Program of Communication Engineering for International Students

(2019)

I. Introduction

Communication engineering, especially wireless communications engineering, has become extremely important throughout the world and in particular for Shenzhen, which is recognized as a world-class center of communication industry. With the increasing demand on mobile data access, the development of next generation broadband communication systems has been initiated, which would boost up career opportunity in related academic and industrial fields. The offered 4-year undergraduate program on communication engineering is tailored for the most cutting-edge areas in communication engineering. In addition to lecturers and labs, students are also encouraged to work with supervisors on real research problems as early as the second year of the program. The key areas under study include: classic and modern communication theory, microwave engineering, wireless communications, optical communications, computer networks, embedded systems, microwave imaging, etc.

II. Objectives and Learning Outcomes

Attributes Communication 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 Communication 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 problems 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 electrical and electronic devices, software, and systems containing hardware and software components.

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

SO 10: knowledge and application of communication theory and systems, and computer networks.

SO 11: an ability of analyze, design and develop communication systems and computer networks.

III. Study Length and Graduation Requirements

Study length: 4 years

Degree conferred: Bachelor of Engineering

The minimum credit requirement for graduation: 141 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 (16 credits)	Humanities	4
	Social Sciences	4
	Arts	2
	Science	6
Major Course (77credits)	Major Foundational Courses	32
	Major Core Courses	15
	Major Elective Courses	18
	Research Projects, Internship and Undergraduate Thesis / Projects	12
Total (not including English courses)		141

IV. Discipline

Communication Engineering

V. Main Courses

Core courses include Fundamentals of Electric Circuits, Analog Circuits, Analog Circuits Laboratory, Digital Circuits, Digital Circuits Laboratory, Mathematical Methods in Physics, Signals and Systems, Communication Principles, Engineering Electromagnetics, Probability and Statistics, Data Structures and Algorithm Analysis B, Microwave Engineering, Frontier Seminars in Modern Electronic Science and Technology I/II/III, Antennas and Radio Propagation, Wireless Communications, Computer Networks, Design of Modern Communication Systems etc.

VI. Practice-Based Courses

Core practical training includes Industrial practice, Advanced Electronic Science Experiment (It is a subject elective course. Outstanding students after their junior year, can join research working by their professor), and all sorts of domestic and international academic and innovative competitions. See the table 3 of Major Course Arrangement.

VII. Pre-requisites for Major Declaration

Major Declaration Time	Course Code	Course Name	Prerequisite
Declare major at the end of First Year	MA101B	Calculus I A	NA
	MA102B	Calculus II A	MA101B
	MA107A	Linear Algebra A	NA
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	MA102B	Calculus II A	MA101B
	EE205	Signals and Systems	MA101B
	EE208	Engineering Electromagnetics	MA107A EE104

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/ Fall	B/E	NA	MATH
MA102B	Calculus II A	4		4	Spr/ Fall	B/E	Calculus I A	MATH
MA107A	Linear Algebra I-A	4		4	Spr/ Fall	B/E	NA	MATH
PHY103B	General Physics B (I)	4		4	Spr/ Fall	B/E	NA	PHY
PHY105B	General Physics B (II)	4		4	Spr/ Fall	B/E	General Physics I B	PHY
BIO102B	Introduction to Life Science	3		3	Spr/ Fall	B/E	NA	BIO
CS102A	Introduction to Computer Programming A	3	1	4	Spr/ Fall	B/E	NA	CS
PHY104B	Experiments of Fundamental Physics	2	2	4	Spr/ Fall	B/E	NA	PHY
Total		**28**	**3**	**31**				

(II) Physical Education

Course Code	Course Name	Credit	Lab Credits	Hours/week	Term	Language Instruction	Prerequisite	Dept
GE131	Physical Education I	1		2	1/Fall	C	NA	PE Center
GE132	Physical Education II	1		2	1/Spr	C	NA	
GE231	Physical Education III	1		2	2/Fall	C	NA	
GE232	Physical Education IV	1		2	2/Spr	C	NA	
Total		4		8				

(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	
Total		16	28				

(IV) English Language

All students are required to undertake the English Placement Test before selecting courses, based on which students will be assigned to 3 levels to be ready for the courses with English as the instruction language.

SUSTech English III, English for Academic Purposes are required for Level A.

SUTech English II, SUSTech English III, English for Academic Purposes for Level B.

SUSTech English I, SUSTech English II, SUSTech English III, English for Academic for Level C.

