

Program of Information Engineering for International Students (2020)

I. Introduction

Information Engineering is a new and promising discipline. It is developed as multiple areas involving signal and information processing technology, communication technology, and computer science rapidly penetrate into traditional information technology (IT) industries. In China, information technology industry is currently the most active and fast-growing profession. This area is deeply involved in international technology competition now, and has also globally become the most vital engine of social and economic productivity and development. Recently, with the increasing demand on the eco-friendly, integrated, and smart information system, professional talents in information engineering are deeply in need.

II. Objectives and Learning Outcomes

Attributes Information Engineering alumni should demonstrate 5 years after graduation:

Technical Skills: are technically competent to conduct research and development in the industry and universities in the broad fields of Electronics and Information Engineering in general and Information Engineering in particular.

Engineering Ethos: are able to think critically and creatively, use engineering principles to embrace challenging engineering and non-engineering problems encountered at work, apply an analytic mindset, make informed decisions and provide innovative solutions.

Attitude: are self-motivated with a desire for lifelong learning to adapt to the fast changing environment, able to operate with integrity and responsibility, have optimism and composure under tight schedule, and committed to make a positive impact in society locally and globally.

Leadership: are effective communicators, well-prepared to advance towards leadership positions, capitalize the individual strengths of team members, and nurture the team to achieve goals.

Student Outcomes (SOs) that prepare graduates to enter the professional practice of engineering:

SO 1: an ability to identify, formulate, and solve complex engineering problems¹ by applying principles of engineering, science, and mathematics.

SO 2: an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

SO 3: an ability to communicate effectively with a range of audiences.

SO 4: an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

SO 5: an ability to function effectively on a team whose members together provide leadership,

create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

SO 6: an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

SO 7: an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

SO 8: knowledge of probability and statistics including applications, differential and integral calculus, sciences, engineering sciences and computing science and application to analyze and design complex information engineering systems.

SO 9: knowledge and application of advanced mathematics, such as differential equations, linear algebra, and complex variable.

SO 10: knowledge and application of information processing methods.

III. Study Length and Graduation Requirements

Study length: 4 years

Degree conferred: Bachelor of Engineering

The minimum credit requirement for graduation: 137.5 credits (not including English courses);

| Category | Module | Minimum Credit Requirement |
|--|--|----------------------------|
| General Education (GE) Required Courses (48 credits) | Science | 28 |
| | Physical Education | 4 |
| | Chinese Languages & Culture | 16 |
| General Education (GE) Elective Courses (13 credits) | Humanities | 4 |
| | Social Sciences | 4 |
| | Arts | 2 |
| | Science | 3 |
| Major Course (76.5 credits) | Major Foundational Courses | 25 |
| | Major Core Courses | 25.5 |
| | Major Elective Courses | 16 |
| | Internship and Undergraduate Thesis / Projects | 10 |
| Total (not including English courses) | | 137.5 |

IV. Discipline

Information Engineering

V. Main Courses

Core courses include Fundamentals of Electric Circuits, Analog Circuits, Analog Circuits Laboratory, Digital Circuits, Digital Circuits Laboratory, Signals and Systems, Communication Principles, Engineering Electromagnetics, Probability and Statistics, Data Structures and Algorithm Analysis B, Frontier Seminars in Modern Electronic Science and Technology I/II/III, Wireless Communications, Computer Networks B, Digital Signal Processing, Digital Image Processing, Speech Signal Processing, DSP Design and Simulation, Digital System Design, Advanced Electronic Science Experiment I/II/III etc.

VI. Practice-Based Courses

Core practical training includes Industrial Practice, Advanced Electronic Science Experiment I (Outstanding student can participate in research project supervised by his/her academic professor), and all sorts of domestic and international academic competitions. See the table 3.

VII. Pre-requisites for Major Declaration

| Major Declaration Time | Course Code | Course Name | Prerequisite |
|--|-------------|--|------------------|
| Declare major at the end of First Year | MA107A | Linear Algebra A | NA |
| | MA101B | Calculus I A | NA |
| | MA102B | Calculus II A | MA101B |
| | PHY103B | General Physics B (I) | NA |
| | PHY105B | General Physics B (II) | PHY103B |
| | CS102A | Introduction to Computer Programming A | NA |
| | EE104 | Fundamentals of Electric Circuits | MA101B MA107A |
| Notes: At the end of First Year, In addition to the above courses, students must pass the interview. | | | |
| Declare major at the end of Second Year | MA107A | Linear Algebra A | NA |
| | MA101B | Calculus I A | NA |
| | MA102B | Calculus II A | MA101B |
| | PHY103B | General Physics B (I) | NA |
| | PHY105B | General Physics B (II) | PHY103B |
| | CS102A | Introduction to Computer Programming A | NA |
| | EE104 | Fundamentals of Electric Circuits | MA101B MA107A |
| | EE205 | Signals and Systems | MA101B |

