Recitation (hours)  
L = Laboratory (hours)  
C = Number of Credits

---

¹ This course meets the University Studies Cluster 1E requirement: Foundation for Learning through Engagement.
² This course meets the University Studies Cluster 1D requirement: Mathematics.
³ Must be chosen from this list: BIO, BNG, CHM, MAR, or MLS course; or a PHY course numbered above 150. One of the courses must come from the University Studies cluster 2B (Science in the Engaged Community) approved list (www.umassd.edu/universitystudies/approvedcourses/). Requirement may not be satisfied by independent study, seminars or internships.
⁴ This course meets the University Studies Cluster 2A requirement: Science of the Natural World.
⁵ See University Studies requirements (Clusters 3A, 3B, 4A, and 4B).
⁶ This course meets the University Studies Cluster 1C requirement: Intermediate Writing.
⁷ This course meets the University Studies Cluster 5B requirement: Learning through Engagement.
⁸ This course meets the University Studies Cluster 5A requirement: Capstone Study.
⁹ Must be taken from approved list of courses.
¹⁰ Must be taken from this list: ECE 355, ECE 455, ECE 485, or MTH 221.
¹¹ This course meets the University Studies Cluster 4C requirement: The Nature of the Global Society.
Technical electives are courses above and beyond the required courses that allow electrical engineering students to broaden or deepen their engineering knowledge in one or more technical areas. Students are required to complete two technical electives. Generally, allowable technical electives are any 400- or 500-level courses in Electrical and Computer Engineering (ECE), Mathematics (MTH), Mechanical Engineering (MNE), or Computer Science (CIS) except seminars, independent study, directed study, internships, or required courses within the program. Additional allowable courses are:

- PHY 441 Statistical Thermodynamics
- PHY 442 Elements of Solid State Physics

Choices of technical electives must always be discussed with, and approved by, the student’s academic advisor prior to enrollment. Some restrictions are:

1. No more than one technical elective course may be taken from outside the department of Electrical and Computer Engineering (ECE).
2. Only 400- or 500-level courses can be used as technical electives.
3. The student must have the required prerequisites and/or co-requisites for each technical elective.
4. Enrollment in 500-level courses requires the written permission of the instructor.
Calculation of the GPA in the Electrical Engineering Major

Students must have a minimum 2.000 cumulative grade point average (GPA) for all courses taken at the university in order to graduate. Students must also have a minimum 2.000 cumulative GPA in the major. For purposes of this computation:

1. All courses that are used to fulfill degree requirements and have an ECE prefix (except ECE 298, ECE 400, ECE 401, ECE 495, or ECE 595) count in calculating the GPA for the Electrical Engineering major.
2. Courses required for the major but taken outside the major discipline are not counted in the calculation of the major cumulative GPA.
3. If a course is repeated, only the most recent course grade (whether higher or lower) shall be used to calculate the major cumulative GPA.
Dual Major

For students interested in pursuing a particularly challenging program of study, the option of a dual major is available. This program, which requires students to meet the obligations of both the Computer Engineering and the Electrical Engineering programs, is structured such that a student may complete it in four years. To accomplish the program in four years, at least one summer must be devoted to academic study.

The dual major prepares the student to meet a broad range of challenges in the ever-changing high-technology fields of both Electrical Engineering and Computer Engineering. Students are also well prepared to pursue advanced study in either field. Engineering skills as well as a strong background in science and mathematics are imparted to students.

The program consists of a core of basic science and mathematical courses interwoven throughout the four years of study. The student also selects 15 credit hours in a new general education curriculum called University Studies. Approximately 9 credits of general education courses must be completed during one or more winter or summer sessions in order to complete the program in four years. Students begin to identify with their field in the first and second year of study. In the junior year, students gain a foundation for further study in particular branches of computer engineering or electrical engineering. A senior year composed primarily of elective courses and a capstone design project allows the students to concentrate their studies in one or more areas of their choice, and hone their skills for the real world. A co-op or internship experience is also available for qualified students in cooperation with regional industries.