Course Code	Course Name	Credit	Hours/week	Instruction Language	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 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 6 credits for Science Module.

Course Code	Course Name	Credit	Lab Credits	Hours/week	Term	Language Instruction	Prerequisite	Dept
CH101B	General Chemistry B	3		3	Spr/ Fall	B/E	NA	CHEM
CS201	Discrete Mathematics	3		3	Spr	B	MA102B MA107A	CS
CS202	Computer Organization	3	1	4	Spr	B	CS207or EE202-17	CS
CS205	C/C++ Program Design	3	1	4	Spr/ Fall	E	NA	CS
ME102	CAD and Engineering Drawing	3	1.5	4.5	Spr/ Fall	B	NA	ME
Total		15	3.5	18.5				

X. Major Course Arrangement

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

Course Category	Course Code	Course Name	Credit	Lab Credits	Hours/week	Term	Advised term to take the course	Instruction language	Prerequisite	Dept.
Major Foundational Courses	EE104	Fundamentals of Electric Circuits	2		2	Spr /Fall	1/Spr or Fall	B/E	MA101B MA107A	EE
	EE201-17	Analog Circuits	3		3	Fall	2/Fall	C	PHY105B EE104	EE
	EE201-17L	Analog Circuits Laboratory	1	1	2	Fall	2/Fall	B	EE201-17	EE
	EE202-17	Digital Circuits	3		3	Spr /Fall	2/Spr/Fall	B/E	PHY105B	EE
	EE202-17L	Digital Circuits Laboratory	1	1	2	Spr /Fall	2/Spr/Fall	B/E	EE202-17	EE
	PHY203-15	Mathematical Methods in Physics	4		4	Fall	2/Fall	B	MA102BPHY105B MA107A	PHY
	EE205	Signals and Systems	3	1	4	Fall	2/Fall	B	MA101B	EE
	EE206	Communication Principles	3	1	4	Spr	2/Spr	E	EE205	EE
	EE208	Engineering Electromagnetics	3	1	4	Spr	2/Spr	B	MA107A EE104	EE
	MA212	Probability and Statistics	3		3	Spr	2/Spr	B/E	MA102B Or MA102a	MA
	CS203B	Data Structures and Algorithm Analysis B	3	1	4	Fall	2/Fall	E	CS102A	CS
	EE316	Microwave Engineering	3	1	4	Fall	3/Fall	E	EE201-17 EE208	EE
	Total		32	7	39					
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
	EE307	Antennas and Radio Propagation	3	1	4	Spr	3/Spr	E	EE208 EE104	EE
	EE313	Wireless Communications	3	1	4	Fall	3/Fall	E	EE206	EE
	CS305	Computer Networks	3	1	4	Fall	3/Fall	E	CS102A	CS
	EE312	Design of Modern Communication Systems	3	1	4	Spr	3/Spr	B	EE206 EE313	EE

	EE401	Frontier seminars in modern electronic science and technology III	1		1	Fall	4/Fall	B	EE201-17 or EE202-17	EE
	Total		15	4	19					
Practice	EE470	Internship	2	2	16	Smr	3/Smr	NA	NA	EE
	EE480	Research Projects*	2	2				NA	NA	EE
	EE490	Undergraduate Thesis/Projects**	8	8	8	Fall & Spr	4/Fall& Spr	NA	NA	EE
Total			12	12	24					

Notes:

1. Students can choose the term most appropriate for the course of Research Projects based on their study plan, The minimum study load for this course is 64 hours in total, see the Syllabus.

2.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	Credit	Lab Credits	Hours/week	Term	Advised term to take the course	Instruction language	Prerequisite	Dept.
EE106	Introduction to Optoelectronic	2		2	Spr	1/Spr	C	NA	EE
EE203	Solid-state Electronics	3		3	Fall	2/Spr /Fall	B/E	PHY105B	EE
EE204	Introduction to Semiconductor Devices	3	1	4	Spr	2/Spr	B	EE203	EE
EE210	Fundamentals of Optics	3		3	Spr	2/Spr	B	PHY105B	EE
EE303	Fundamentals of Optoelectronic Technology	3	1	4	Fall	3/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	B	EE203	EE
EE306	Introduction to MEMS	3	1	4	Spr	3/Spr	E	PHY105B	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
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
EE320-15	Integrated Circuit Fabrication Laboratory	3	1.5	4.5	Spr /Fall	3/Spr or 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
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	E	MA102B MA107A	EE
EE326	Digital Image Processing	3	1	4	Spr	3/Spr	E	EE205	EE
EE327	Fundamentals of Information Optics	3	1	4	Fall	3/Fall	B	EE205	EE
EE328	Speech Signal Processing	3	1	4	Spr	3/Spr	B	EE323	EE

