

信息工程（冯秉铨实验班）

Information Engineering (Innovation Class)

专业代码：080706

学 制：4 年

Program Code:080706

Duration: 4 years

培养目标：

培养知识系统宽厚，具有创新能力和国际视野，能适应经济、科技、社会发展需要和电子信息产业迅猛发展变化的高层次拔尖创新人才。学生毕业后，可以到电信部门、电子工程企业、商业部门、财税、金融和机关、科研机构等单位，从事计算机网络、通信网络，无线通信、光纤通信、电子工程的设计、研究、开发和管理等工作。

Educational Objectives:

We foster high-level top creative talents with broad knowledge system, the innovation ability and international outlook, who can meet the need of economic, technological, social development and the rapid development of electronic information industry. After graduation, students can go to the telecommunications sector, electronic engineering enterprises, business sector, finance and taxation, finance and institutions, research institutions and other units, engaged in computer networks, communications networks, wireless communications, optical fiber communications, electronic engineering design, research, development and management and so on.

毕业要求：

№1.工程知识：掌握扎实的基础知识、专业基本原理、方法和手段，能够将数学、自然科学、本专业基础知识和专业知识用于解决复杂工程问题，并接触和掌握电子行业部分营运知识，为解决企业电子工程实际复杂问题打下知识基础。

№2.问题分析：能够应用数学、自然科学、本专业的基本原理、方法、手段和电子行业营运知识，识别、表达、并通过文献研究分析电子工程中的复杂问题，以获得有效结论。

№3.设计/开发解决方案：能够设计针对电子工程复杂问题的解决方案，设计满足特定需求的电子系统、单元（部件）或工艺流程，并能够在设计环节中体现创新意识，考虑社会、健康、安全、法律、文化以及环境等因素。

№4.研究：能够基于科学原理并采用科学方法对电子工程复杂问题进行研究，包括设计实验、分析与解释数据、并通过信息综合得到合理有效的结论。

№5.使用现代工具：能够针对复杂电子工程问题，开发、选择与使用恰当的技术、资源、现代工程工具和信息技术工具，包括对电子工程复杂问题的预测与模拟，并能够理解其局限性。

№6.工程与社会：能够基于电子工程相关背景知识进行合理分析，评价电子工程实践和电子工程复杂问题解决方案对社会、健康、安全、法律以及文化的影响，并理解应承担的责任。

№7.环境和可持续发展：能够理解和评价针对电子工程复杂问题的工程实践对环境、社会可持续发展的影响。

№8.职业规范：具有人文社会科学素养、社会责任感，能够在工程实践中理解并遵守工程职业道德和规范，履行责任。

№9.个人和团队：能够在多学科背景下的团队中承担个体、团队成员以及负责人的角色。

№10.沟通：能够就电子工程复杂问题与业界同行及社会公众进行有效沟通和交流，包括撰写报告和设计文稿、陈述发言、清晰表达或回应指令。并具备一定的国际视野，能够在跨文化背景下进行沟通和交流。

№11.项目管理：理解并掌握电子工程管理原理与经济决策方法，并能在多学科环境中应用。

№12.终身学习：具有自主学习和终身学习的意识，有不断学习和适应发展的能力。

Student Outcomes:

№1.Master solid professional basic knowledge, basic principle, method and means, and apply mathematics, natural science, the professional knowledge and professional knowledge to solve complex engineering problems, and exposure and master some operating knowledge in electronics industry and set the knowledge foundation to solve the actual complex problems of enterprise electronic engineering.

№2.Problem Analysis: An ability to identify, formulate and analyze complex electronic engineering problems, reaching to substantiated conclusions using basic principles of mathematics, science,the basic principle of this major,operating method ,means and electronic industry knowledge .

№3.Design / Development Solutions: An ability to design solutions for complex electronic engineering problems and innovatively electronic systems, components or process that meet specific needs with societal, public health, safety, legal, cultural and environmental considerations.

№4.Research: An ability to conduct investigations of complex electronic engineering problems based on scientific theories and adopting scientific methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.

№5.Applying Modern Tools: An ability to create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling of complex electronic engineering problems, to complex electronic engineering activities with an understanding of the limitations.

