

网络工程

Network Engineering

专业代码: 080903

学 制: 4 年

Program Code: 080903

Duration: 4 years

培养目标:

本专业培养热爱祖国, 具有良好的道德与修养, 遵守法律法规, 社会和环境意识强, 具备计算机科学与技术的基本理论与基本知识, 掌握网络工程的专业方法和技能, 能有效表达, 具有较强团队意识、网络工程意识与工程能力, 具备设计解决方案与实现计算机网络系统的能力, 具有良好的工程师素养与职业发展潜力, 综合素质良好, 学习能力强, 了解和紧跟学科专业发展, 在计算机网络系统规划、研究、设计、开发、部署、应用、运行和维护等相关领域具有就业竞争力的高素质专门技术人才。毕业生适合在信息技术企业和其他各行各业的信息技术部门, 从事互联网工程、网络应用开发等工作。

Educational Objectives:

This program trains high-quality professional technical personnel, who love the country; possess a good moral and accomplishment; abide by laws and regulations; have strong social and environmental awareness; retain basic theory and knowledge of computer science and technology; master professional methods and skills for network engineering; can be effectively expressing themselves and with strong team awareness, network engineering awareness and engineering capacity; are capable of designing solutions and realizing computer network systems; are with good engineering awareness and career development potential; have good overall quality, strong learning ability; understand and closely follow the professional development of the specialty; and are competitive in computer network system planning, research, design, development, deployment, application, operation, maintenance and other related fields. Graduates are qualified for information technology enterprises and the information technology branch of various sectors, engaging in Internet engineering, network application development, and so on.

毕业要求:

№1.工程知识: 能够将数学、自然科学、工程基础和专业知用于解决复杂网络工程问题。

№2.问题分析: 能够应用数学、自然科学和工程科学的基本原理, 识别、表达、并通过文献研究分析复杂网络工程问题, 以获得有效结论。

№3.设计/开发解决方案: 能够设计针对复杂网络工程问题的解决方案, 包括满足特定需求的系统设计、部件选择、工程实施流程或方案设计, 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复杂网络工程问题进行研究, 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：能够针对复杂网络工程问题，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，包括对复杂工程问题的预测与模拟，并能够理解其局限性。

№6.工程与社会：能够基于网络工程相关背景知识进行合理分析，评价专业网络工程实践和复杂工程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复杂网络工程问题的专业工程实践对环境、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，能够在网络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：能够就复杂网络工程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.Engineering Knowledge: An ability to apply knowledge of mathematics, science, engineering fundamentals and engineering specialization to solve complex network engineering problems.

№2. Problem Analysis: An ability to apply basic principles of mathematics, science, and engineering to identify, formulate, and analyze complex network engineering problems through literature research.

№3. Design / Development Solutions: An ability to design solutions for complex network engineering problems, including system design, component selection, engineering implementation process or solution design to satisfy specific needs, and an ability to exhibit innovative awareness in the design process, considering factors such as society, health, security, law, culture, and environment.

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

№5. Applying Modern Tools: An ability to develop, select and apply appropriate techniques, resources, and modern engineering and IT tools for complex network engineering problems, including prediction and modeling of complex engineering problems with an understanding of the limitations.

№6. Engineering and Society: An ability to make reasonable analysis based on the contextual knowledge of network engineering, and to evaluate the impact of professional network engineering practice and solutions of complex engineering problems on the society, health, security, law, and culture, and understand the corresponding responsibility.

№7. Environment and Sustainable Development: An ability to understand and evaluate the impact of

professional engineering solutions for complex network engineering problems on the sustainable development of environment and society.

№8. Professional Standards: An accomplishment of humanity science and social responsibility, being able to understand and abide by professional ethics and standards responsibly in network engineering practice.

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

№10. Communication: An ability to communicate effectively on complex network engineering problems with the engineering community and with society at large, which includes the ability to write reports and design documentation, make presentations, clearly present or respond to instructions, and possess a certain degree of global horizon, being able to conduct communication in the cross-cultural contexts.

