

应用化学

Applied Chemistry

专业代码：070302

学 制： 4 年

Program Code: 070302

Duration: 4 years

培养目标：

本专业培养适应二十一世纪社会发展，满足国家现代化建设需要，具有高度的社会责任感，良好的科学、文化素养，较好地掌握化学基础知识、基本理论和基本技能，具有创新意识和实践能力，具有创新精神和竞争意识，能够在应用化学及相关学科领域从事科学研究、技术开发和管理等工作的人才。

Educational Objectives:

This specialty fosters elite talents of applied chemistry, who can adapt social development requirement in the 21st century and satisfy the needs of national modernization development. Meanwhile, the talents possess high sense of social responsibility, good science and culture qualities, good basic knowledge, theory and skill, innovative consciousness and practice ability, innovative spirit and competitive consciousness. And the talents can be competent for the scientific research, exploiting and management in the field of applied chemistry or related fields.

毕业要求：

- №1. 基础知识：掌握化学基础知识、基本理论和实验技能，掌握一定的化学工程技术知识。
- №2. 工程知识：能够将数学、物理、化学、化学工程基础和专业知识用于解决研究成果转化。
- №3. 分析解决问题：能够应用化学和化学工程的基本原理和实验技能，并通过文献调研，解决应用研究、技术开发、科技管理和一般生产技术方面遇到的问题。
- №4. 研究能力：掌握化学或化工设计、开发、检验和生产等的基本方法和手段，具备发现、提出、分析和解决化学、化工及相关学科问题的能力。
- №5. 使用现代工具：能够针对复杂科学和工程问题，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，包括对复杂科学和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：能够基于科学和工程相关背景知识进行合理分析，评价专业工程实践和复杂科学和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科学和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，能够在科学和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. 沟通交流：能够就复杂科学和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进行灵活应用。

№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. Fundamental Knowledge: A requirement to master fundamental knowledge, basic theory and experimental skills of chemistry and fundamental knowledge of certain chemical engineering technique.

№2. Engineering Knowledge: An ability to apply knowledge of mathematics, physics, chemistry, chemical engineering fundamentals and specialization knowledge to the solution of the transformation of research achievements.

№3. Analytic and Solved Problem: An ability to solve the questions of applied study, technique exploitation, scientific and technological management and general production technology through applying basic principles and experimental skills of chemistry and chemical engineering and investigating literature.

№4. Research Ability: A requirement to master the basic methods and means of the designation, development, measurement, production, etc. of chemistry or chemical engineering and an ability to discover, put forward, analyze and solve the problems of chemistry, chemical engineering and related subjects.

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

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

№7. Environment and Sustainable Development: An ability to understand and evaluate the impact of professional science and engineering solutions in environmental and societal contexts and demonstrate knowledge of 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 science and 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 engineering management principles and methods of economic decision-making, to function in multidisciplinary environments.

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

专业简介:

应用化学专业创办于 1981 年，是国内最早创办应用化学专业的四大高校之一，2005 年被评为广东省名牌专业。目前，应用化学专业已经跟美国的休斯顿大学、罗格斯大学和英国的爱丁堡大学等签订了联合培养协议，为应用化学专业学生的继续深造和就业创造很好的条件。应用化学专业充分利用丰硕的科研成果，依托化学和化学工程 2 个一级学科，采用教学与科研相结合的人才培养模式。该专业所拥有 2 个一级学科博士点和 2 个博士后流动站，拥有 600 多平方米的专业实验室及价值超过 600 万元的专业实验仪器。

Program Profile:

Applied chemistry specialty was founded in 1981, which is one of the earliest established applied chemistry specialty in China, awarded by brand specialty of Guangdong province. At present, the applied chemistry specialty has signed a joint training agreement with Houston University and Rutgers University of USA and the University of Edinburgh in the United Kingdom to continue their education and employment, which has created good conditions for the students of applied chemistry specialty.

Applied chemistry specialty, supported by two first-class disciplines of chemistry and chemical engineering, makes full use of the abundant scientific research achievements, and adopts the mode combining undergraduate education and scientific research. The applied chemistry specialty possess two first-class doctor degree disciplines and postdoctoral mobile stations, 60 teachers including 51 full-time teachers, 32 professors, 23 associate professors, 26 Ph.D supervisors, 1 national science fund for distinguished young scholar, 2 winners of “thousand youth talents” project and 1 teaching master of Guangdong province. The applied chemistry specialty also has the specialty-related laboratories of over 600 square meters and instruments cost over 6 million RMB.

