



ELECTRICAL ENGINEERING



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Engineering
Accreditation
Commission



Energizing THE FUTURE

One of the largest branches of engineering, **electrical & computer engineering** is a highly collaborative field involving areas such as electronics, quantum physics, information technology, sensor and communication networks, bioimaging, computer architecture and nanoelectronics.

The field of electrical engineering encompasses the design, manufacture, test, and operation of electrical components, circuits, and systems. Computer engineering involves a wide range of topics including operating systems, computer architecture, computer networks, robotics, artificial intelligence and computer-aided design.

CONCENTRATIONS

We offer an ABET accredited Bachelor of Science degree in Electrical Engineering. The foundation for this degree lies within two traditional tracks:

- The **electrical engineering track** emphasizes electronics, controls, and digital systems. This track prepares students for the research, design and production of computers, communication systems, power systems, electrical appliance and many other electronic devices and systems.
- The **computer engineering track** emphasizes digital systems, networks, and complex hardware and software systems; this track prepares students to work with the design and operation of computing systems and digital communication systems.

PROGRAM *highlights*

Our design-oriented and laboratory intensive program emphasizes hands-on experience and teamwork. An understanding of basic electrical engineering principles, the development of problem solving skills, and extensive laboratory experience support classroom instruction to insure a working knowledge of traditional and emerging areas of electrical engineering. Here are some of the highlights of the electrical & computer engineering program at CBU:

- **Technical electives** help you customize your education. Courses in Computer Graphics, Advanced C++, Database Management, Video Game Design, iPhone and Android App Development, and many more are offered.



At CBU, I attained a solid electrical engineering foundation to help me pursue a fulfilling career in Power Systems Engineering. Additionally, connecting with CBU alumni through events provide excellent networking opportunities, especially in the Memphis area!

Elizabeth Hayes ('18)
Electrical Engineering

- A **Capstone Experience** challenges students to apply what they have learned in a comprehensive design project often done in conjunction with an internship or engineering practitioner. This two-semester experience requires students to engage in a complete design cycle from concept development through analysis, design, and report writing.
- Our **IEEE Student Chapter** provides students with opportunities to enhance leadership skills, build relationships with peers and alumni, and network with business leaders through conferences and seminars.
- The annual **IEEE Student Competition** gives students the opportunity to compete with over 100 southeastern engineering schools. Competitions in robotics, website design, academic paper presentation, software/hardware, and ethics help develop skills in oral presentation, written communication, and real-time problem solving.
- **Minors** are available in **Math, Physics, Computer Science, and Unmanned Aerial Systems**.



I'm beyond grateful to have gone to CBU and gotten a degree in Electrical Engineering. Because of the small class sizes, I had a great relationship with all my teachers, and I felt that every single one of my previous teachers genuinely wanted each of their students to succeed not only in the class environment but outside of the classroom as well. Additionally,

my fellow classmates and I were all very close due to all of us sharing the same classes, and because of that it felt like we were one big family that wanted to help each other out whenever any of us were struggling regardless of which engineering discipline we were in.

Joseph P. Sandoz ('24)
Electrical Engineering



IN THE WORKFORCE

Electrical engineers encompass a wide range of specialties and industries utilizing their expertise in designing, developing, and maintaining electrical systems and technologies. Occupations can be found in many fields:

- **Power Generation & Distribution** works on designing, operating, and maintaining systems for generating and transmitting electrical power.
- **Electronics Design & Manufacturing** involves designing electronic components, circuits, and systems for various applications
- **Control Systems & Automation** includes designing and implementing systems that automate processes and control machinery.
- **Renewable Energy** specializes in technologies such as solar, wind, hydroelectric, and geothermal power systems.
- **Telecommunications** involves designing and maintaining communication systems such as cell phone networks, satellite communications, and broadband internet systems.
- **Computer Hardware & Software Development** designs computer hardware components such as processors, memory devices, and peripherals.
- **Embedded Systems** are computer systems built into devices and machinery to control their functions.
- **Construction & Building Services** play a crucial role in the construction industry, designing electrical systems for buildings, including lighting, power distribution, HVAC controls, and fire alarm systems.
- **Microelectronics** involves the design and fabrication of integrated circuits and semiconductor devices.
- **EVs & Transportation** specializes in designing EV components, charging infrastructure, and related systems.

Why CBU?

- Affordable Tuition
- Internship/Co-Op Opportunities
- International Competitions
- 100% Employment Rate in 6 months (mechanical engineering major as of 2024)
- CBU offers exceptional return on investment: Ranked **#3** in the “Best Value Schools” according to *US News & World Report*
- **#13** out of 136 in Regional Universities South
- **#13** in “Best Undergraduate Teaching”
- **#12** in “Top Performers on Social Mobility”
- 91% of our full-time students receive financial assistance

LOCATED IN THE HEART OF MIDTOWN MEMPHIS

- Less than 2 miles from Overton Park, a 342-acre public park in Midtown Memphis
- Walking distance to the Cooper-Young and Overton Square Arts & Entertainment Districts

Bottom line — CBU graduates succeed.

More than 90 percent of our recent class was employed or attending graduate school within six months of graduation. In fact, more than 80 percent already had jobs or placement in graduate schools when they crossed the stage at graduation.



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