№11. Project Management: Understanding and mastering engineering management principles and methods of economic decision-making, and applying them to multidisciplinary environments.

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

专业简介：

本专业属于计算机类专业。2000年在教育部首次批准增设网络工程本科专业时，华南理工大学即设立了网络工程专业，是国内最先设立网络工程专业的高校之一，建有广东省计算机网络重点实验室。2007年，华南理工大学网络工程专业为被列为首批国家特色专业。2014年，被列为广东省高等学校教学质量与教学改革工程“专业综合改革”试点专业，近年来以追求优质的教学与卓越的教学科研为己任，恪守华南理工大学“博学、慎思、明辨、笃行”的校训以及“重人品、厚基础、强能力、宽适应”的培养模式，加强学生的创新精神、创业精神和实践能力的培养。网络工程专业的本科教育致力于培养具有广泛适应能力的计算机网络高级人才，为提升华南地区尤其是广东省的经济与社会发展做出不懈的努力。

Program Profile:

In 2000, when the Ministry of Education for the first time approved the addition of network engineering as an undergraduate specialty, South China University of Technology (SCUT) set up a network engineering specialty, being one of the earliest universities to set up this specialty. SCUT has built the Computer Network Key Laboratory of Guangdong Province. In 2007, the network engineering specialty of SCUT was listed as the first batch of national featured specialties. In 2014, the specialty was listed as the Guangdong Province higher education quality and teaching reform project "professional comprehensive reform" pilot professional. In recent years, to pursue high-quality teaching and excellent teaching and research as the responsibility, we abide by the SCUT motto of "Learn extensively, ponder prudently, distinguish clearly, practice devotedly" and the training mode of "good character, solid foundation, strong ability, wide adaptation", and strengthen students' innovative spirit, entrepreneurial spirit and practical

ability. Network engineering in undergraduate education has been committed to cultivating senior computer network personnel with a wide range of adaptability, in order to enhance the economic and social development of the southern China, especially Guangdong Province.

专业特色：

以广东省计算机网络重点实验室为依托，利用华为、腾讯等全球领先网络企业地缘优势，进行产学研合作，开设企业模块课程，建立联合实验室，提高学生工程实践能力和社会适应性，培养计算机网络精英人才。

Program Features:

Based on the Guangdong key laboratory of computer network, take advantage of the geographical proximity to the global leading network corporations such as Huawei and Tencent, set up enterprise module courses, establish joint laboratories to improve the student engineering skills and social adaptability, the program trains special talents in computer networks.

授予学位：工学学士学位

Degree Conferred: Bachelor of Engineering

主干课程：

高级语言程序设计、离散数学、计算机组成与体系结构、计算机网络、数据结构、Java 程序设计、软件工程、操作系统、数据库、数据通信原理、网络应用开发、计算机安全。

Core Courses:

Advanced Language Programming, Discrete Mathematics, Computer Organization and Architecture, Computer Networks, Data Structure, Java Programming, Software Engineering, Operating Systems, Database, Data Communication Principles, Network Application Development, and Computer Security.

特色课程：

双语教学课程：计算机网络、数据结构、计算机图形学与虚拟现实、数据仓库与数据挖掘、密码学与安全协议

研究型课程：高性能计算与云计算、网络信息检索

MOOC：数据结构、移动终端开发进阶版-Android 应用设计与开发、密码学与安全协议、Python 语言程序设计

本研共享课：高级计算机网络、最优化高级计算方法、高级数据库系统、高级操作系统与分布式系统、数据库管理及应用、操作系统与系统编程

校企合作课：移动应用开发（Android）（Google）、WEB 程序设计（Google）、高性能计算与云计算（Google, IBM）、移动终端开发进阶版-Android 应用设计与开发（腾讯）