专业特色:

本专业采用理工相结合的培养模式，注重具有实践能力和创新能力的培养，是最早创办本专业的国内四大知名高校之一。本专业是广东省名牌专业，在化学化工基础研究、技术开发和技术管理等领域具有优秀的传统和特色。

Program Features:

Applied chemistry specialty combines cultivating modes of nature science and engineering, focusing on cultivating talents with practical and creative abilities, which is one of the earliest 4 universities that

established applied chemistry specialty. This specialty that is a prestigious specialty in Guangdong province has an excellent tradition and distinguishing features in these fields including fundamental study and technology development and management of chemistry and chemical engineering.

授予学位：理学学士学位

Degree Conferred: Bachelor of natural science

主干课程：

无机化学、无机化学实验、有机化学、有机化学实验、化学分析、化学分析实验、仪器分析、仪器分析实验、物理化学、物理化学实验、结构化学、流体力学与传热、传质与分离工程、化工原理实验。

Core Courses:

Inorganic Chemistry, Inorganic Chemistry Experiment, Organic Chemistry, Organic Chemistry Experiment, Chemical Analysis, Chemical Analysis Experiment, Instrument Analysis, Instrument Analysis Experiment, Physical Chemistry, Physical Chemistry Experiment, Structural Chemistry, Fluid Mechanics and Heat Transfer, Mass Transfer and Separating Process, Chemical Engineering Principles Experiment.

特色课程：

全英语教学课程：环境化学

双语教学课程：有机化学 III、催化及能源化学

研究型课程：高等有机化学、生物有机化学、综合分析化学实验、胶体与界面化学、现代电化学

含新生研讨课：现代化学功能材料研讨

专题研讨课：学术前沿讲座

校企合作课：世界名企讲座

创业教育课程：工程设计、产业模式与创业，化工企业管理

Featured Courses:

Courses Taught in English: Environmental Chemistry

Bilingual Courses: Organic Chemistry III, Catalysis and energy chemistry

Research Courses: Advanced Organic Chemistry, Biological Organic Chemistry, Comprehensive Experiment of Analytical Chemistry, Colloid and Interface Chemistry, Modern Electrochemistry

Freshmen Seminars: Academic Frontier Lectures, Discussion on Modern Chemical Functional Materials

Special Topics: Academic Frontier Lectures, Discussion on Modern Chemical Functional Materials

Cooperative Courses with Enterprises: Introduction to Engineering Design, Industrial Model and Entrepreneurship

Special Designs: Discussion on Modern Chemical Functional Materials

Innovation Practice: Train on creativity, Practice on creative

Entrepreneurship Courses: Lecture of World Famous Enterprises, Practice on 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 它 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	20		
		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	D	D	D	14	1	1	3													19					
	2	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Q	Q	B	B	16	2												2		20						
二	3	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Q	Q	B	B	16	2												2		20						
	4	G	G	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	16	2				2											20					
三	5	H	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Q	A	B	B	16	2					1							1		20						
	6	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	B	E	E	16	2			2												20					
四	7	K	K	K	L	L	A	A	A	A	A	A	A	A	A	A	A	B	B	13	2																20					
	8	O	O	O	O	O	O	O	O	O	O	O	O	O	O	Q	Q	P	P	P														15	3	2		20				
		合 计 (周)																		107	13	1	3	2		2	1					3	2					15	3	7		15 9

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	58.0	892	
	通识 General Education	10.0	160	
学科基础课 Disciplinary Basic Courses	必修 Compulsory	48.0	992	
	选修 Elective	0.0	0	
专业领域课 Specialty-related Courses	必修 Compulsory	0.0	0	
	选修 Elective	18.0	256	
合 计 Total		134.0	2300	
集中实践教学环节 (周) Practice Training (Weeks)	必修 Compulsory	31.0	31 周	
毕业学分要求 Credits Required for Graduation	134.0 + 31.0 = 165.0			

备注：学生在取得专业教学计划规定学分的同时，还必须取得第二课堂 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
2300	1884	416	1660	640	165	137	28	31	114	20	6.0