VIII. Requirements for GE Required Courses

(I) Science Module

| Course Code | Course Name | Credit | Lab Credits | Hours/week | Term | Language Instruction | Prerequisite | Dept |
|-------------|--|--------|-------------|------------|-----------|----------------------|---------------------|------|
| MA101B | Calculus I A | 4 | | 4 | Spr/Fa II | B/E | NA | MA |
| MA102B | Calculus II A | 4 | | 4 | Spr/Fa II | B/E | Calculus I A | MA |
| MA107A | Linear Algebra A | 4 | | 4 | Spr/Fa II | B/E | NA | MA |
| PHY103B | General Physics B (I) | 4 | | 4 | Spr/Fa II | B/E | NA | PHY |
| PHY105B | General Physics B (II) | 4 | | 4 | Spr/Fa II | B/E | General Physics I B | PHY |
| BIO102B | Introduction to Life Science | 3 | | 3 | Spr/Fa II | B/E | NA | BIO |
| CS102A | Introduction to Computer Programming A | 3 | 1 | 4 | Spr/Fa II | B/E | NA | CS |
| PHY104B | Experiments of Fundamental Physics | 2 | 2 | 4 | Spr/Fa II | B/E | NA | PHY |
| Total | | 28 | 3 | 31 | | | | |

(II) Physical Education

| Course Code | Course Name | Credits | Hours/week | Terms | Instruction language | Prerequisite | Dept. |
|-------------|-------------------------|---------|------------|-------|----------------------|--------------|-----------|
| GE131 | Physical Education I | 1 | 2 | Fall | C | NA | PE Center |
| GE132 | Physical Education II | 1 | 2 | Spr | C | NA | |
| GE231 | Physical Education III | 1 | 2 | Fall | C | NA | |
| GE232 | Physical Education IV | 1 | 2 | Spr | C | NA | |
| GE331 | Physical Education V | 0 | / | Fall | C | NA | |
| GE332 | Physical Education VI | 0 | / | Spr | C | NA | |
| GE431 | Physical Education VII | 0 | / | Fall | C | NA | |
| GE432 | Physical Education VIII | 0 | / | Spr | C | NA | |
| Total | | 4 | 8 | | | | |

Note: All physical education courses are general required courses. For Semester 1-4, each course (GE131, GE132, GE231, GE232) counted as 1 credit; for semester 5-8, (GE331, GE332, GE431, GE432) are extracurriculum courses without no credits, details can be referred to Physical Education Curriculum Program of Sustech.

(III) Chinese Languages & Culture

| Course Code | Course Name | Credit | Hours/week | Term | Language Instruction | Prerequisite | Dept |
|-------------|-------------------------|--------|------------|----------|----------------------|--------------|---------------------|
| CLE008 | Elementary Chinese I | 2 | 4 | 1/Fall | B | NA | CLE |
| CLE009 | Elementary Chinese II | 2 | 4 | 1/Spr | B | CLE008 | |
| CLE027 | Intermediate Chinese I | 2 | 4 | 2/Fall | B | CLE009 | |
| CLE028 | Intermediate Chinese II | 2 | 4 | 2/Spr | B | CLE027 | |
| CLE031 | Advanced Chinese I | 2 | 4 | 3/Fall | B | CLE028 | |
| CLE032 | Advanced Chinese II | 2 | 4 | 3/Spr | B | CLE031 | |
| CLE033 | Chinese Culture | 2 | 2 | Spr/Fall | B/E | NA | CLE/ HUM/ SSC |
| CLE034 | Chinese History | 2 | 2 | Spr/Fall | B/E | NA | |

(IV) English Language

Students will undertake the English Placement Test and be placed into three levels according to the result of the test and their performance in the National College Entrance Exam. Students at different levels are required to take the courses with a different credit value in total.