工作坊：三年级进团队

竞教结合课程：高级语言程序设计、算法分析与设计、数据结构

创新实践课程：计算机网络课程设计，网络应用开发课程设计

创业教育课程：IT 商业模式与创业

Featured Courses:

Bilingual Courses: Computer Networks, Data Structure, Computer Graphics and Virtual Reality, Data Warehouse and Data Mining, Cryptography and Security Protocol

Research Courses: High Performance Computing and Cloud Computing, Web Information Retrieval

MOOCs: Data Structure, Advanced Mobile Application Development-Android, Cryptography and Security Protocol, Python Language Programming

Baccalaureate-Master's Integrated Courses: Advanced Computer Networks, Advanced Optimization Computing Methods, Advanced Database System, Advance Operating System and Distributed System, Database Management and Application, Operating System and System Programming

Cooperative Courses with Enterprises: Mobile Application Development (Android) (Google), Web Programming (Google), High Performance Computing and Cloud Computing (Google, IBM), Advanced Mobile Application Development-Android (Tencent)

Workshops: Junior students joining research groups

Contest-Teaching Integrated Courses: Advanced Language Programming, Algorithm Design and Analysis, Data Structure

Innovation Practice: Computer Networks Course Design, Network Application and Development Course Design, Innovation Research Training, Innovation Research Practice I, Innovation Research Practice II

Entrepreneurship Courses: IT Business Models and Entrepreneurship

学时数 Total	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	学 分数 Total	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
229 2	1764	528	1886	40 6	17 9	146.5	32.5	42	124	13	19.5

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 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 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	2	№8
	143091	中国近现代史纲要 Skeleton of Chinese Modern History		(32) 24				2.0	1	№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	4	№8
	143090	马克思主义基本原理 Fundamentals of Marxism Principle		(40) 36				2.5	3	№8
	143094	形势与政策 Analysis of the Situation & Policy		(128)				2.0	1-8	№8
	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
	106001	军事理论 Military Principle		(16)				1.0	2	№9
	140191	微积分II(一) Calculus(1)		80				5.0	1	№1,2
	140192	微积分II(二) Calculus(2)		80				5.0	2	№1,2
	140197	线性代数与解析几何 Linear Algebra & Analytic Geometry		48				3.0	1	№1,2
	140019	概率论与数理统计 Probability & Mathematical Statistics		48				3.0	2	№1,2
	141005	大学物理II(一) General Physics (1)		64				4.0	2	№1,2
	141006	大学物理II(二) General Physics (2)		64				4.0	3	№1,2
	141007	大学物理实验(一) Physics Experiment(1)		32		32		1.0	2	№1,2
	141008	大学物理实验(二) Physics Experiment(2)		32		32		1.0	3	№1,2
	130009	工程制图 Engineering Drawing		48				3.0	2	№1,2,5
	145218	高级语言程序设计(C++) (一) Advanced Language Programming(C++) (1)		64	16			3.5	1	№3,5
	145219	高级语言程序设计(C++) (二) Advanced Language Programming(C++) (2)		32	6			2.0	2	№3,5
		人文科学领域 Humanities		96				6.0		№8
		社会科学领域 Social Science	64				4.0		№8	

