<h1 style="text-align:center">Electronics Science and Technology Program</h1>

■ **Program Overview**

The Department of Electronic Engineering has two first-level disciplines which are "Information and Communication Engineering", and "Electronic Science and Technology". Four second-level disciplines are "Telecommunications and Information System" (state key discipline), "Signal and Information Processing" (state key cultivation discipline), "Circuit and System and Electromagnetic Fields", and "Microwave Techniques" (state key discipline). In the 2012 nationwide discipline evaluation hosted by the Ministry of Education, "Information and Communication Engineering" ranked fourth, while "Electronic Science and Technology" ranked sixth.

The Department of Electronic Engineering owns several national technology engineering laboratories like state key laboratory "Area of Optical Fiber Communication Network and Advanced Optical Communication System", national engineering research center for digital TV, national engineering laboratory for information content analysis, national research base for TFT-LCD key materials and so on. Moreover, the Department of Electronic Engineering has many provincial-level scientific research bases, such as key laboratory of Shanghai digital media processing and transmission, electronic system research of ministry of education, national engineering research center of information security management and service of ministry of education, and has established joint laboratories with famous international enterprises like Microsoft, IBM, TI and so on.

The main research areas include image communication, wireless communication, optical communication, network and information security, radar signal processing and remote sensing technology, multimode navigation and location service, high speed circuit theory and design of chips, guided wave optics and optoelectronic devices, antenna theory and technology, microwave and RF circuits and so on. Now, the Department of Electronic Engineering is in charge of many state-level projects, including 973 project, 863 key project plan, project of the State Natural Science Fund, key national defense project, key project of the national ministry of science and technology, the international cooperative research project and so on.

Since 2001, the Department of Electronic Engineering has already received nine national awards for science and technology (six as the first author/engineer), two national outstanding teaching achievement awards, four courses chosen as excellent courses by the State Ministry of Education and Shanghai Municipal Ministry of Education; four doctoral theses selected into Top 100 National Excellent Doctoral Dissertation. Dynamic performance of the optical network signaling protocols has been accepted as an international standard by the IETF. ADTB-T becomes part of China's terrestrial digital TV transmission standard.

The department has high-standard faculty team with more than 140 teachers and administrative staff, including one academician of Chinese Academy of Sciences, one academician of Chinese Academy of Sciences and Chinese Academy of

Engineering, seven IEEE Fellows, three chief scientists of "973 Program", three accredited professors of "Cheung Kong Scholars Program", one chair professor, six Recipients of National Science Fund for Outstanding Youth, five talents of Thousand Persons Plan, Two talents of the Thousand Youth Talents Plan, and two innovative groups of The State Natural Science Fund Committee.

■ **Research Directions**

Circuits and Systems

Electromagnetism Field and Microwave Technology

Integrated Circuits Design

■ **Main Courses.**

Course name(English)	Semester	Credit Hours	Departments	To whom
The Experimentations of FACTS	fall	2	Electrical Engineering of SEIEE	Master
Applied science of Superconductivity	Spring	2	Electrical Engineering of SEIEE	Master
Applications of Large System Optimization Theory to Power Systems	Spring	2	Electrical Engineering of SEIEE	Master
Modern Power Supply Technology	Spring	2	Electrical Engineering of SEIEE	Master
Computer Vision	Spring	3	Automation of SEIEE	Doctor
Information Fusion	Spring	2	Automation of SEIEE	Doctor
Adaptive Control	fall	2	Automation of SEIEE	Master
Advanced research writing	summer	2	Automation of SEIEE	Master
Presenting scientific ideas – case studies from embodied intelligence	summer	1	Automation of SEIEE	Master

Linear System Theory	fall	3	Automation of SEIEE	Master
Machine Learning - Fundamental and Practice	Spring	3	Computer Science of SEIEE	Master
Image Processing and Machine Vision	fall	3	Computer Science of SEIEE	Doctor
Theory and Methods for Statistical Learning	fall	3	Computer Science of SEIEE	Doctor
Intelligent Speech Technology	Spring	3	Computer Science of SEIEE	Master
Network Computing	Spring	3	Computer Science of SEIEE	Master
Digital Image Processing	fall	3	Computer Science of SEIEE	Master
Advanced Computer Architecture	fall	3	Computer Science of SEIEE	Master
Computer Graphics	Spring	3	Computer Science of SEIEE	Master
Advanced Computer Networks	fall	3	Computer Science of SEIEE	Master
Programming Language	Spring	3	Computer Science of SEIEE	Doctor/Master
Statistical Learning and Inference	fall	3	Computer Science of SEIEE	Master
Bioinformatics	Spring	3	Computer Science of SEIEE	Master
Security Engineering	fall	2	Computer Science of SEIEE	Master
Coding and Information Theory	fall	3	Computer Science of SEIEE	Master
Algorithm analysis and Theory	Spring	3	Computer Science of SEIEE	Master
Applied Algebra	fall	3	Computer Science of SEIEE	Master

Parallel Computing and Algorithms	Spring	2	Computer Science of SEIEE	Master
Computer Animation Design And Data Visualization	fall	3	Computer Science of SEIEE	Master
Modern Mobile Communications and Computing	Spring	3	Computer Science of SEIEE	Doctor
Advanced Topics on Internet of Things	fall	3	Computer Science of SEIEE	Doctor
Introduction to Web Search and Mining	Spring	2	Computer Science of SEIEE	Master
Digital Image Processing	fall	3	Electronic Engineering of SEIEE	Master
Stochastic Processes and Queuing Theory	fall	2	Electronic Engineering of SEIEE	Master
Design and Performance Analysis	Spring	3	Electronic Engineering of SEIEE	Master
Communication Theory and Systems	fall	3	Electronic Engineering of SEIEE	Master
Modern Signal Processing	fall	3	Electronic Engineering of SEIEE	Master
Visual Computing Theory and Engineering	Spring	2	Electronic Engineering of SEIEE	Master
Thery and Technology of Information security	fall	2	Electronic Engineering of SEIEE	Master/Doctor
Array Signal Processing and Space-Time Signal Processing	Spring	3	Electronic Engineering of SEIEE	Master
Waveguide optics	Spring	3	Electronic Engineering of SEIEE	Master
Electrumagnetic in Modern Communication	fall	2	Electronic Engineering of SEIEE	Master
Advanced Theory of Wave Propagation and Antenna	fall	2	Electronic Engineering of SEIEE	Doctor

Semiconductor Physics and Devices Physics	Spring	3	Electronic Engineering of SEIEE	Master
Advanced Theory of Electro magnetic Field	fall	3	Electronic Engineering of SEIEE	Master
Organic Electroluminescent Display and Lighting	Spring	3	Electronic Engineering of SEIEE	Master
Theory of Microwave and speed circuits	Spring	3	Electronic Engineering of SEIEE	Master
Low-noise electronic Design & Detection of Signal in Noise	Spring	3	Instrument Science and Engineering of SEIEE	Master
Chinese	fall/spring	2	International School of Education	Doctor/Master
Chinese Culture	fall/spring	2	International School of Education	Doctor/Master
Matrix Theory	fall	3	Mathematics	Master
Algorithmic method	fall	3	Mathematics	Master