Level A: 6 credits; SUSTech English III, and English for Academic Purposes

Level B: 10 credits; SUSTech English II, SUSTech English III, and English for Academic Purposes

Level C: 14 credits; SUSTech English I, SUSTech English II, SUSTech English III, and English for Academic Purposes.

| Course Code | Course Name | Credit | Hours/week | Language Instruction | Prerequisite | Dept |
|-------------|-------------------------------|--------|------------|----------------------|--------------|------|
| CLE021 | SUSTech English I | 4 | 4 | E | NA | CLE |
| CLE022 | SUSTech English II | 4 | 4 | E | CLE021 | |
| CLE023 | SUSTech English III | 4 | 4 | E | CLE022 | |
| CLE030 | English for Academic Purposes | 2 | 2 | E | CLE023 | |

IX Requirements for of GE Elective Courses

(I) Students are required to complete 4 credits for the Humanities Module and Social Sciences Module respectively, and 2 credits for the Music and Art Module. In particular, a course with contents of Ethics of Science and Technology or Engineering Ethics is compulsory, and the credits of the course are counted to the Social Sciences Module. (Information about the available courses and the instruction language will be announced before the course selection session).

(II) Students are required to complete 3 credits for Science Module

| Course Code | Course Name | Credit | Lab Credits | Hours/week | Term | Language Instruction | Prerequisite | Dept |
|-------------|-----------------------|--------|-------------|------------|----------|----------------------|---------------------|------|
| CH101B | General Chemistry B | 3 | | 3 | Fall/Spr | 1/ Fall/Spr | NA | CH |
| CS201 | Discrete Mathematics | 3 | | 3 | Fall/Spr | 2/ Spr | MA102B MA107A | CS |
| CS202 | Computer Organization | 3 | 1 | 4 | Spr | 2/ Spr | CS207or EE202-17 | CS |
| CS205 | C/C++ Program Design | 3 | 1 | 4 | Fall/Spr | 2/ Fall | NA | CS |
| Total | | 12 | 2 | 14 | | | | |

X. Major Course Arrangement

Table 1: Major Required Course (Foundational and Core Courses)

| Course Category | Course Code | Course Name | Credits | Lab Credits | Hours/week | Terms | take the course Advised term to | language Instruction | Prerequisite | Dept. |
|----------------------------|--|---|---------|-------------|------------|----------|---------------------------------|-------------------------|----------------------------|-------|
| Major Foundational Courses | EE104 | Fundamentals of Electric Circuits | 2 | | 2 | Spr/Fall | 1/ Spr | B/E | MA101B MA107A | EE |
| | EE201-17 | Analog Circuits | 3 | | 3 | Spr/Fall | 2/ Fall | B/E | PHY105B EE104 | EE |
| | EE201-17 L | Analog Circuits Laboratory | 1 | 1 | 2 | Spr/Fall | 2/ Fall | B/E | EE201-17 | EE |
| | EE202-17 | Digital Circuits | 3 | | 3 | Spr/Fall | 2/ Spr | B/E | PHY105B | EE |
| | EE202-17 L | Digital Circuits Laboratory | 1 | 1 | 2 | Spr/Fall | 2/ Spr | B/E | EE202-17 | EE |
| | EE205 | Signals and Systems | 3 | 1 | 4 | Spr/Fall | 2/ Fall | B/E | MA101B | EE |
| | EE206 | Communication Principles | 3 | 1 | 4 | Spr | 2/ Spr | E | EE205 | EE |
| | EE208 | Engineering Electromagnetics | 3 | 1 | 4 | Spr/Fall | 2/ Spr | B | MA107A EE104 | EE |
| | MA212 | Probability and Statistics | 3 | | 3 | Spr | 2/ Spr | B | MA102B | MA |
| | CS203B | Data Structures and Algorithm Analysis B | 3 | 1 | 4 | Fall | 2/ Fall | B | CS102A | CS |
| | Total | | | 25 | 6 | 31 | | | | |
| Major Core Courses | EE301 | Frontier Seminars in Modern Electronic Science and Technology I | 1 | | 1 | Fall | 3/ Fall | B | EE201-17 or EE202-17 | EE |
| | EE302 | Frontier Seminars in Modern Electronic Science and Technology II | 1 | | 1 | Spr | 3/ Spr | B | EE201-17 or EE202-17 | EE |
| | EE313 | Wireless Communications | 3 | 1 | 4 | Fall | 3/ Fall | B | EE206 | EE |
| | EE317 | Advanced Electronic Science Experiment I | 1 | 1 | 2 | Fall | 3 / Fall | B | EE201-17o r EE202-17 | EE |
| | EE318 | Advanced Electronic Science Experiment II | 1 | 1 | 2 | Spr | 3 / Spr | B | EE201-17o r EE202-17 | EE |
| | CS305B | Computer Networks B | 3 | 1 | 4 | Spr | 3/ Spr | E | CS102A | CS |
| | EE323 | Digital Signal Processing | 3 | 1 | 4 | Fall | 3/ Fall | E | EE205 | EE |
| | EE326 | Digital Image Processing | 3 | 1 | 4 | Spr | 3/ Spr | E | EE205 | EE |
| | EE328 | Speech Signal Processing | 3 | 1 | 4 | Spr | 3/ Spr | E | EE323 | EE |
| | EE330 | DSP Design and Simulation | 1.5 | 1.5 | 3 | Spr | 3/ Spr | C | EE323 | EE |
| | EE332 | Digital System Design | 3 | 1 | 4 | Spr | 3/ Spr | E | EE202-17 | EE |
| | EE401 | Frontier seminars in modern electronic science and technology III | 1 | | 1 | Fall | 4/ Fall | B | EE201-17 or EE202-17 | EE |
| EE405 | Advanced Electronic Science Experiment III | 1 | 1 | 2 | Fall | 4 / Fall | B | EE201-17o r EE202-17 | EE | |