№6.Engineering and Society: An ability to apply reasoning informed by contextual knowledge of electronic engineering to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional electronic engineering practice and complex electronic engineering problems.

№7.Environment and Sustainable Development: An ability to understand and evaluate the impact of engineering practice to professional complex electronic engineering problems in environmental and societal contexts and need for sustainable development.

№8.Professional Standards: An understanding of humanity science and social responsibility, being able to

understand and abide by professional ethics and standards responsibly in engineering practice.

№9.Individual and Teams: An ability to function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.

№10.Communication: An ability to communicate effectively on complex electronic engineering problems with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions, and communicate in cross-cultural contexts with international perspective.

№11.Project Management: Demonstrate knowledge and understanding of electronic engineering management principles and methods of economic decision-making, to function in multidisciplinary environments.

№12.Lifelong Learning: A recognition of the need for, and an ability to engage in independent and life-long learning with the ability to learn continuously and adapt to new developments.

专业简介：

信息工程（冯秉铨实验班）依托信息工程专业，信息工程专业可追溯到 1952 年，属于通信与信息系统学科，已有 60 多年办学历史，信息工程专业历经电讯工程、无线电工程等专业名称变迁，作为建国后部属高校中首批设立的电类本科专业，在著名电子学家、教育家冯秉铨教授的带领下，为我国，尤其是华南地区电子信息产业培养了一大批引领企业发展的高素质专业人才，如 TCL 总裁李东生、七喜董事长易贤忠、京信通信董事局主席霍东龄等。

信息工程（冯秉铨实验班）依托长达 30 年的精英人才培养探索成功经验（该班源于 1985 年设立的全校性精英创新班“电类联合班”），采用本硕、本博不同的培养路径，通过导师制、国内外顶级企业实习、海外访学等途径，培养数理基础扎实、具有创新能力和国际视野、能适应电子信息产业迅猛发展变化的高层次拔尖创新人才。

继承冯秉铨教授注重教学改革的传统，长期承担学校教育教学改革探索试点，成效显著，在五年一次的国家级教学成果奖评选中，连续两届获国家级教学成果二等奖。学院拥有国家级实验教学示范中心、国家级人才培养模式创新实验区、国家集成电路人才培养基地、国家工程实践教育中心、国家级教学团队，这些为创新人才培养提供保障。

学生培养得到产业界鼎力支持，目前已与 TCL、中国移动、中国电信、中国联通、中兴通讯、京信通信、中广核集团、南方电网、中国人保、微软亚洲研究院、三星广州研究院等信息产业龙头企业共建企业实习基地。

Program Profile

Information engineering belongs to communication and information system discipline, nearly 60 years' history. Information engineering profession has changed by major name of telecommunication engineering, radio engineering, the specialty is first set up as an electrical undergraduate by the affiliated universities after the founding of China. Under the leadership of Professor Feng Bingquan who was the famous

electronic scholar and educator in China, especially in Southern China electronic information industries have cultivated a large number of high-quality professionals in the development of leading enterprises such as president of TCL Li Dongsheng, seven-up chairman Yi Xianzhong, chairman of the board of directors Huo Dongling comba.

Feng Bingquan information engineering experimental class relying on 30 years of elite training to explore the successful experience (School of elite class "the innovation class date back in 1985 to set up electric joint class"), the master and the doctor are in different training path through the tutorial system at home and abroad, the top corporate internships, overseas study or so on, to cultivate high-level innovative talents with innovation ability and international vision, (who) can adapt to the rapid development of electronic information industry.

Traditional inheritance Feng Bingquan professor teaching reform, long-term to undertake school education teaching reform to explore pilot, fruitful, within five years of teaching achievement prizes at the national, two successive won the second prize of national teaching achievements. College has a national experimental teaching demonstration center, the national talented person training mode innovation experimental area, national IC talent training base, national engineering practice education center, the national teaching team, these provide safeguard for the innovative talent training.

The students are supported by the industries, and we has co-constructed enterprise practice bases with those information industry leading enterprises like TCL, China Mobile, China Telecom, Chinese Uni-com, ZTE, telecom, China Guangdong Nuclear Power Group, China Southern Power Grid, Chinese Paul, Microsoft Asia Research Institute, Guangzhou Institute of Samsung .