EE330	DSP Design and Simulation	1.5	1.5	3	Spr	3/Spr	B	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
EE338	Application Specific IC (ASIC) Designs Methodology and Practice	3	1	4	Spr	3/Spr	B	EE201-17 EE202-17 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	B	PHY103B	EE
EE343	Optoelectronic Instrumentation	3	1	4	Fall	3/Fall	B	EE106 or EE204	EE
EE345	Introduction of Wide Bandgap Semiconductors	3		3	Fall	3/Fall	B	EE203 or EE204	EE
EE347	Power Semiconductor Devices and Application	3		3	Fall	3/Fall	B	EE203 or EE204	EE
EE349	Power Semiconductor Devices and Application Laboratory	1	1	2	Fall	3/Fall	B	EE347	EE
EE402	Frontier Seminars in Modern Electronic Science and Technology IV	1		1	Spr	4/Spr	B	EE201-17 or EE202-17	EE
EE403	Introduction to Display and Lighting Technologies	2		2	Fall	4/Fall	B	EE204	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
EE427	Principles of Remote Sensing	2		2	Fall	4/Fall	B	EE323 EE326	EE
EE429	Image and Video Processing	3	1	4	Fall	4/Fall	E	EE205 MA107A MA212	EE
EE431	Bio MEMS 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
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
EES203	Innovation and Entrepreneurship	0.5	0.5	4	smr	2/smr	C	NA	EE
EES204	Fiber Sensor Design	1	1	8	smr	2/smr	C	NA	EE
EES205	Advanced Technology Forecasting	1.5		6	smr	2/smr	E	NA	EE
EES301	Statistical Machine Learning	2		8	smr	3/smr	E	MA107A MA212	EE
EES302	2D Materials: Properties and Devices	2		8	smr	3/smr	E	无	EE
EES303	Convex optimization	2		2	smr	3/smr	E	MA107A;MA215 or MA212	EE
EES305	Electronic Materials	2		2	smr	3/smr	E	NA	EE
BMEB221	Biomedical Instrumentation and Experiment	4	2	6	Spr	2/Spr	C	NA	BMEB
CS208	Algorithm Design and Analysis	3	1	4	Spr	2/Spr	B	CS102A CS203B	CS
CS209A	Computer System Design and Applications A	3	1	4	Spr	1/Spr	E	CS102A or CS102B	CS
CS301	Embedded System and Microcomputer Principle	3	1	4	Fall	3/Fall	B	CS207 or EE202-17	CS
CS302	Operating Systems	3	1	4	Spr	3/Spr	B	CS102A CS203B	CS
CS303B	Artificial Intelligence B	3	1	4	Fall	3/Fall	B	CS203B CS102A MA212	CS
CS306	Data Mining	3	1	4	Spr	3/Spr	B	CS203	CS
CS309	Object-Oriented Analysis and Design	3	1	4	Fall	3/Fall	B	CS203B CS102A	CS
CS401	Intelligent Robotics	3	1	4	Spr	3/Spr	B	CS102A CS203B MA212	CS
CS403	Cryptography and Network Security	2		2	Fall	4/Fall	B	CS201 CS203B MA212	CS
CS405	Machine Learning	3	1	4	Fall	4/Fall	B	MA212 MA107A	CS
CS407	Advanced Computer Networks and Big Data	3	1	4	Fall	4/Fall	B	CS305	CS
MA109	Advanced Linear Algebra	4		4	Spr	1/Spr	B	MA107A	MA
MA110	MATLAB Programming and Application	3	1	4	Spr	1/Spr	B	NA	MA
MA201b	Ordinary Differential Equations B	4		4	Fall	2/Fall	B	MA102B	MA
MA202	Complex Analysis	3		3	Spr	2/Spr	B	MA203AorMA213	MA
MA206	Mathematical Modelling	3		3	Spr	2/Spr	B	MA201a or MA201b	MA
MA208	Basic Stochastic Processes	3		3	Spr	2/Spr	E	MA213MA212 MA109	MA
MA213-16	Real Analysis	5		5	Spr/ Fall	2/Fall	B	MA102B	MA
MA303	Partial Differential Equations	3		3	Fall	3/Fall	B	MA201b	MA
MA305	Numerical Analysis	3		3	Fall	3/Fall	B	MA203AorMA213	MA

MA333	Introduction to Big Data Science	3		3	Fall	3/Fall	B	MA204 orMA212	MA
Total		206	53.5	3025					
Notes: 1. Students are required to complete 18 credits for the Major Elective Courses.									