| | | | | | | | | | | |
|--|-------|--------------------------------|------|------|----|-----------|-------------|----|----|----|
| | | Total | 25.5 | 10.5 | 36 | | | | | |
| Practice | EE470 | Internship | 2 | 2 | 16 | Smr | 3/Smr | NA | NA | EE |
| | EE490 | Undergraduate Thesis/Projects* | 8 | 8 | 8 | Fall& Spr | 4/Fall& Spr | NA | NA | EE |
| | | Total | 10 | 10 | 24 | | | | | |
| Notes: 1.Students who have completed Comprehensive Design I &II (COE491 & COE492)are not required to take the Graduation Projects/Thesis(EE490). | | | | | | | | | | |

Table 2: Major Elective Courses

| Course Code | Course Name | Credits | Lab Credits | Hours/week | Terms | take the course Advised term to | language Instruction | Prerequisite | Dept. |
|-------------|--|---------|-------------|------------|-----------|---------------------------------|----------------------|-------------------|-------|
| EE106 | Introduction to Optoelectronic | 2 | | 2 | Spr | 1/ Spr | B | NA | EE |
| EE203 | Solid-state Electronics | 3 | | 3 | Spr/Fall | 2/ Fall | B | PHY105B | EE |
| EE204 | Introduction to Semiconductor Devices | 3 | 1 | 4 | Spr/Fall | 2/ Spr | B | EE203 | EE |
| EE210 | Fundamentals of Optics | 3 | | 3 | Spr/Fal | 2/ Spr | B | PHY105B | EE |
| EE303 | Fundamentals of Optoelectronic Technology | 3 | 1 | 4 | Fall | 2/ Fall | B | PHY105B | EE |
| EE304 | Integrated Circuit Design | 3 | 2 | 5 | Spr | 3/Spr | E | EE202-17 EE204 | EE |
| EE305 | Introduction to VLSI technology | 3 | 1 | 4 | Fall | 3/ Fall | E | EE203 | EE |
| EE306 | Introduction to MEMS | 3 | 1 | 4 | Spr | 3/ Spr | E | PHY105B | EE |
| EE307 | Antennas and Radio Propagation | 3 | 1 | 4 | Spr | 3/ Spr | E | EE208 | EE |
| EE308 | Fiber Communication Principles and Techniques | 3 | 1 | 4 | Spr | 3/ Spr | B | MA102B | EE |
| EE309 | Introduction to Semiconductor Optics | 3 | | 3 | Fall | 3/ Fall | B | MA102B EE203 | EE |
| EE310 | Principles and Technologies of Lasers | 3 | | 3 | Spr | 3/ Spr | B | MA102B EE210 | EE |
| EE311 | Optical Design | 3 | 1 | 4 | Fall | 3/ Fall | B | EE210 | EE |
| EE312 | Design of Modern Communication Systems | 3 | 1 | 4 | Spr | 3/ Spr | B | EE206 EE313 | EE |
| EE316 | Microwave Engineering | 3 | 1 | 4 | Fall | 3/ Fall | E | EE201-17 EE208 | EE |
| EE320-15 | Integrated Circuit Fabrication Laboratory | 3 | 1.5 | 4.5 | Spr /Fall | 3/ Spr /Fall | C | EE204 | EE |
| EE321 | Spectral Technology and Application | 3 | | 3 | Spr | 3/Spr | B | NA | EE |
| EE322 | Optoelectronics Devices Fabrication Laboratory | 2 | 1 | 3 | Spr | 3/ Spr | B | EE204 | EE |
| EE325 | Nonlinear Optimization Techniques for Electrical Engineering | 3 | 1 | 4 | Fall | 3/ Fall | B | MA102B MA107A | EE |
| EE334 | Advanced Integrated Circuit Design: Machine Learning on Chip | 3 | 1 | 4 | Spr | 3/ Spr | E | EE202-17 | EE |
| EE335 | Liquid Crystal Optoelectronics | 3 | 1 | 4 | Fall | 3/ Fall | C | EE210 | EE |
| EE337 | Analog Integrated Circuit Design | 3 | 1 | 4 | Fall | 3/ Fall | B | EE201-17 EE204 | EE |
| EE339 | Analog IC Layout Design | 1 | 1 | 2 | Fall | 3/ Fall | B | EE304 | EE |
| EE340 | Statistical Learning for Data Science | 3 | 1 | 4 | Spr | 3/ Spr | B | MA107A | EE |
| EE341 | Advanced Integrated Circuit Design: Microprocessor | 3 | 1 | 4 | Fall | 3/Fall | B | EE202-17 | EE |
| EE342 | Sensors and Applications | 3 | | 3 | Spr | 3/ Spr | C | PHY103B | EE |