Students may join the Institute of Electrical and Electronics Engineers (IEEE), a professional society with a student branch in the department of Electrical and Computer Engineering. Qualified students can join the Zeta Xi Chapter of Eta Kappa Nu, the Electrical and Computer Engineering National Honor Society.
# Bachelor of Science in Computer Engineering and Electrical Engineering

## Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>R</th>
<th>L</th>
<th>C</th>
<th>Second Semester</th>
<th>R</th>
<th>L</th>
<th>C</th>
</tr>
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<tbody>
<tr>
<td>ENL 101 Critical Writing &amp; Reading I</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>ENL 102 Critical Writing &amp; Reading II</td>
<td>3</td>
<td>0</td>
<td>3</td>
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<tr>
<td>EGR 111 Intro. Engineering &amp; Computing¹</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>ECE 250 Fundamentals of MATLAB</td>
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<td>2</td>
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<tr>
<td>ECE 160 Foundations Comp. Engineering I</td>
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<td>2</td>
<td>4</td>
<td>ECE 264 Object Oriented Software Devel.</td>
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<tr>
<td>MTH 153 Calculus Applied Science &amp; Eng. I²</td>
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<td>3</td>
<td>PHY 111 Physics for Science &amp; Eng. I⁴</td>
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## Sophomore Year

<table>
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<th>Second Semester</th>
<th>R</th>
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<th>C</th>
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<tbody>
<tr>
<td>ECE 201 Circuit Theory I</td>
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<td>1½</td>
<td>3½</td>
<td>ENL 266 Technical Communications⁵</td>
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<tr>
<td>ECE 256 Foundations of Cyber Security</td>
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<td>3</td>
<td>ECE 161 Foundations Comp. Engineering II</td>
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<tr>
<td>ECE 260 Digital Logic &amp; Computer Design</td>
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<td>1½</td>
<td>3½</td>
<td>ECE 202 Circuit Theory II</td>
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<tr>
<td>MTH 213 Calculus Applied Science &amp; Eng. III</td>
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<td>4</td>
<td>ECE 263 Embedded System Design</td>
<td>3</td>
<td>1½</td>
<td>3½</td>
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<td>PHY 112 Physics for Science &amp; Eng. II</td>
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<td>MTH 212 Differential Equations</td>
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##Junior Year

<table>
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<tr>
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<th>C</th>
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<tr>
<td>ECE 370 Design/Impl. RT Embedded RMS</td>
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<td>ECE 310 Engineering Ethics</td>
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<tr>
<td>ECE 311 Digital Electronics</td>
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<td>ECE 312 Analog Electronics</td>
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<td>ECE 320 Discrete-Time Linear Systems</td>
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<td>ECE 321 Continuous-Time Linear Systems</td>
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<td>ECE 388 Embedded Design Project</td>
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<td>3</td>
<td>ECE 368 Digital Design</td>
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<td>ECE 355 Applied Discrete Structures</td>
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<td>3</td>
<td>ECE 369 Computer Networks</td>
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<td>ECE 384 Random Signals and Noise</td>
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<td>3</td>
<td>ECE 369 Computer Networks</td>
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## Senior Year

<table>
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<th>First Semester</th>
<th>R</th>
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<th>C</th>
<th>Second Semester</th>
<th>R</th>
<th>L</th>
<th>C</th>
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</thead>
<tbody>
<tr>
<td>ECE 335 Electromagnetic Theory I</td>
<td>3</td>
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<td>ECE 336 Electromagnetic Theory II</td>
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<td>ECE 457 Design Project I⁶</td>
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<td>ECE 458 Design Project II⁷</td>
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</tr>
<tr>
<td>ECE 471 Communication Theory</td>
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<td>Science Elective⁸</td>
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<td>Technical Elective⁹</td>
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<td>EGR 303 Engineering Economics¹⁰</td>
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<td>University Studies Elective¹</td>
<td>3</td>
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</tbody>
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15

...plus 9 additional credits: Science Elective⁸ and 2 University Studies courses¹.