专业特色：

信息工程冯秉铨实验班依托长达 30 年的精英人才培养探索成功经验（该班源于 1985 年设立的全校性精英创新班“电类联合班”），采用本硕、本博不同的培养路径，通过导师制、国内外顶级企业实习、海外访学等途径，培养具有创新能力和国际视野，能适应电子信息产业迅猛发展变化的高层次拔尖创新人才。

Program Features

Feng Bingquan information engineering experimental class relying on 30 years of elite training to explore the successful experience (School of elite class "the innovation class date back in 1985 to set up electric joint class"),using different training path for the master and the doctor through the tutorial system at home and abroad, the top corporate internships, overseas study or so on, to cultivate high-level innovative talents with innovation ability and international vision, (who) can adapt to the rapid development of electronic information industry.

授予学位：工学学士学位

Degree Conferred: Bachelor of Engineering

主干课程:

电子信息学科导论、电路分析与电子线路基础、数据结构、数字逻辑电路、微机系统与接口、信号与系统、通信电子线路、电磁场与电磁波、数字信号处理、数字系统设计、信息论基础与通信原理、电子系统综合设计、计算机通信网。

Core Courses:

Introduction of Electronic Information, Circuit Analysis and Electronic Circuit Foundation, Data Structure, Digital Logic Circuit, Microcomputer System and Interface, Signals and Systems, Communication Electronic Circuit, Electromagnetic Field and Wave, Digital Signal Processing, Digital System Design, Information Theory Basis and Communication Principle, Integrated Design of Electronic Systems, Computer Communication Network.

特色课程:

信息工程本-博方向: 特色课程由导师指导选修国外名校相关专业慕课课程, 以课题研究报告或学术论文的形式进行考核, 由导师考核评定成绩。

信息工程本-硕方向: 在校内计算机、自动化、机械、材料等领域至少选修三个领域的核心课程; 或选修名校慕课相关课程, 由导师考核评定成绩。

新生研讨课: 移动信息化服务的新发展/摩尔时代与后摩尔时代

创业教育课程: 电子信息行业创业基础

Featured Courses:

Information engineering bachelor's to doctor's degree direction: Mooc courses select by the tutor to research reports or academic papers in the form of assessment, assessment by the instructor assessment results.

Information engineering bachelor's to master's degree direction: At least elective three courses in the field of computer, automation, machinery, materials and other fields, or elective relevant mooc courses and get scores by tutor.

Entrepreneurship courses: Basis of Electronic Information Industry Entrepreneurship

一、教学计划总体安排表 (General Teaching Schedule)

学 年	学 期	教学进度安排 (周)																		理 论 教 学	考 试	入 学 教 育	军 训	课 程 设 计	大 作 业	工 程 训 练	电 子 实 习	综 合 实 验	社 会 实 践	生 产 实 习	毕 业 实 习	其 他 实 习	中 外 合 作 项 目	毕 业 设 计	就 业 安 排	机 动	假 期	小 计	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18																				19
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R																				
一	1	C	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	D	D	D	13	2	1	3													19		
	2	A	A	A	A	F	A	A	A	A	A	A	A	A	A	A	A	A	B	B	B	17	2			1											20		
二	3	I	A	A	A	A	A	A	A	A	G	A	A	A	A	A	B	B	B	B	15	2				2		1									20		
	4	E	E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	B	16	2			2												20		
三	5	A	A	A	A	A	A	A	A	A	A	A	A	A	A	E	E	E	B	B	15	2			3												20		
	6	E	E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	B	16	2			2													20	
四	7	研究生阶段学习, 并完成本科毕业实习和毕业设计																		14	2																		20
	8																																						
合计 (周)																				106	14	1	3	7	1	2	0	1	1	1	0	4	0	0	15	1	1	0	157

二、各类课程学分登记表 (Registration Form of Curriculum Credits)

1. 学分统计表 (Credits Registration Form)