合 计 Total				1116	22	64	128	71.5		
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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	135002	电路与电子技术 Electric Circuit and Electronics	必 C	64			4.0	3	№1,2,4	
	135037	电路与电子技术实验 Experiment of Electric Circuits and Electronics	必 C	32		32	1.0	4	№1,2,4	
	145272	计算机科学概论 Foundations of Computer Science	必 C	16			1.0	1	№1	
	145285	IT 前沿技术 IT Frontier Technology	必 C	16			1.0	1	№1	
	145287	IT 商业模式与创业 IT Business Models and Entrepreneurship	必 C	16			1.0	5	№6,9,10	
	145051	离散数学 Discrete Mathematics	必 C	64			4.0	1	№1,2	
	145216	数字逻辑 Digital Logic	必 C	32		8	2.0	3	№1,2,3	
	145210	Java 程序设计 Java Programming	必 C	40	8		2.5	2	№3,5	
	145196	计算机组成与体系结构 Computer Organization and Architecture	必 C	64		16	3.5	4	№2,3,4	
	145055	数据结构 Data Structure	必 C	64	16		3.5	3	№3,4	
	145158	操作系统 Operating Systems	必 C	64	16		3.5	4	№3,4,5	
	145036	计算机网络 Computer Networks	必 C	64		16	3.5	4	№3,4,5	
	145148	数据库 Database	必 C	64	16		3.5	4	№3,4,5	
	145300	数据通信原理 Data Communication Principles	必 C	64		16	3.5	3	№1,2,3	
	145301	网络应用开发 Network Application Development	必 C	48	16		2.5	5	№3,5	
	145146	计算机安全 Computer Security	必 C	48		16	2.5	5	№3,5,6,8	
	145214	软件工程 Software Engineering	必 C	48	16		2.5	5	№3,9,10,11	
			合 计 Total	必 C	808	88	104	45.0		
	课 讲	云计算与大数据模块 Cloud computing and big data module								

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
				145273	高性能计算与云计算(Google, IBM) High Performance Computing and Cloud Computing (Google, IBM)	选 E				48
145180	网络信息检索 Web Information Retrieval	选 E	48	16			2.5	6	№3,4,5	
145302	大数据技术 Big Data Technology	选 E	40	8			2.5	6	№3,4,5	
网络模块 Network module										
145303	网络工程技术 Network Engineering Technology	选 E	32		16		1.5	5	№5,6,7	
145240	网络管理 Network Management	选 E	40		16		2.0	6	№3,11	
145276	物联网技术 Internet of Things Technology	选 E	32				2.0	7	№3,6,7	
移动互联网模块 Mobile Internet module										
145279	移动应用开发 (Android) (Google) Mobile Application Development(Android) (Google)	选 E	48	16			2.5	5	№3,5	
145304	移动应用开发 (iOS) Mobile Application Development(iOS)	选 E	48		16		2.5	7	№3,5	
145292	移动终端开发进阶版-Android 应用设计与开发 (腾讯) Advanced Mobile Application Development-Android (Tencent)	选 E	32	8			2.0	6	№3,5	
其它选修课										
145120	算法设计与分析 Algorithm Design and Analysis	选 E	64	16			3.5	4	№3,4,5	
145153	数学建模与实验 Mathematical Modeling and Experiment	选 E	40	16			2.0	3	№1,2,3,4	

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
				145100	编译原理 Principles of Compiler	选 E				56
145170	嵌入式系统 Embedded Systems	选 E	64		16		3.5	6	№3,6,7	
145022	计算方法 Computation Methods	选 E	48	8			3.0	6	№1,2,4,5	
145176	数字图像处理 Digital Image Processing	选 E	32	8			2.0	5	№4,5	
145161	多媒体技术 Multimedia Technology	选 E	40	8			2.5	6	№4,5	
145172	人工智能 Artificial Intelligence	选 E	40				2.5	5	№4,5,6,7	
145154	数据仓库与数据挖掘 Data Warehouse and Data Mining	选 E	48	16			2.5	6	№4,5,6	
145193	信息安全数学基础 Mathematical Foundations of Information Security	选 E	48				3.0	3	№1,2	
145277	密码学与安全协议 Cryptography and Security Protocol	选 E	48	16			2.5	5	№3,4,5,6	
145280	软件测试与质量保证 Software Testing and Quality Assurance	选 E	32	8			2.0	6	№5,9,10	
145286	WEB 程序设计 (Google) Web Programming (Google)	选 E	48	16			2.5	4	№3,5	
145305	Python 语言程序设计 Python Language Programming	选 E	32	8			2.0	3	№3,5	
145030	智能机器人技术 Intelligent Robot Technology	选 E	48	12			2.5	7	№3,4,5,6,7	
145164	计算机图形学与虚拟现实 Computer Graphics and Virtual Reality	选 E	48	16			2.5	7	№4,5,6,7	
创新创业实践课 Innovation and entrepreneurship courses										
120003	创新研究训练 Innovation Research Training	选 E	32				2.0		№4,12	
120004	创新研究实践 I Innovation Research Practice 1	选 E	32				2.0		№4,12	
120005	创新研究实践 II Innovation Research Practice 2	选 E	32				2.0		№4,12	
120006	创业实践 Entrepreneurial Practice	选 E	32				2.0		№4,12	

