



Electrical and Computer Engineering

Graduates of the Electrical and Computer Engineering programs invent the future. From hands on learning experiences in the classroom, to co-curricular clubs, and experiences outside of the classroom, students are prepared to better the world through technology and service to others.

THE PROGRAM

Electrical Engineering applies scientific discoveries to the design and creation of electrical systems, devices, and components that are safe, reliable, and practical.

Computer Engineering focuses on systems and hardware.

Whichever program a student chooses, they will combine a rigorous blend of mathematics, engineering and science with the Gonzaga humanities core. Students learn to imagine and develop the technology that improves everyday life and solves complex problems.

Electrical Engineering

- **Electrical energy/power:** Create solutions for sustainable power generation, power system security, energy storage, and battery development.
- **Wireless communications:** Search for the best way to transmit and receive information signals through wireless technologies like cell phones, Bluetooth, and NASA communications.
- **Electronics:** Design circuits to help develop the next-generation of smart phones, televisions, automobiles, navigation systems, audio players, video games, and much more.

Computer Engineering

- **Embedded systems:** Plan small, special-purpose and high-performance computers built into devices such as vehicles, wearables, and smartphones.
- **Computer networks:** Connect devices efficiently to share information quickly using hardware, software, and protocols.
- **Robotics:** Explore the design, construction, operation, and use of robots.

DEGREE PROGRAMS

Gonzaga's Department of Electrical and Computer Engineering offers two degree programs for students wanting to be at the forefront of technology:

- **B.S. Computer Engineering**
- **B.S. Electrical Engineering**

All SEAS engineering programs combine a rigorous blend of mathematics, engineering, and science with the Gonzaga humanities core.

SENIOR DESIGN

Engineering seniors team with faculty advisors and industry professionals on a senior design project to practice the skills needed for successful careers.

SUCCESS RATE*
92%

*Class of 2021 First Year
Destination Survey*

**employed, pursuing advanced
degree, or military service*

FACILITIES

Labs, classrooms, and resources are located in three buildings of Gonzaga's STEM complex. Here are some of the Electrical & Computer Engineering labs:

ELECTRICAL ENGINEERING

Avista T&D Power Lab — *PACCAR Center for Applied Science*

New power system simulation equipment provides students a unique opportunity to model and study power system behavior.

Controls Lab — *Herak Engineering Center*

Students model physical systems typical of control systems.

Communications Lab — *Herak Engineering Center*

Oscilloscopes, signal generators, and spectrum analyzers in this lab enhances student understanding of analog and digital communications systems.

COMPUTER ENGINEERING

Embedded Computer Systems Lab — *Herak Engineering Center*

Students gain practical, "hands on", and design experience incorporating microcomputer devices with software polling routines and interrupts to build simple calculators, clocks, and other embedded system applications.

Cyber-Physical Systems Lab — *Herak Engineering Center*

Students study, design, and build the interaction between the physical world and (embedded) processors via sensors, keypads, LCDs, motors, communication devices, amplifiers, and more.

Robotics Lab — *Herak Engineering Center*

The lab is well equipped with the latest electronic gadgets and software required for designing, controlling, and implementing robotic systems.

Digital Systems Design Lab — *Herak Engineering Center*

Students use Verilog hardware design language and state-of-the-art Field Programmable Gate Arrays (FPGA) for digital system description, simulation, and implementation.

Linux Servers — *PACCAR Center for Applied Science*

A cluster of high-performance Linux servers supports research and courses in parallel and cloud computing, VLSI circuits systems.

BOTH DEGREE PROGRAMS

Electric Circuits Lab — *Bollier Center for Integrated Science and Engineering*

Students learn the fundamental concepts of electric circuit measurements, understand the main features of power supply sources, analog, and digital multimeters.

Electronic Students Lab — *Bollier Center for Integrated Science and Engineering*

Various measuring and development tools are specifically available for electrical and computer engineering senior design projects.

GRADUATE FROM AN ABET-ACCREDITED PROGRAM

The BS programs in Computer Engineering and Electrical Engineering are accredited by the Engineering Accreditation Commission of ABET, www.abet.org.



Computing &
Engineering
Accreditation
Commissions



Sophomores in Electrical and Computer Engineering study circuits in the Bollier Center for Integrated Science and Engineering.

CAREER OUTCOMES

Companies that have hired recent Electrical Engineering or Computer Engineering graduates include:

- Boeing
- F5
- Intel
- Microsoft
- SpaceX

CO-CURRICULAR CLUBS

Clubs and professional organizations offer support and hands-on projects that reinforce classroom learning.

These include:

- Gonzaga Sustainable Energy
- GU Robotics
- Institute of Electrical and Electronics Engineers (IEEE)

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