| | | | | | | | | | |
|----------|--|------|-----|------|------|----------|---|----------------------------|----|
| EE345 | Introduction of Wide Bandgap Semiconductors | 3 | | 3 | Fall | 3/Fall | B | EE203 or EE204 | EE |
| EE402 | Frontier Seminars in Modern Electronic Science and Technology IV | 1 | | 1 | Spr | 4/ Spr | B | EE201-17 or EE202-17 | EE |
| EE404 | Organic Electronics | 2 | | 2 | Spr | 4 / Spr | B | 无 | EE |
| EE405 | Advanced Electronic Science Experiment III | 1 | 1 | 2 | Fall | 4/ Fall | B | EE201-17 or EE202-17 | EE |
| EE411 | Information theory and coding | 2 | | 2 | Fall | 4/ Fall | B | MA212 | EE |
| EE417 | Communications System Design II | 2 | 2 | 4 | Fall | 4/ Fall | E | EE316 EE206 EE307 | EE |
| EE423-14 | Pattern Recognition | 3 | 1 | 4 | Fall | 4/ Fall | B | EE323 EE326 | EE |
| EE429 | Image and Video Processing | 3 | 1 | 4 | Fall | 4/ Fall | E | EE205 MA107A MA212 | EE |
| EE431 | BioMEMS and Lab-on-a-Chip | 3 | | 3 | Fall | 4/ Fall | E | PHY105B | EE |
| EE433 | Modern Electric Vehicle Technologies | 2 | | 2 | Fall | 4/ Fall | B | EE208 | EE |
| EE435 | Semiconductor Information Display Technologies | 3 | | 3 | Fall | 4/ Fall | B | EE203 EE204 | EE |
| EES101 | Brief Introduction of "Creative Electronic Design I" | 1 | 05 | 6 | Smr | 1/ Smr | C | PHY105B | EE |
| EES102 | DIY Project: Assembling an iPhone6 | 2 | 2 | 8 | Smr | 1/ Smr | C | EE104 | EE |
| EES201 | Brief Introduction of "Creative Electronic Design II" | 05 | 05 | 4 | Smr | 2/ Smr | C | NA | EE |
| EES202 | Design based on LabVIEW Programming | 1 | 1 | 8 | Smr | 2/ Smr | C | NA | EE |
| EES204 | Fiber Sensor Design | 1 | 1 | 8 | Smr | 2/ Smr | C | NA | EE |
| CS301 | Embedded System and Microcomputer Principle | 3 | 1 | 4 | Fall | 3/ Fall | E | CS207or EE202-17 | CS |
| CS303B | Artificial Intelligence B | 3 | 1 | 4 | Fall | 3/ Fall | B | CS203B CS102A MA212 | CS |
| CS307 | Principles of Database Systems | 3 | 1 | 4 | Fall | 3/ Fall | B | NA | CS |
| CS330 | Multimedia Information Processing | 3 | 1 | 4 | Spr | 3/ Spr | B | NA | CS |
| CS403 | Cryptography and Network Security | 2 | | 2 | Fall | 4/ Fall | B | CS201 MA212 CS203B | CS |
| CS405 | Machine Learning | 3 | 1 | 4 | Fall | 4 / Fall | B | MA212 MA107A | CS |
| MA109 | Advanced Linear Algebra | 4 | | 4 | Spr | 1/ Spr | B | MA107A | MA |
| MA201b | Ordinary Differential Equations B | 4 | | 4 | Fall | 2/ Fall | B | MA102B | MA |
| MA208 | Applied Stochastic Processes | 3 | | 3 | Spr | 2/ Spr | E | MA213-16 MA212 MA109 | MA |
| Total | | 1315 | 345 | 1895 | | | | | |

