

Undergraduate Program for Applied Chemistry

I. Credit and Key Courses

(1) The total credits for the program are no less than **201.5**, in which no less than **76.5** credits is for University General Education Courses (Type A Courses), **64** credits for Specialized Core Courses (Type B Courses), no less than **16** credits for Specialized Elective courses (Type C Courses), no less than **20** credits for Specialized Extension Courses (Type D Courses), and **25** credits for Intensive practicum or curriculum project.

(2) The key courses throughout 4 years are listed as follows:

Inorganic Chemistry and Experiments	Material chemistry
Organic Chemistry and Experiments	Structural chemistry
Analytical Chemistry and Experiments	Instrumental Analysis and Experiments
Physical Chemistry and Experiments	Principles of chemical engineering

II. Objectives

For students who aspire to a professional career with applied chemistry, our undergraduate courses in applied Chemistry provide a firm and broad-based education, with a provision for a substantial amount of specializations in the elective courses. The courses will provide the students with a solid foundation to meet the future challenges brought by the rapid pace of technological changes, and prepare them for a life-time of learning and upgrading of skills. The graduates are suit for, but not limited, engaging in education, science research, industrial analysis, fine chemical industry, product development in applied chemistry area.

III. Requirements

Abide by the relevant policies and decrees formulated by the Chinese government, and the rules and regulations of Jiangsu University (JU).

Study hard and have good moral character. Respect the teaching staff and Chinese traditions and customs.

Develop scientific attitude in research and study and stress the combination of theory and practice. Have a good command of basic theories and systematic knowledge in the field of applied chemistry.

Be in good health condition.

IV. Curriculum and Credit Distribution

(1) Type A Courses (≥ 76.5 credits, students should select at least 4 credits from the elective courses listed below)

Course	Term	Credit	Total Hours	Theory Hours	Practice Hours	Type
Chinese- I	1	18	270	270	0	Required
Chinese- II	2	4	60	45	15	Required
Chinese-III	3	4	60	45	15	Required
Chinese-IV	4	4	60	45	15	Required
Overview of China	1	4	60	45	15	Required
Sports - I	1	2	30	10	20	Required
Sports- II	2	2	30	10	20	Required
Sports-III	3	2	30	10	20	Required
Sports-IV	4	2	30	10	20	Required
Advanced Mathematics	1,2	8	120	120	0	Required
Linear Algebra	3	2	30	30	0	Required
Probability Theory	3	3	45	45	0	Required
College Physics B	2,3	6	90	90	0	Required
Physics Experiments B	2,3	2.5	38	0	38	Required
Fundamentals of Computer Operation and Programming (C Language)	1,2	8	120	80	40	Required
Information Retrieval	4	1	15	11	4	Elective
Chinese Fine Arts	2	2	30	30	0	Elective
Chinese Music	3	2	30	30	0	Elective
Total A		76.5	1148	926	222	

(2) Type B Courses (64 credits)

Course	Term	Credit	Total Hours	Theory Hours	Practice Hours	Type
Inorganic Chemistry	1,2	8	120	120	0	Required
Analytical Chemistry	3	4	60	60	0	Required
Organic Chemistry	4,5	8	120	120	0	Required
Physical Chemistry	5,6	8	120	120	0	Required
Instrumental Analysis	4	3	45	45	0	Required
Inorganic Chemistry Experiments	1,2	6	90	0	90	Required
Analytical Chemistry Experiments	3	3	45	0	45	Required
Organic Chemistry Experiments	4,5	6	90	0	90	Required
Physical Chemistry Experiments	5,6	6	90	0	90	Required
Instrumental Analysis Experiments	4	3	45	0	45	Required
Structural Chemistry	6	4	60	60	0	Required
Introduction to Chemical Engineering	6	5	75	60	15	Required
Total B		64	960	585	375	

(3)Type C Courses (≥16 credits, students should select at least 16 credits from the elective courses listed below)

Course	Term	Credit	Total Hours	Theory Hours	Practice Hours	Type
Elemental Organic Chemistry	5	2	30	30	0	Elective
Coordination Chemistry	5	2	30	30	0	Elective
Brief History of Chemistry Development	5	2	30	30	0	Elective
Informatics and Scientific writing	5	2	30	30	0	Elective
Organic Synthetic Chemistry	6	2	30	30	0	Elective
Spectral Analysis	6	2	30	30	0	Elective
Interface and Colloid Chemistry	6	2	30	30	0	Elective
English in Chemistry	6	2	30	30	0	Elective
Polymer Chemistry	7	2	30	30	0	Elective
Chemical Reaction Engineering	7	2	30	30	0	Elective
Chemical Engineering Cartography	7	2	30	30	0	Elective
Separation Science	7	2	30	30	0	Elective
Modern instrumental methods of analysis	7	2	30	30	0	Elective
Natural Product Chemistry	7	2	30	30	0	Elective
Environmental Chemistry	7	2	30	30	0	Elective
Biochemistry	7	2	30	30	0	Elective
Total C		32	480	480	0	