**TOTAL CREDITS = 141**

1. This course meets the University Studies Cluster 1E requirement: Foundation for Learning through Engagement.
2. This course meets the University Studies Cluster 1D requirement: Mathematics.
3. See University Studies requirements (Clusters 3A, 4A, and 4B).
4. This course meets the University Studies Cluster 2A requirement: Science of the Natural World.
5. This course meets the University Studies Cluster 1C requirement: Intermediate Writing.
6. This course meets the University Studies Cluster 2B requirement: Science in the Engaged Community.
7. This course meets the University Studies Cluster 5B requirement: Learning through Engagement.
8. Must be chosen from this list: BIO, BNG, CHM, MAR, or MLS course; or a PHY course numbered above 150. One of the courses must come from the University Studies cluster 2B (Science in the Engaged Community) approved list (www.umassd.edu/universitystudies/approvedcourses/). Requirement may not be satisfied by independent study, seminars or internships.
9. Must be taken from approved list of courses.
10. This course meets the University Studies Cluster 4C requirement: The Nature of the Global Society.
Minors

Minors in Electrical Engineering and Computer Engineering

The Minor in Electrical Engineering and the Minor in Computer Engineering are designed to allow students with quantitative and scientific aptitudes and interests to acquire a basic level of competence in a particular area of electrical engineering or computer engineering. One of these minors can bring significant career benefits to majors in science or other engineering programs.

More information

- [Minor in Computer Engineering](#)
- [Minor in Electrical Engineering](#)
Electrical & Computer Engineering BS/MS

This fast-track program enables outstanding BS degree students in Electrical Engineering or Computer Engineering to complete both the BS and the MS with nine fewer total credits. Students may take three graduate courses as their CPE or ELE BS-degree technical electives.

Eligibility

Outstanding undergraduate scholars will be identified at the conclusion of the fall semester of their junior year. The graduate committee will select nominees at the beginning of the spring semester. Students invited to participate in the program must then select a graduate advisor within one month and develop an individual program of study. Those students will then file an application through the Office of Graduate Studies, submitting the regular graduate application but without GRE or TOEFL scores or recommendation letters, by the end of the academic year; and they will be accepted into the five-year program as of the fall of their senior year. Because of the nature of the BS/MS Program, students will be required to file a program of study along with their graduate application.

The department will follow a schedule:

- Graduate Committee identifies qualified students: February
- Graduate Committee sends invitation letters: March
- Students/Advisors Develop Program of Study: March/April
- Application filing deadline: May 1

Progression to MS Study

BS/MS students must complete the MS degree requirements under one of the existing options as well as the requirements for the BS Degree. A maximum of nine credits taken to satisfy the MS Degree requirements can be counted towards the BS degree as technical electives. The 400-level courses offered jointly at the 500-level must be taken at the 500-level in order to be double-counted. For BS degree students in Computer Engineering, ECE 457 can count as an undergraduate technical elective. For BS degree students in Electrical Engineering, ECE 471 can count as an undergraduate technical elective. A grade of B or better is required for the 400-level courses to be counted towards the MS degree.

The BS degree is earned when all requirements have been successfully completed.

Maintaining MS Status

The department has determined a specific policy to monitor BS/MS students' performance and progression towards their BS and then MS degrees.
Proper advising is crucial to ensure that the appropriate courses are being selected/taken and that your graduation plan is met.

Whether you are a freshman, sophomore, junior, or senior: you must discuss all of your academic issues (e.g., pre-registration for the upcoming semester, dropping and/or adding courses, withdrawing from courses) with your advisor.

For additional advising information, please log in to COIN, accessed through myUMassD.