Table 3: Overview of Practice-Based Courses

| Course Code | Course Name | Credits | Lab Credits | Hours/week | Terms | Take the course Advised term to | language Instruction | Prerequisite | Dept. |
|---------------|--|---------|-------------|------------|--------------|---------------------------------|----------------------|-------------------------|-------|
| EE201-1 7L | Analog Circuits Laboratory | 1 | 1 | 2 | Spr/ Fall | 2/ Fall | B/E | EE201-17 | EE |
| EE202-1 7L | Digital Circuits Laboratory | 1 | 1 | 2 | Spr/ Fall | 2/ Spr | B/E | EE202-17 | EE |
| EE204 | Introduction to Semiconductor Devices | 3 | 1 | 4 | Spr/ Fall | 2/ Spr | B/E | EE203 | EE |
| EE205 | Signals and Systems | 3 | 1 | 4 | Spr/ Fall | 2/ Fall | B/E | MA101B | EE |
| EE206 | Communication Principles | 3 | 1 | 4 | Spr | 2/ Spr | B/E | EE205 | EE |
| EE208 | Engineering Electromagnetics | 3 | 1 | 4 | Spr/ Fall | 2/ Spr | B | MA103A EE104 | EE |
| EE303 | Fundamentals of Optoelectronic Technology | 3 | 1 | 4 | Fall | 2/ Fall | B | PHY105B | EE |
| EE304 | Integrated Circuit Design | 3 | 2 | 5 | Fall | 3/ Fall | E | EE202-17 EE204 | EE |
| EE305 | Introduction to VLSI technology | 3 | 1 | 4 | Fall | 3/ Fall | E | EE203 | EE |
| EE306 | Introduction to MEMS | 3 | 1 | 4 | Spr | 3/ Spr | E | PHY105B | EE |
| EE307 | Antennas and Radio Propagation | 3 | 1 | 4 | Spr | 3/ Spr | E | EE208 | EE |
| EE308 | Fiber Communication Principles and Techniques | 3 | 1 | 4 | Spr | 3/ Spr | B | MA102B | EE |
| EE311 | Optical Design | 3 | 1 | 4 | Fall | 3/ Fall | B | EE210 | EE |
| EE312 | Design of Modern Communication Systems | 3 | 1 | 4 | Spr | 3/ Spr | B | EE206 EE313 | EE |
| EE313 | Wireless Communications | 3 | 1 | 4 | Fall | 3/ Fall | B | EE206 | EE |
| EE316 | Microwave Engineering | 3 | 1 | 4 | Fall | 3/ Fall | E | EE201-17 EE208 | EE |
| EE317 | Advanced Electronic Science Experiment I | 1 | 1 | 2 | Fall | 3/ Fall | B | EE201-17 or EE202-17 | EE |
| EE318 | Advanced electronic science experiment II | 1 | 1 | 2 | Spr | 3/ Spr | B | EE201-17 or EE202-17 | EE |
| EE320-1 5 | Integrated Circuit Fabrication Laboratory | 3 | 1.5 | 4.5 | Spr/ Fall | 3/ Spr/Fall | C | EE204 | EE |
| EE322 | Optoelectronics Devices Fabrication Laboratory | 2 | 1 | 3 | Spr | 3/ Spr | B | EE204 | EE |
| EE323 | Digital Signal Processing | 3 | 1 | 4 | Fall | 3/ Fall | E | EE205 | EE |
| EE325 | Nonlinear Optimization Techniques for Electrical Engineering | 3 | 1 | 4 | Fall | 3/ Fall | B | MA102B MA103A | EE |
| EE326 | Digital Image Processing | 3 | 1 | 4 | Spr | 3/ Spr | E | EE205 | EE |
| EE328 | Speech Signal Processing | 3 | 1 | 4 | Spr | 3/ Spr | E | EE323 | EE |
| EE330 | DSP Design and Simulation | 1.5 | 1.5 | 3 | Spr | 3/ Spr | C | EE323 | EE |
| EE332 | Digital System Design | 3 | 1 | 4 | Spr | 3/ Spr | E | EE202-17 | EE |
| EE334 | Advanced Integrated Circuit Design: Machine Learning on Chip | 3 | 1 | 4 | Spr | 3/ Spr | E | EE202-17 | EE |