课程类别 Course Category	课程要求 Requirement	学分 Credits	学时 Academic Hours	备注 Remarks
公共基础课 General Basic Courses	必修 Compulsory	69.0	1068	
	通识 General Education	10.0	160	
学科基础课 Disciplinary Basic Courses	必修 Compulsory	47	836	
	选修 Elective	0.0	0	
专业领域课 Specialty-related Courses	必修 Compulsory	0.0	0	
	选修 Elective	16.0	256	
合 计 Total		142.0	2320	
集中实践教学环节 (周) Practice Training (Weeks)	必修 Compulsory	35.0	35 周	
毕业学分要求 Credits Required for Graduation	142.0+35.0=177.0			

备注: 硕士、博士阶段课程修读要求及毕业资格按照学生修读的研究生专业培养方案执行, 第四年在导师的指导下修读相关课程; 学生本科阶段在取得专业教学计划规定学分的同时, 还必须第二课堂取得 2 个人文素质教育学分和 4 个创新能力培养学分。

2.类别统计表 (Category Registration Form)

学时 Academic Hours					学分 Credits						
总学时数 Total	其中 Include		其中 Include		总学分数 Total	其中 Include		其中 Include			其中 Include
	必修学时 Compulsory	选修学时 Elective	理论教学学时 Theory Course	实验教学学时 Lab		必修学分 Compulsory	选修学分 Elective	集中实践教学环节学分 Practice-concentrated Training	理论教学学分 Theory Course Credits	实验教学学分 Lab	创新创业教育学分 Innovation and Entrepreneurship Education
2320	1904	416	1964	356	177	151	26	35	131	11	11

三、专业教学计划表 (Teaching Schedule)

类别 Course Category	课程代码 Course No.	课程名称 Course Title	是否必修 C/E	学时数 Total Curriculum Hours				学分 Credits	开课学期 Semester	毕业要求 Student Outcomes
				总学时 Class Hours	上机 Computer-aided Class Hours	实验 Lab Hours	实践 Practice Hours			
公共基础课 General Basic Courses	143093	思想道德修养与法律基础 Cultivation of Thought and Morals & Fundamental of Law	必修课 C	(40) (36)				2.5	1	№8
	143091	中国近现代史纲要 Skeleton of Chinese Modern History		(32) 24				2.0	2	№8
	143106	毛泽东思想和中国特色社会主义理论体系概论 Thought of Mao ZeDong and Theory of Socialism with Chinese Characteristics		(80) 48				5.0	3	№8
	143090	马克思主义基本原理 Fundamentals of Marxism Principle		(40) 36				2.5	4	№8
	143094	形势与政策 Analysis of the Situation & Policy		(128)				2.0	1-8	№8
	106001	军事理论 Military Principle		(16)				1.0	2	№9
	144001	大学英语(一) College English(1)		64				4.0	1	№10
	144002	大学英语(二) College English(2)		64				4.0	2	№10
	152001	体育(一) Physical Education (1)		32			32	1.0	1	№12
	152002	体育(二) Physical Education (2)		32			32	1.0	2	№12
	152003	体育(三) Physical Education (3)		32			32	1.0	3	№12
	152004	体育(四) Physical Education (4)		32			32	1.0	4	№12
	130009	工程制图 Engineering Drawing		48				3.0	2	№9
	145268	C++程序设计基础 C++Programming Foundations		48				3.0	1	№5

145051	离散数学 Discrete Mathematics		64				4.0	1	№1
145271	面向对象程序设计 Object-Oriented Programming		32				2.0	2	№5
140197	线性代数与解析几何 Linear Algebra & Analytic Geometry		48				3.0	1	№1
140195	数学分析（一） Mathematics Analysis(1)		80				5.0	1	№1
140196	数学分析（二） Mathematics Analysis(2)		112				7.0	2	№1
140015	复变函数 Complex Variable		32				2.0	3	№1
140019	概率论与数理统计 Probability & Mathematical Statistics		48				3.0	4	№1
141005	大学物理II（一） General physics(1)		64				4.0	2	№1,2
141007	大学物理实验（一） Physics Experiment(1)		32		32		1.0	2	№1,2
141006	大学物理II（二） General physics(2)		64				4.0	3	№1,2
141008	大学物理实验（二） Physics Experiment(2)		32		32		1.0	3	№1,2
	人文科学领域 Humanities	通识课 E	96				6.0		№8
	社会科学领域 Social Science		64				4.0		№8
合 计 Total			1228		64	128	79.0		

