

# College of Electronic and Information Engineering

## Southwest University

### 1. History

The origin of the College of Electronic and Information Engineering of Southwest University can be traced back to the National Women's Teacher's College in 1940. Later, it evolved through several phases, namely the Department of Physics, Southwest Normal University in 1986, the Department of Electronic and Information Engineering in October 1996, and a leg of College of Physical Science and Technology/ College of Electronic Information Engineering when the former Southwest Agricultural University and Southwest Normal University merged as Southwest University. On December 18, 2012, it eventually became the independent College of Electronic and Information Engineering of Southwest University. The motto of the college is "faith, engineering, erudition and humanism".

### 2. Facts and Figures

**Faculty members:** 62, including 17 senior faculty members (including four part-time professors) and 18 associate faculty members, 12 doctoral supervisors. More than 95% of full-time faculty members have obtained doctoral degrees. 70% have studied overseas for more than one year. 3 faculty members have been running high-level talent programs at the national and provincial levels, 3 faculty members have received government subsidies from the State Council, and 1 faculty member is a "highly cited scholar" at Elsevier.

**Staff members:** 25

#### ***One postdoctoral research station***

- Computer Science and Technology

#### ***One first-level discipline authorized to offer PhD's degree (4 years, full-time)***

- Computer Science and Technology

#### ***Two first-level disciplines authorized to offer master's degrees (3 years, full-time)***

- Electronic Information
- Information and Communication Engineering

### ***Three departments***

- Department of Electronic and Information Engineering
- Department of Communication Engineering
- Department of Information Security

### ***Three undergraduate programs (4 years, full-time)***

- Electronic Information Engineering (about 70 newly-enrolled students every year)
- Communication Engineering (about 70 newly-enrolled students every year)
- Information Security (about 70 newly-enrolled students every year)

## **3. Main Research Teams, Labs, and Achievements**

### ***One national research platform***

- Intelligent Transmission and Control National Local Joint Engineering Laboratory  
Participating Units

### ***Two Chongqing Key Laboratories***

- Chongqing Key Laboratory of Nonlinear Circuits and Intelligent Information Processing
- Network and Cloud Computing Security Chongqing University Key Laboratory

### ***Ranking***

- The discipline of Computer Science and Technology is in the top 1% of the ESI global ranking
- The discipline of Information and Communication Engineering is ranked 34<sup>th</sup> in the 2020 U.S. News “Top 48 Universities in Computer Science in Mainland China”
- Information and Communication Engineering is ranked 58<sup>th</sup> in the “2020 Soft Science Ranking of Best Disciplines in China”

### ***Research Institutes***

- Institute of Signal and Information Processing
- Institute of Computational Intelligence and Information Security
- Institute of Nonlinear Circuits and Confidential Communications
- Institute of Intelligent Perception and Wireless Communication

### ***Research achievements:***

- Nearly 50 projects have been approved by the National Natural Science Foundation of China
- More than 20 million yuan research funding per year
- Publishing more than 100 SCI papers on average per year

- More than 30 national patents granted
- In 2017, winning one first-class prize and two third-class prizes in natural science in Chongqing
- In 2021, winning one second-class prize and two third-class prizes in natural science in Chongqing

#### **4. Internationalization**

- “3+1”, “3+2” exchange with the University of Illinois at Chicago, US
- Students can participate in various exchange programs with universities in the United States, Canada, Australia, Japan, Korea, and Taiwan, Hong Kong, and Macau
- The college admits international students at all levels of undergraduate, master and doctoral studies
- Actively invite experts and scholars from abroad to lecture and exchange with the college

#### **5. Innovative measures to foster students**

- The College follows the characteristics and rules of education cultivation of engineering majors and opens the undergraduate laboratories to all students
- Actively organize students to participate in the National Student Challenge Cup Competition and National Student Electronic Design Competition
- Actively organize students to participate in professional events such as the National Student Mathematical Modeling Competition and the Chongqing Microcontroller Competition
- The college has several fixed internship and training bases for undergraduates, building a good platform for improving students' practical and innovative abilities
- Undergraduate mentoring system is in place, with all professors teaching undergraduates
- Undergraduate Students Approved for National Student Innovation and Entrepreneurship Experimental Program

#### **6. Potential collaboration majors**

##### ***(a) Communication Engineering (“3+1” or “4+0” preferred)***

***Introduction:*** In 2003, in order to meet the needs of the development of communication industry in the new century, on the basis of the platform of electronic information specialty, aiming at the direction of the development of modern communication technology, the college initiated a new undergraduate course of “Communication Engineering”. In 2004, an independent university-level “Communication Technology Laboratory” was set up, which further consolidated the foundation of the cultivation of communication engineering professionals. After more than 10 years of development,

the undergraduate program in communication engineering is supported by the master degree in Information and Communication Engineering and the Doctor degree in Computer Science and technology, taking the advanced communication theory and technology as the construction idea, and taking “Data communication and advanced network” and “Computing Intelligence and wireless communication” as the characteristic direction, it has gradually developed into one of the national first-class undergraduate specialty construction points and one of the important bases for cultivating outstanding talents in the information and communication industry in western China. In order to meet the needs of the future development of communications technology, the Southwest University communications engineering major aims to develop a strong sense of social responsibility, a solid foundation in mathematics and physics, good professional literacy and engineering practice, be able to work in R & D, design, production, management and technical service in mobile communication, Internet of Things, cloud computing, intelligent manufacturing and related administrative departments.

***(b) Information Security (“3+1” or “4+0” preferred)***

***Introduction:*** The major of Information Security originated from the Chongqing Key Laboratory of Network and Cloud Computing Security in the College of Electronic Information Engineering (CEIE), with information security science as the core and cross-fertilization of mathematics, computer science and technology, communication engineering, and electronic information engineering. The major adheres to the guiding role of national information security strategy, guiding students to research study, active practice, frontier exploration, and scientific and technological innovation, and strengthening the crossover and integration of information security technology with computer systems, network communication technology, cloud computing technology, secrecy technology, laws, and regulations, etc. The program highlights the combination of talent training and scientific research, provides undergraduates with a solid theoretical foundation and professional knowledge system, enhances the practical ability, and stimulates innovative thinking. The major of Information Security is enrolled under the major category of Electronic Information and is subdivided at the end of the second semester after general education in Electronic Information. It is dedicated to training students with the ability of information security theory research, planning, design, and deployment of computer systems and security defense systems as well as information system security management, so that they can become senior talents of information security in the fields of computer, modern communication, e-commerce, e-government, e-finance, etc.