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-ai ded 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		
	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		
	145223	大学计算机基础 Foundations of Computer		32				2.0	1	№5		
	145125	多媒体技术及应用 Application of Multimedia Technology		48				3.0	2	№5		
	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		
	140189	微积分 I (一) Calculus (1)		80				5.0	1	№5		
	140190	微积分 I (二) Calculus (2)		64				4.0	2	№5		
	140197	线性代数与解析几何 Linear Algebra & Analytic Geometry		48				3.0	1	№5		
	140019	概率论与数理统计 Probability & Mathematical Statistics		48				3.0	2	№5		
	141001	大学物理 I (一) General Physics (1)		48				3.0	2	№5		
	141002	大学物理 I (二) General Physics (2)		48				3.0	3	№5		
	141007	大学物理实验 (一) Physics Experiment (1)		32		32		1.0	2	№5		
	141008	大学物理实验 (二) Physics Experiment (2)		32		32		1.0	3	№5		
	130009	工程制图 Engineering Drawing		48				3.0	3	№5		
		人文科学领域 Humanities		96	通识 课 E				6.0		№8	
		社会科学领域 Social Science		64					4.0		№8	
	合计 Total				1052		64	128	68.0			

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-ai ded Class Hours	实验 Lab Hours	实践 Practice				
学科基础课 Disciplinary Basic Courses	147043	无机化学（理科）（一） Inorganic Chemistry (1)	必 C	40				2.5	1	№1,4	
	147044	无机化学（理科）（二） Inorganic Chemistry (2)	必 C	32				2.0	2	№1,4	
	147032	无机化学实验（理科）（一） Inorganic Chemistry Experiments (1)	必 C	44		44		1.5	1	№1,4	
	147033	无机化学实验（理科）（二） Inorganic Chemistry Experiments (2)	必 C	44		44		1.5	2	№1,4	
	147053	化学分析 Chemical Analysis	必 C	32				2.0	3	№1,4	
	147110	化学分析实验 Chemical Analysis Experiment	必 C	48		48		1.5	3	№1,4	
	147004	有机化学III（一） Organic Chemistry III (1)	必 C	42				2.5	3	№1,4	
	147006	有机化学III（二） Organic Chemistry III (2)	必 C	42				2.5	4	№1,4	
	147082	有机化学实验III（一） Organic Chemistry Experiments III (1)	必 C	32		32		1.0	3	№1,4	
	147083	有机化学实验III（二） Organic Chemistry Experiments III (2)	必 C	60		60		2.0	4	№1,4	
	135026	电工与电子技术 I Electrical Engineering and Electronics	必 C	72		24		4.0	4	№1,4	
	147114	学术前沿讲座 Academic Frontier Lectures	必 C	16				1.0	4	№1,4	
	147052	仪器分析 Instrumental Analysis	必 C	48				3.0	4	№1,4	
	147092	仪器分析实验 Instrumental Analysis Experiments	必 C	44		44		1.5	4	№1,3,4	
	147056	物理化学III（一） Physical Chemistry III (1)	必 C	42				2.5	4	№1,4	
	147057	物理化学III（二） Physical Chemistry III (2)	必 C	42				2.5	5	№1,4	
	147111	物理化学实验III（一） Physical Chemistry Experiments III (1)	必 C	36		36		1.0	5	№1,4	
	147112	物理化学实验III（二） Physical Chemistry Experiments III (2)	必 C	36		36		1.0	6	№1,4	
	137115	流体力学与传热III Fluid Mechanics and Heat Transfer II	必 C	56				3.5	5	№1,2,4,5	
	170013	传质与分离工程III Mass Transfer and Separating ProcessIII	必 C	48				3.0	6	№1,2,4	
	137063	化工原理实验（一） Chemical Engineering Principle Experiment (1)	必 C	16		16		0.5	5	№1,2,4	
	137064	化工原理实验（二） Chemical Engineering Principle Experiment (2)	必 C	16		16		0.5	6	№1,2,4	
	147061	近代物理化学实验 Modern Physical Chemistry Experiment	必 C	32		32		1.0	6	№1,3,4	
	147062	结构化学 Structural Chemistry	必 C	72	16			4.0	6	№1,4	
			合计 Total	必 C	992	16	432		48.0		
	Special	147081	精细化学品概论 Introduction of Fine Chemicals ¹	选 E	48				3.0	5	№1,4,6