三、专业教学计划表（续）（Teaching Schedule）

类别 Course Category	课程代码 Course No.	课程名称 Course Title	是否必修 C/E	学时数 Total Curriculum Hours				学分数 Credits	开课学期 Semester	毕业要求 Student Outcomes
				总学时 Class Hours	上机 Computer-aided Class Hours	实验 Lab Hours	实践 Practice			
学科基础课 Disciplinary Basic Courses	135149	电子信息学科导论 Introduction to electronic and Information	必 C	32				2.0	1	№1
	145209	数据结构 Data Structures	必 C	56	16			3.0	2	№1,5
	135167	电路分析与电子线路基础 Circuit analysis and fundamentals of electronic circuits	必 C	96				6.0	3	№2,3
	135168	电路分析与电子线路基础实验 Circuit Analysis and Electronic Circuit Foundation Experiment	必 C	36		36		1.0	3	№2,3
	135169	数字逻辑电路 Digital Logic Circuits	必 C	64				4.0	3	№2,3
	135170	数字逻辑电路实验 Digital Logic Circuit Experiment	必 C	16		16		0.5	3	№2,3

	135150	微机系统与接口 Microcomputer system and interface technology	必 C	64		16		3.5	4	№2,3
	141017	信号与系统 Signals & Systems	必 C	64				4.0	4	№2,3
	135042	信号与系统实验 Experiment of Signals and Systems	必 C	16		16		0.5	4	№2,3
	135046	通信电子线路 Communication Electronic Circuits	必 C	48				3.0	4	№2,3
	135175	通信电子线路实验 Experiment of Communication Electronic Circuits	必 C	16		16		0.5	4	№2,3
	135016	电磁场与电磁波 Electromagnetic Fields and Waves	必 C	64				4.0	4	№2,3
	135048	数字信号处理II Digital Signal Processing II	必 C	48				3.0	5	№2,3
	135096	数字信号处理实验 Experiment of Digital Signal Processing	必 C	16		16		0.5	5	№2,3
	135050	数字系统设计 Digital System Design	必 C	64		16		3.5	5	№2,3,4
	135172	信息论基础与通信原理 Information Theory and Principle of Communications	必 C	56				3.5	5	№2,3
	135190	信息论基础与通信原理实验 Experiment of Information Theory and Principle of Communications	必 C	16		16		0.5	5	№2,3
	135161	电子系统综合设计 The Synthetic Design of Electronic System	必 C	16				1.0	6	№2,3,4
	135060	计算机通信网 Computer Networks	必 C	48				3.0	6	№2,3
	合 计 Total			必 C	836	16	148	0	47.0	
专业领域课 Specialty-related Courses	135143	☆移动信息化服务的新发展 The New Development of Mobile Information Services	选 E	16				1.0	2	№2
	135151	☆摩尔时代与后摩尔时代 Moore and More Than Moore	选 E	16				1.0	2	№2
	140070	软件工程 Software Engineering	选 E	32				2.0	3	№2,3,5
	141062	半导体物理 Semiconductor Physics	选 E	48				3.0	4	№2,3
	135154	射频电路 RF Circuits	选 E	48				3.0	5	№2,3
	135156	△ 射频电路实验 Experiment of Radio Frequency Circuits	选 E	32		32		1.0	5	№2,3