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			
合 计 Total			必 C	0	0	0	0		
			选 E	选修课修读最低要求 20.5 学分 minimum elective course credits required: 20.5					

备注：1.根据自己的兴趣，选修云计算与大数据、网络、移动互联网3个模块之一的所有课程。2.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。

Note: 1. Computer-aided and lab hours are in school, practice hours are off school.

2. Students are required to select all courses of at least one module (Cloud computing and big data module, Network module, Mobile Internet module) according to their own interests.

3. Each student's accumulative innovation and entrepreneurship education credits cannot exceed 4 academic hours. Typically,

- The students who have hosted and completed college students' innovative entrepreneurial training project of college level or above level can ask for using the "Innovation Research Training Course" as a professional elective course (2 credits), and ask for using the Innovation and Entrepreneurship Training Program as the graduation design (thesis);
- The students who have published one or more papers as the first author in core journals can ask for using the "Innovation Research Practice I" as the specialty elective course (2 credits);
- The students who have obtained patents as a main participant (ranking among the first 3 participants) can ask for using the "Innovation Research Practice I" as the specialty elective course (2 credits);
- The students who as core members have participated in entrepreneurial practice, and won prizes in the "Internet+" college students' innovative entrepreneurial contest, "Challenge Cup" series contests, and "Creative Youth" series contests, can ask for using "Entrepreneurial Practice" as the specialty elective course (2 credits);

四、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			
106002	军训 Military Training	必 C	3 周		3.0	1	No9
143197	马克思主义理论与实践 Marxism Theory and Practice	必 C	2 周		2.0	假期	No8
130356	工程训练 I Engineering Training	必 C	2 周		2.0	3	No1,2,5,9,10
141073	电子工艺实习 II Practice of Electronic	必 C	2 周		2.0	4	No1,2,5,9,10
145241	高级语言程序设计大作业 Advanced Language Programming Course Design	必 C	2 周		2.0	2	No3,5,9,10,11
145078	数据结构大作业 Data Structure Course Design	必 C	1 周		1.0	4	No3,5,9,10,11
145306	网络应用开发课程设计 Network Application Development Course Design	必 C	1 周		1.0	6	No3,5,9,10,11
145283	数字系统创意设计 (Google) Creative Design of Digital Systems (Google)	选 E	2 周		2.0	1	No3,5,9,10,11

145080	操作系统课程设计 Operating Systems Course Design	选 E	2 周		2.0	5	№3,5,9,10,11
145081	数据库课程设计 Database Course Design	必 C	2 周		2.0	5	№3,5,9,10,11
145165	计算机网络课程设计 Computer Networks Course Design	必 C	2 周		2.0	5	№3,5,9,10,11
145171	嵌入式系统课程设计 Embedded Systems Course Design	选 E	2 周		2.0	6	№3,5,9,10,11
145242	软件工程课程设计 Software Engineering Course Design	选 E	2 周		2.0	6	№3,5,9,10,11
145083	毕业实习 Graduation Internship	必 C	8 周		8.0	7	№6,8,9,10,11,12
145084	毕业设计 Graduation Project	必 C	15 周		15.0	8	№2,3,4,6,8,9,10,11,12
合 计 Total		必 C	40		40.0		
		选 E	选修课修读最低要求 2.0 学分 minimum elective course credits required: 2				

五、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.