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-ai ded Class Hours	实验 Lab Hours	实践 Practice			
	147026	精细化学品制备实验 Preparation Experiment of Fine Chemicals ¹	选 E	48		48		1.5	5	№1,3,4,6
	147078	高等有机化学 Advanced Organic Chemistry	选 E	32				2.0	6	№1,4
	147017	生物有机化学 Biological Organic Chemistry	选 E	48				3.0	6	№1,4
	147046	商品理化检验 Physical and Chemical Inspection of Commodity	选 E	32				2.0	5	№1,4,6
	147051	近代工业分析 Industrial Analysis	选 E	32				2.0	6	№1,3,6,7
	147106	生物化学分析 Biochemical Analysis	选 E	48		16		2.5	6	№1,4
	137121	综合分析化学实验 Comprehensive Experiment of Analytical Chemistry	选 E	48		48		1.5	6	№1,4
	147104	谱图综合解析 Comprehensive Analysis of Spectra	选 E	48				3.0	5	№1,3,4
	147063	胶体与界面化学 Colloid and Interface Chemistry	选 E	32				2.0	6	№1,4
	147107	环境化学 Environmental Chemistry	选 E	48				3.0	5	№1,4,5
	137022	工业催化 Industrial Catalysis	选 E	32				2.0	5	№2,4
	137120	世界名企讲座 Lecture of World Famous Enterprises	选 E	16				1.0	6	№2,5,6,7 ,9,10,11
	137126	化工设计导论 Introduction to Chemical Engineering Design	选 E	16				1.0	2	№2,4
	137030	化工设计 Chemical Engineering Design	选 E	40				2.5	5	№2,4
	137025	化工环境工程 Chemical Environmental Engineering	选 E	32				2.0	5	№2,4,7
	137039	能源工程 Energy Engineering	选 E	32				2.0	6	№2,4,7
	137027	化工企业管理 Management of the chemical enterprise	选 E	32				2.0	5	№2,4,11
	147060	生化工程基础 Foundation of Biochemistry Engineering	选 E	32				2.0	5	№2,4
	137129	化工过程安全 Chemical Engineering Safety and Environment	选 E	32				2.0	7	№3,6,7,8
	137128	工程设计、产业模式与创业 Introduction to Engineering Design, Industrial Model and Entrepreneurship	选 E	16				1.0	5	№2,5,6.7 ,9,10,11

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-ai ded Class Hours	实验 Lab Hours	实践 Practice			
	147024	高分子材料概论 Introduction of Polymer Materials	选 E	32				2.0	6	№1,4
	147039	现代电化学 Modern Electrochemistry	选 E	32				2.0	6	№1,3,4,5
	147089	催化及能源化学 Catalysis and Energy Chemistry	选 E	32				2.0	6	№1,4,5
	147096	有机合成 Organic Synthesis	选 E	48				3.0	6	№1,4
	137139	现代化学功能材料研讨 Discussion on Modern Chemical Functional Materials	选 E	32				2.0	2	№2,7,10
	147100	计算机在化学中的应用 Application of Computer in Chemistry	选 E	64	32			3.0	3	№3,4,5
	120003	创新研究训练 Train on creativity	选 E	32				2.0		№2,3,4
	120004	创新研究实践 I Practice on creative I	选 E	32				2.0		№2,3,4
	120005	创新研究实践 II Practice on creative II	选 E	32				2.0		№2,3,4
	120006	创业实践 Practice on Entrepreneurship	选 E	32				2.0		№2,3,4
	合计 Total		选 E	选修课修读最低要求 18.0 学分 minimum elective course credits required: 18.0						

备注：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。

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	№9
143197	马克思主义理论与实践 Marxism Theory and Practice	必 C	2 周		2.0	假期	№8
130356	工程训练 I Engineering Training	必 C	2 周		2.0	4	№6
141075	电子工艺实习 I Practice of Electronic	必 C	1 周		1.0	5	№3
147076	化工原理课程设计 Course Design of Chemical Engineering Principles	必 C	2 周		2.0	6	№3

137056	文献检索与实践 Literature Research & Practice	必 C	1 周		1.0	7	№3,12
147090	生产实习 Production Practice	必 C	3 周		3.0	7	№8
147101	毕业实习 Graduation Practice	必 C	2 周		2.0	7	№8
137149	毕业设计（论文） Graduation Design (Thesis)	必 C	15 周		15.0	8	№2,3,4
合 计 Total		必 C	31 周		31.0		

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.