Table 3: Overview of Practice-Based Courses

Course Code	Course Name	Credit	Lab Credits	Hours/week	Term	Advised term to take the course	Instruction language	Prerequisite	Dept.
EE201-17L	Analog Circuits Laboratory	1	1	2	Fall	2/Fall	B	EE201-17	EE
EE202-17L	Digital Circuits Laboratory	1	1	2	Spr/ Fall	2/Spr/Fall	B/E	EE202-17	EE
EE204	Introduction to Semiconductor Devices	3	1	4	Spr	2/Spr	B	EE203	EE
EE205	Signals and Systems	3	1	4	Fall	2/Fall	B	MA101B	EE
EE206	Communication Principles	3	1	4	Spr	2/Spr	E	EE205	EE
EE208	Engineering Electromagnetics	3	1	4	Spr	2/Spr	B	MA107A EE104	EE
EE303	Fundamentals of Optoelectronic Technology	3	1	4	Fall	3/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	B	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 EE104	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
EE313	Wireless Communications	3	1	4	Fall	3/Fall	E	EE206	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	EE104 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
EE320-15	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	3	1	4	Fall	3/Fall	E	MA102B MA107A	EE

	Engineering								
EE326	Digital Image Processing	3	1	4	Spr	3/Spr	E	EE205	EE
EE327	Fundamentals of Information Optics	3	1	4	Fall	3/Fall	B	EE205	EE
EE328	Speech Signal Processing	3	1	4	Spr	3/Spr	B	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	Fall	3/Fall	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
EE338	Application Specific IC (ASIC) Designs Methodology and Practice	3	1	4	Spr	3/Spr	B	EE201-17 EE202-17 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
EE343	Optoelectronic Instrumentation	3	1	4	Fall	3/Fall	B	EE106 or EE204	EE
EE349	Power Semiconductor Devices and Application Laboratory	1	1	2	Fall	3/Fall	B	EE347	EE
EE405	Advanced Electronic Science Experiment III	1	1	2	Fall	4/Fall	NA	EE201-17 or EE202-17	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
EE470	Internship	2	2	16	Smr	3/Smr	NA	NA	EE
EE480	Research Projects	2	2				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	PHY102B	EE
EES102	DIY Project: Assembling an iPhone6	2	2	8	Smr	1/Smr	C	EE104	EE

