The Holcombe Department of Electrical and Computer Engineering can trace its roots to the first graduating class at Clemson University in 1896, and is now one of the largest and most active departments on campus.

Research

The research activities of the Holcombe Department of Electrical and Computer Engineering are clustered into four major areas:

The **Communications** research focus area includes the wireless communications program, applied electromagnetics, computer networks, and digital signal processing.

The **Electronics** group has active research projects in the areas of nanoelectronic materials processing, solid state device modeling, solar cells, biochips, power electronics, plasma displays, flexible electronics, nanophotonics, integrated optics, semiconductor lasers, optical systems, microwave circuits, and integrated circuit design.

The **Computer Systems** focus area includes computer architecture, high performance computing, computer security, penetration testing, system audit and monitoring, reconfigurable computing, embedded systems, and software engineering.

The **Intelligent Systems** group has active research projects in the areas of computer vision, sensor fusion, sensor networks, robotics, image processing, nonlinear estimation & control, biological modeling, bioprinting, autonomous air, ground, and water vehicles, situation and threat assessment, and power systems.

Centers and Research Laboratories

- Clemson University International Center for Automotive Research (CU-ICAR)
- Center for Optical Materials Science and Engineering Technologies (COMSET)
- Center for Research in Wireless Communications
- Computational Electromagnetics
- CU Electrical Power Research Association (CUEPRA)
- Image Processing and Artificial Intelligence Research
- Microelectronics Research
- Parallel Architecture Research
- Real-Time Power and Intelligent Systems
- Robotics and Mechatronics
- Speech Processing

Academic Programs

Undergraduate Programs

- **Electrical Engineering**
- **Computer Engineering**

Available technical depth areas:
- Communications and Networks
- Electromagnetics
- Digital Signal Processing
- Biomedical Systems
- Electronics
- Renewable Energy
- Robotics
- Electric Vehicle Systems
- Computer Hardware, Software & Architecture
- Software
- Power

Program Highlights:

Freshman Robotics Projects allow students to build and program robots using MATLAB Software.

Entrepreneurship Programs available as a Minor to students in engineering and science.

Honors Program and Research Opportunities provide small, honors-only classes and the opportunity to complete a senior honors thesis research project.

Two-semester Capstone Design Experience combines EE and CpE students in a team-based course using state-of-the-art equipment to build and program mechatronic systems.

IEEE Student Competition Course lets students run their own course to plan, build, and program a robot to compete against student teams from universities across the Southeast.

Summer Online Courses allow students to stay on track or get ahead while off campus during the summer.

Plugged In Mentorship Program pairs students with alumni mentors to keep them motivated and excited about electrical and computer engineering.

Graduate Programs

- **Electrical Engineering (M.S. and Ph.D.)**
  - Applied Electromagnetics
  - Communications Systems and Networks
  - Digital Signal Processing
  - Electronics
  - Intelligent Systems
  - Power
- **Electrical Engineering (MENGR)**
- **Computer Engineering (M.S. and Ph.D.)**
  - Communications Systems and Networks
  - Computer Systems Architecture
  - Digital Signal Processing
  - Intelligent Systems

Program Highlights:

Engineering Education Certificate program gives graduate students the opportunity to earn a Certificate in Engineering Education.

Technology Entrepreneurship Certificate is available for engineering and science students who envision an entrepreneurial career, want to he involved in new product activities, or seek a better understanding of the process of commercializing inventions.

Advanced Power Systems Engineering Certificate provides power engineers with an opportunity to attack more sophisticated problems associated with power systems protection, dynamics/stability, transients, and distribution.

Graduate Degree Programs in Photonics offer an interdisciplinary degree program designed to expand a student's knowledge beyond the boundaries of traditional departmental-based graduate programs.

Direct Entry Ph.D. Program available for suitably qualified students who have completed a baccalaureate degree.

Visit our Website for the latest ECE news, videos, research highlights, and more. **www.clemson.edu/ces/ece**

At a Glance

People

Faculty: 51
Staff: 13

Undergraduate Students:
- **Electrical Engineering: 272**
- **Computer Engineering: 229**

Graduate Students:
- **EE and CpE M.S. students: 72**
- **EE and CpE Ph.D. students: 101**

Endowed Chairs and Professorships:
- **PalmettoNet Endowed Chair**
- **Michelin Endowed Chair**
- **Holcombe Endowed Chair**
- **C. Tycho Howle Endowed Chair**
- **D. Houser Banks Professorship**
- **CoES IDEaS Professorship**
- **Duke Energy Professorship**
- **McQueen Quattlebaum Professorship**
- **Samuel R. Rhodes Professorship**
- **South Carolina Electric and Gas Distinguished Professorship**
- **Warren H. Owen-Duke Energy Distinguished Professorship**
- **Warren Owen Professorship**

CLEMSON UNIVERSITY

Directory

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Clemson's BSEE and BSCpE programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). Visit www.abet.org for more information.

Clemson University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools [1866 Southern Lane, Decatur, Georgia 30033-4097: Telephone number (404) 679-4501] to award bachelor's, master's, specialist and doctoral degrees.

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