135108	光纤通信技术 Optical Fiber Communication System	选 E	64		16		3.5	5	№2,3
135162	半导体器件 Semiconductor Devices	选 E	48				3.0	5	№2,3
	数字音频侦查技术及应用	选 E	24				1.5	6	№2,3
135134	嵌入式系统理论与技术 Embedded System and its Application	选 E	48		32		2.0	6	№2,3
135114	Linux 与嵌入式通信技术 Linux & Embedded Communication System	选 E	48		16		2.5	6	№2,3
135059	移动通信 Mobile Communications	选 E	48		16		2.5	6	№2,3
135178	深度学习与计算机视觉 A Deep Learning Tour of Computer Vision	选 E	32				2.0	6	№2,3
135155	天线原理 Principle of Antenna	选 E	32				2.0	6	№2,3
135157	数字图像处理 Digital Image Processing	选 E	40				2.5	6	№2,3,5
135148	语音信号处理 Voice Signal Processing	选 E	48		16		2.5	6	№2,3,5
135131	现代交换技术 Modern Switch Technology	选 E	48				3.0	6	№2,3
135101	模拟集成电路原理与设计 Analysis and Design of Analog Integrated Circuit	选 E	48				3.0	6	№2,3,6
135100	数字集成电路原理与设计 Digital Integrated Circuit Theory And Design	选 E	48				3.0	6	№2,3,6
135128	信息安全概论 An Introduction to Information Security	选 E	32				2.0	7	№2,3,6
135147	数字视音频技术 Digital Audio Technology	选 E	64		16		3.5	7	№2,3
135180	芯片互连与电磁兼容 Chip Interconnection and EMC	选	32				2.0	7	№2,3,5,6
135174	电子信息行业创业基础 Basis of electronic information industry entrepreneurship	选 E	16				1.0	7	№3,6,8,9,10,11
120003	创新研究训练 Innovation Research Training	选 E	32				2.0		№4,9,11
120004	创新研究实践 I Innovation Research Practice 1	选 E	32				2.0		№4,9,11
120005	创新研究实践 II Innovation Research Practice 2	选 E	32				2.0		№4,9,11
120006	创业实践 Entrepreneurial Practice	选 E	32				2.0		№4,9,11
	合 计 Total	选 E					选修课修读最低要求 16.0 学分 minimum elective course credits required:16		

特色课程:在校内计算机、自动化、机械、材料等领域修读课程, 所修学分算入专业领域课。										
计算机	154279	移动应用开发 (Android)	选	40	16			2.0	4	№2,3,5,6
	145273	高性能计算与云计算	选	48	16			2.5	5	№2,3,5
	145276	物联网技术	选	32				2.0	7	№2,3,5,6
自动化	146039	自动化前沿导论	选	16				1.0	1	№2,3
	146058	机器视觉与智能检测相关课题创新实践	选	(32)		(32)		1.0	5	№4,9,11
	146049	智能机器人创新实践	选	(32)		(32)		1.0	6	№4,9,11
机械	130300	虚拟仪器 (LabView 程序设计)	选	32				2.0	5	№4,9,11
	130335	数字化设计与制造的理论与技术	选	48	16			2.5	6	№4,9,11
	130345	MEMS 技术及其应用	选	32				2.0	7	№4,9,11
材料	136250	纳米世界的奥妙与奇妙	选	16				1.0	1	№4,9,11
	170063	医学传感器原理及应用	选	32				2.0	6	№4,9,11
	136287	脑科学前沿导论	选	32				2.0	7	№2

备注: 1. 学生根据自己开展科研训练项目、学科竞赛、发表论文、获得专利和自主创业等情况申请折算为一定的专业选修课学分 (创新研究训练、创新研究实践 I、创新研究实践 II、创业实践等创新创业课程)。每个学生累计申请为专业选修课总学分不超过 4 个学分。经学校批准认定为选修课学分的项目、竞赛等不再获得对应第二课堂的创新学分。2. 带“☆”课程要求至少选修 1 门, 带“Δ”的课程要求同时选修“射频电路”课程。

四、全英慕课参考列表

课程名	开课学校	所在平台	课时长短	课程类型
Fundamentals of Electrical Engineering	RiceUniversity	Coursera	12 周	教学计划内
Linear Circuits	Georgia Institute of Technology	Coursera	10 周	教学计划内
Circuits and Electronics	MIT	edX	76 周	教学计划内
Computation Structures - Part 1: Digital Circuits	MIT	edX	11 周	教学计划内
Signals and Systems, Part 7+Part 2	IIT Bombay (India)	edX	22 周+21 周	教学计划内
Discrete-Time Signal Processing	MIT	edX	11 周	教学计划内
A System View of Communications: From Signals to Packets (Part 7)- (Part 3)	The ChineseUniversity of Hong Kong	edX	7 周+6 周+6 周	教学计划内
Information Theory	The ChineseUniversity of Hong Kong	Coursera	18 周	教学计划内
Computer Networks	University of Washington	Coursera	12 周	教学计划内
Fundamentals of Digital Image and Video Processing	Northwestern University	Coursera	12 周	教学计划内
Audio Signal Processing for Music Applications	StanfordUniversity	Coursera	10 周	教学计划内
Machine Learning	StanfordUniversity	Coursera	11 周	教学计划内
Algorithms, Part I+ Part II	PrincetonUniversity	Coursera	6 周+7 周	教学计划外
Introduction to Computer Science and Programming Using Python	MIT	edX	9 周	教学计划外
Cryptography I+II	StanfordUniversity	Coursera	6 周+6 周	教学计划外
Mining Massive Datasets	StanfordUniversity	Coursera	7 周	教学计划外
Game Theory I+II	StanfordUniversity	Coursera	7 周+6 周	教学计划外