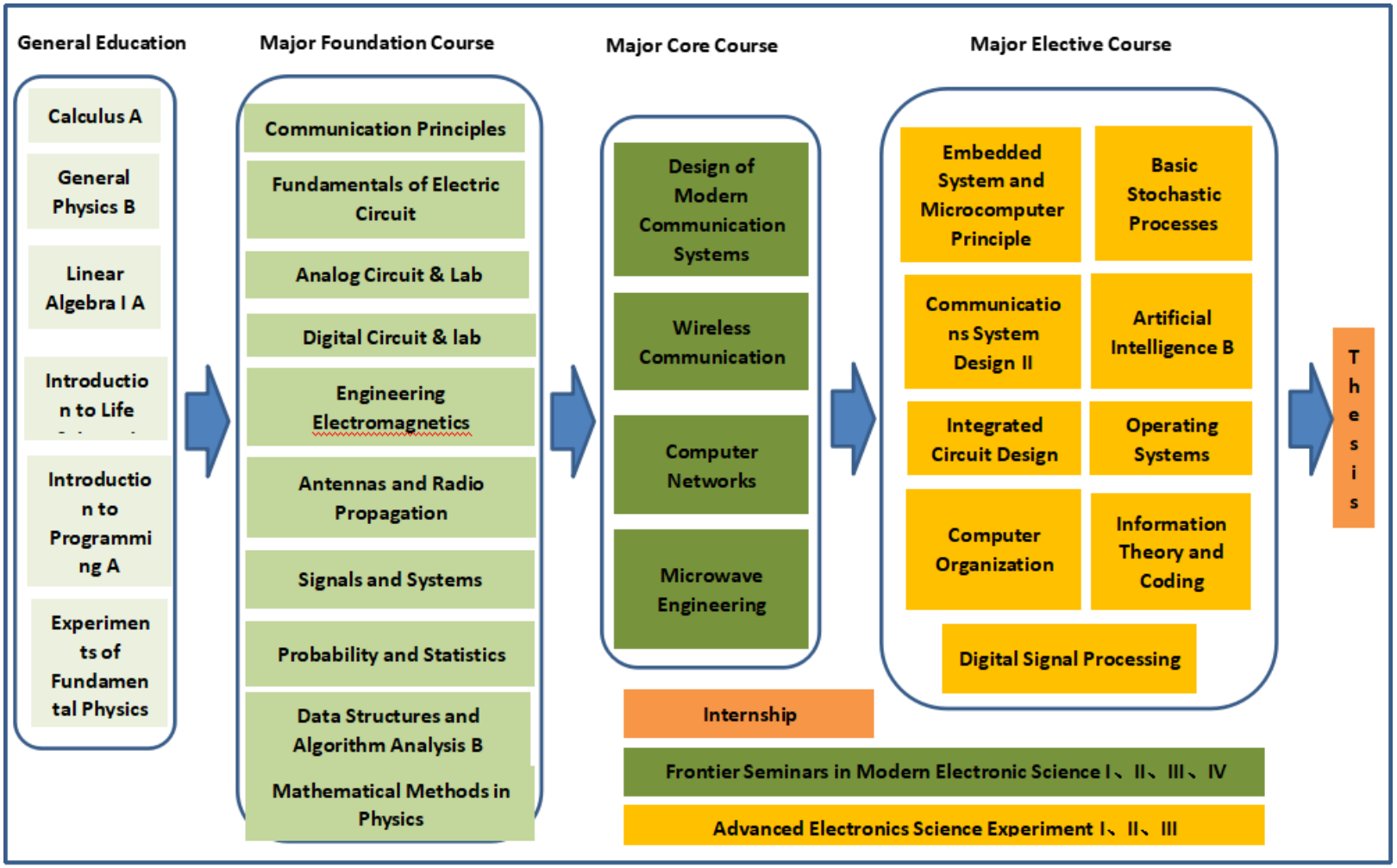
EES201	Brief Introduction of "Creative Electronic Design II"	0.5	0.5	4	Smr	2/Smr	C	NA	EE
EES202	Design based on LabVIEW Programming	1	1	8	Smr	2/Smr	C	NA	EE
EES203	Innovation and Entrepreneurship	0.5	0.5	4	Smr	2/Smr	C	NA	EE
EES204	Fiber Sensor Design	1	1	8	Smr	2/Smr	C	NA	EE
BMEB221	Biomedical Instrumentation	4	2	6	Spr	2/Spr	C	NA	BMEB
CS202	Computer Organization	3	1	4	Spr	2/Spr	B	CS207	CS
CS205	C/C++ Program Design	3	1	4	Spr /Fall	2/Spr/Fall	E	NA	CS
CS203B	Data Structures and Algorithm Analysis B	3	1	4	Fall	2/Fall	E	CS102A	CS
CS301	Embedded System and Microcomputer Principle	3	1	4	Fall	3/Fall	B	CS207	CS
CS302	Operating Systems	3	1	4	Spr	3/Spr	B	CS301	CS
CS303B	Artificial Intelligence B	3	1	4	Fall	3/Fall	E	CS203B CS102A MA212	CS
CS305	Computer Networks	3	1	4	Fall	3/Fall	E	CS102A	CS
CS309	Object-oriented Analysis and Design	3	1	4	Fall	3/Fall	B	CS202 CS203 CS102A	CS
MA110	MATLAB Programming and Application	3	1	4	Spr	1/Spr	B	NA	MA
CS208	Algorithm Design and Analysis	3	1	4	Spr	2/Spr	B	CS102A CS203B	CS
CS209A	Computer System Design and Applications A	3	1	4	Spr	1/Spr	E	CS102A	CS
CS306	Data Mining	3	1	4	Spr	3/Spr	B	CS203	CS
CS401	Intelligent Robotics	3	1	4	Spr	3/Spr	B	CS102A CS203B MA212	CS
CS405	Machine Learning	3	1	4	Fall	4/Fall	B	MA212 MA107A	CS
Total		169.5	77.5	247					

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	34
General Education (GE) Elective Courses			16	11.3
Major Foundational Courses	624	32	32	22.7
Major Core Courses	304	15	15	10.6
Major Elective Courses	4840	206	18	12.8
Research Projects, Internship and Undergraduate Thesis/Projects	380	12	12	8.5
Total (not including English courses)	6948	313	141	100

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

Curriculum Structure of Communication Engineering



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