First-Year Advisors

<table>
<thead>
<tr>
<th>Computer Engineering</th>
<th>Last Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advisor</td>
<td>Last Name</td>
</tr>
<tr>
<td>Paul Fortier</td>
<td>(A - K)</td>
</tr>
<tr>
<td>Philip Viall</td>
<td>(L - Z)</td>
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</table>

<table>
<thead>
<tr>
<th>Electrical Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advisor</td>
</tr>
<tr>
<td>Karen Payton</td>
</tr>
<tr>
<td>Dayalan Kasilingam</td>
</tr>
</tbody>
</table>

First-year advisors are trained to provide the appropriate guidance to first-year students.

When do I switch to an upper-level advisor? Your last advising session with your first-year advisor occurs when you pre-register for ECE 201 - Circuit Theory I.

Upper-Level Advisors

- **Sophomores and juniors**: access your COIN account at myUMassD to find your advisor.
- **Dual majors, minors, and seniors**: your advisor is Antonio Costa.
- **Honors Program**: your advisor is John Buck.

More advising resources

- Student resources
- ES3 Engineering Student Support & Services
- ECE Undergraduate Advising Handbook
- Advisor List 2020-2021
ABET accreditation

The electrical engineering program and the computer engineering program are accredited by the Engineering Accreditation Commission of ABET, www.abet.org. ABET is recognized by the Council on Higher Education Accreditation and accredits programs, not institutions.

Undergraduate programs: enrollment and degree data

UMass Dartmouth has full accreditation by the New England Commission of Higher Education (NECHE).

Program objectives & outcomes

- Program Objectives: Electrical and Computer Engineering
- Student Outcomes: Electrical and Computer Engineering
National Average Starting Salaries

- Computer Engineering: $71,107
- Electrical Engineering: $72,518
- Biomedical Engineering: $65,125
- Civil Engineering: $67,400
- Computer Science: $68,668
- Mechanical Engineering: $69,913
- Accounting: $57,734
- Economics: $60,390
- Finance: $58,472
- Marketing: $55,253

Source: National Association of Colleges and Employers (NACE) Starting Salary Survey (Winter 2020)
Employers of UMD ECE Graduates

- EVERSOURCE ENERGY
- Google
- EXCEL
- Dell EMC
- Raytheon
- BENTHOS
- Sandia National Laboratories
- AFC Cable Systems
- tyco
- Lucent Technologies
- Pratt & Whitney
- Bose
- BAE SYSTEMS
- Entergy
- Waters Corporation
- Intel
- General Dynamics
- ADCOLE
- MITRE
- Federal Bureau of Investigation
- Qualcomm
- PURVIS Systems
- A Proud Tradition Continues
- AMD
- Oracle
- SeaChange
- Lexmark
- The MathWorks
- DRAPER Laboratory
- Amazon
- Hewlett Packard
- Analog Devices
- Lockheed Martin
- Naval Undersea Warfare Center
- NAVSEA Software
- Cisco
- Woods Hole Oceanographic Institution
A guide to successful partnership with your college student

LISTEN
To their thoughts, feelings, dreams, concerns without prejudice; rather, focus on understanding why they feel the way they do

EMPATHIZE
With the pressure they feel with regard to academics and the many choices they need to make, remembering that is all new to them

TEMPER RESPONSES
By keeping communication open and by understanding that students experimenting with new ideologies, philosophies, and ways of expressing themselves – they frequently change their minds

TIME
Is different for college students – as adults they choose when to study and socialize

HELP OUT
By knowing it’s often better to “let them” learn to navigate the university and solve their own problems

EDUCATE YOURSELF
By knowing what the University offers by way of personal/academic/career planning support and leadership development – remembering that these are not always the “best years of their lives”

MAGICAL
Can be a way to describe your student’s experience in higher education and so is your chance to develop a continued successful and adult relational with your college student
Thank you for attending the virtual **UMass Dartmouth** College of Engineering Open House.

Stay safe and hope to see you at the spring 2021 Accepted Student Day.