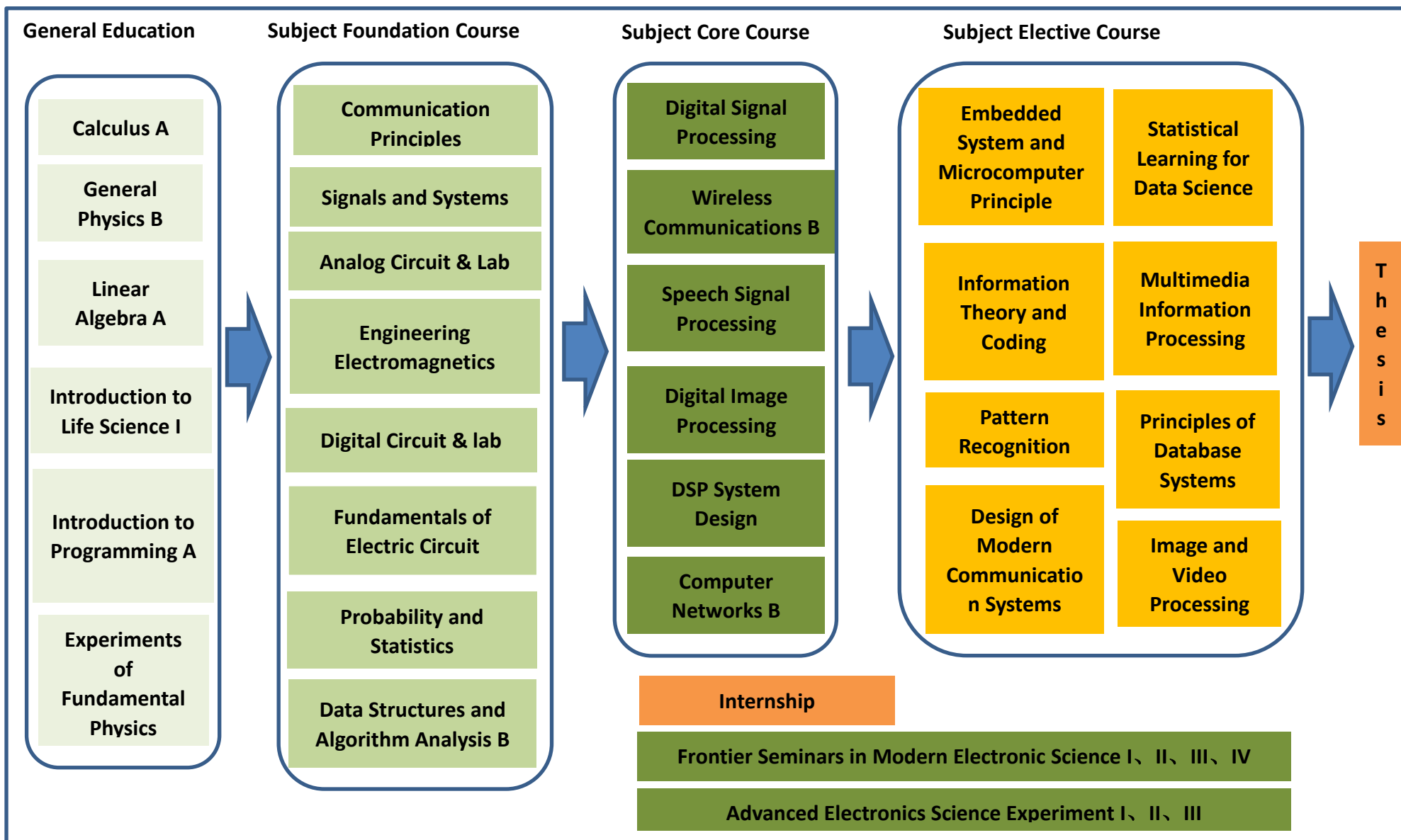
| | | | | | | | | | |
|--------------|---|------------|-----------|-------------|--------------|------------|----|---------------------------|----|
| EE335 | Liquid Crystal Optoelectronics | 3 | 1 | 4 | Fall | 3/ Fall | C | EE210 | EE |
| EE336 | Fundamentals of Photovoltaics | 3 | 1 | 4 | Fall | 3/ Fall | E | EE204 | EE |
| EE337 | Analog Integrated Circuit Design | 3 | 1 | 4 | Fall | 3/ Fall | B | EE201-17 EE204 | EE |
| EE339 | Analog IC Layout Design | 1 | 1 | 2 | Fall | 3/ Fall | B | EE304 | EE |
| EE340 | Statistical Learning for Data Science | 3 | 1 | 4 | Spr | 3/ Spr | B | MA107A | EE |
| EE341 | Advanced Integrated Circuit Design: Microprocessor | 3 | 1 | 4 | Fall | 3/ Fall | B | EE202-17 | EE |
| EE405 | Advanced Electronic Science Experiment III | 1 | 1 | 2 | Fall | 4/ Fall | B | EE201-17 or EE202-17 | EE |
| EE417 | Communications System Design II | 2 | 2 | 4 | Fall | 4/ Fall | E | EE316 EE206 EE307 | EE |
| EE423-1 4 | Pattern Recognition | 3 | 1 | 4 | Fall | 4/ Fall | B | EE323 EE326 | EE |
| EE429 | Image and Video Processing | 3 | 1 | 4 | Fall | 4/ Fall | E | EE205 MA103A MA212 | EE |
| EE470 | Internship | 2 | 2 | 16 | Smr | 3/Smr | NA | NA | EE |
| EE490 | Undergraduate Thesis/Projects | 8 | 8 | 8 | Fall/ Spr | 4/Fall/Spr | NA | NA | EE |
| EES101 | Brief Introduction of "Creative Electronic Design I" | 1 | 0.5 | 6 | Smr | 1/ Smr | C | PHY105B | EE |
| EES102 | DIY Project: Assembling an iPhone6 | 2 | 2 | 8 | Smr | 1/ Smr | C | EE104 | EE |
| EES201 | Brief Introduction of "Creative Electronic Design II" | 0.5 | 0.5 | 4 | Smr | 2/ Smr | C | NA | EE |
| EES202 | Design based on LabVIEW Programming | 1 | 1 | 8 | Smr | 2/ Smr | C | NA | EE |
| EES204 | Fiber Sensor Design | 1 | 1 | 8 | Smr | 2/ Smr | C | NA | EE |