名校慕课相关课程, 由导师指定修读, 不计入毕业学分要求。

五、集中实践教学环节(Practice-concentrated Training)

课程 代码 Course No	课程 名称 Course Title	是否 必修 C/E	学时数 Total Curriculum Hours		学分数 Credits	开课 学期 Semester	毕业要求 Student Outcomes
			实践 Practice weeks	授课 Lecture Hours			
143197	马克思主义理论与实践 Marxism Theory and Practice	必 C	2 周		2.0	假期	№8
106002	军训 Military Training	必 C	3 周		3.0	1	№9
135160	高级语言程序设计课程设计 High-level Language Programming Design	必 C	1 周		1.0	2	№4,5
130356	工程训练 I Engineering Training	必 C	2 周		2.0	3	№1,6
135095	电子技术工程素质实践基础 The Engineering Experiment of Electrical and Electronic	必 C	1 周		1.0	3	№1,3
135146	微机系统与接口课程设计 Course Project of Microcomputer System and Interface Technology	必 C	1 周		1.0	4	№4,5
135172	电子线路基础课程设计 Design of Basic Course of Electronic Circuit	必 C	1 周		1.0	4	№1,3
135117	通信电子线路课程设计 Project of Communication Electronic Circuits	必 C	1 周		1.0	5	№1,3
135142	数字系统设计课程设计 Project of Digital System Design	必 C	2 周		2.0	5	№1,3
135165	电子系统综合设计课程设计 Curriculum Design of the Synthetic Design of Electronic System	必 C	2 周		2.0	6	№1,3,4,5
135073	毕业实习 Graduate Intern	必 C	4 周		4.0	7	№7,8,11
135074	毕业设计 Final Year Project	必 C	15 周		15.0	8	№4,9
合 计 Total		必 C	35 周		35.0		
		选 E	选修课修读最低要求 0.0 学分 minimum elective course credits required:				

六、第二课堂

第二课堂由人文素质教育和创新能力培养两部分组成。

1.人文素质教育基本要求

学生在取得专业教学计划规定学分的同时，还应结合自己的兴趣适当参加课外人文素质教育活动，参加活动的学分累计不少于 2 个学分。

2.创新能力培养基本要求

学生在取得本专业教学计划规定学分的同时，还必须参加国家创新创业训练计划或广东省创新

创业训练计划或 SRP（学生研究计划）或百步梯攀登计划或一定时间的各类课外创新能力培养活动（如学科竞赛、学术讲座等），参加活动的学分累计不少于 4 个学分。

5.“Second Classroom” Activities

“Second Classroom” Activities are comprised of two parts, Humanities Quality Education and Innovative Ability Cultivation.

1)Basic Requirements of Humanities Quality Education

Besides gaining course credits listed in one’s subject teaching curriculum, a student is required to participate in extracurricular activities of Humanities Quality Education based on one’s interest, acquiring no less than two credits.

2)Basic Requirements of Innovative Ability Cultivation

Besides gaining course credits listed in one’s subject teaching curriculum, a student is required to participate in any one of the following activities: National Undergraduate Training Programs for Innovation and Entrepreneurship, Guangdong Undergraduate Training Programs for Innovation and Entrepreneurship, Student Research Program (SRP), One-hundred-steps Innovative Program, or any other extracurricular activities of Innovative Ability Cultivation that last a certain period of time (e.g. subject contests, academic lectures), acquiring no less than four credits.