| CS202 | Computer Organization | 3 | 1 | 4 | Spr | 2/Spr | B | CS207 | CS |
| CS203B | Data Structures and Algorithm Analysis B | 3 | 1 | 4 | Fall | 2/ Fall | B | CS102A | CS |
| CS205 | C/C++ Program Design | 3 | 1 | 4 | Spr/ Fall | 2/Fall | E | NA | CS |
| CS301 | Embedded System and Microcomputer Principle | 3 | 1 | 4 | Fall | 3/ Fall | E | CS207 or EE202-17 | CS |
| CS303B | Artificial Intelligence B | 3 | 1 | 4 | Fall | 3/ Fall | B | CS203B CS102A MA212 | CS |
| CS305B | Computer Networks B | 3 | 1 | 4 | Fall | 3/ Fall | B | CS102A | CS |
| CS307 | Principles of Database Systems | 3 | 1 | 4 | Fall | 2/ Fall | B | NA | CS |
| CS330 | Multimedia Information Processing | 3 | 1 | 4 | Spr | 3/Spr | B | NA | CS |
| CS405 | Machine Learning | 3 | 1 | 4 | Fall | 4 /Fall | B | MA212 MA103A | CS |
| Total | | 135 | 63 | 2255 | | | | | |

Table 4: Overview of Course Hours and Credits

| Course Category | Total Course Hours | Total Credits | Credit Requirements | Percentage of the Total* |
|---|--------------------|---------------|---------------------|--------------------------|
| General Education (GE) Required Courses (not including English courses) | 800 | 48 | 48 | 35 |
| General Education (GE) Elective Courses | | | 13 | 9 |
| Major Foundational Courses | 496 | 25 | 25 | 18 |
| Major Core Courses | 576 | 25.5 | 25.5 | 19 |
| Major Elective Courses | 3032 | 131.5 | 16 | 12 |
| Internship and Undergraduate Thesis/Projects | 约 320 | 10 | 10 | 7 |
| Total (not including English courses) | 4904 | 240 | 137.5 | 100 |

* Percentage of the total= Credit requirements of each line / Total credit requirements

Curriculum Structure of Information Engineering



Note: The Subject Elective course lists include only part of the courses, see more in Program.