(4)Type D Courses: (≥20 credits)

Course	Term	Credit	Total Hours	Theory Hours	Practice Hours	Type
Fine Chemicals	5	3	45	45	0	Required
Fine Chemicals Experiments	5	3	45	0	45	Required
Green Chemistry	5	2	30	30	0	Required
Material Chemistry	6	3	45	45	0	Required
Industrial Analysis	6	3	45	45	0	Required
Medical Intermediate	7	2	30	30	0	Required
Dope Chemical Industry	7	2	30	30	0	Required
Chemical Engineering Design	7	2	30	30	0	Required
Food Analysis Chemistry	7	2	30	30	0	Elective
Environmental Analysis Chemistry	7	2	30	30	0	Elective
Electrochemical Analysis	7	2	30	30	0	Elective
Applied Analytical Chemistry Experiments	7	3	45	0	45	Elective
Total D		29	435	345	90	

(5)Type E Courses: Practice (25 credits)

Course	Term	Credit	Weeks	Remark
Chemical Engineering Cognition Practice	3	1	1	Required
Comprehensive Chemistry Experiments	5	2	2	Required
Engineering Practice	6	3	3	Required
Research Training	6	2	2	Required
Training on Chemical Experimental Skill	7	1	1	Required
Graduation Design (Thesis)	8	16	16	Required
Total E		25	25	

V. The Allocation of Credits and course

Term	Name of Course	Credit	Required Credit	Elective Credit	Practice Credit
1	Chinese- I	18	39	0	0
	Overview of China	4			
	Sports - I	2			
	Fundamentals of Computer Operation and Programming(C Language)	4			
	Advanced Mathematics(B)	4			
	Inorganic Chemistry	4			
	Inorganic Chemistry Experiments (I)	3			
2	Chinese-II	4	25.5	2	0
	Sports-II	2			
	Chinese Fine Arts	2			
	Fundamentals of Computer Operation and Programming(C Language)	4			
	Advanced Mathematics(B)	4			
	College Physics B	3			
	College Physics Experiments B	1.5			
	Inorganic Chemistry	4			
	Inorganic Chemistry Experiments (II)	3			
3	Chinese-III	4	23	2	1
	Sports-III	2			
	Chinese Music	2			
	Linear Algebra	2			
	Probability Statistics	3			
	College Physics B	3			
	College Physics Experiments B	1			
	Analytical Chemistry	4			
	Analytical Chemistry Experiments	3			
	Chemical Engineering Cognition Practice	1			
4	Chinese-IV	4	19	1	0
	Sports-IV	2			
	Organic Chemistry	4			
	Instrumental Analysis	3			
	Organic Chemistry Experiments (I)	3			
	Instrumental Analysis Experiments	3			
	Information Retrieval	1			
5	Organic Chemistry	4	24	8	2
	Organic Chemistry Experiments (II)	3			
	Physical Chemistry	4			

	Physical Chemistry Experiments(I)	3			
	Fine Chemicals	3			
	Fine Chemicals Experiments	3			
	Green Chemistry	2			
	Comprehensive Chemistry Experiments	2			
	Elemental Organic Chemistry	2			
	Coordination Chemistry	2			
	Brief History of Chemistry	2			
	Informatics and Scientific writing	2			
6	Physical Chemistry	4	27	8	5
	Physical Chemistry Experiments(II)	3			
	Structural Chemistry	4			
	Introduction to Chemical Engineering	5			
	Material Chemistry	3			
	Industrial Analysis	3			
	Engineering Practise	3			
	Research Training	2			
	Organic Synthetic Chemistry	2			
	Spectral Analysis	2			
	Interface and Colloid Chemistry	2			
	English in Chemistry	2			
7	Medical Intermediate	2	7	25	1
	Dope Chemical Industry	2			
	Chemical Engineering Design	2			
	Polymer Chemistry	2			
	Chemical Reaction Engineering	2			
	Chemical Engineering Cartography	2			
	Separation Science	2			
	Modern instrumental methods of analysis	2			
	Natural Product Chemistry	2			
	Environmental Chemistry	2			
	Biochemistry	2			
	Food Analysis Chemistry	2			
	Environmental Analysis Chemistry	2			
	Electrochemical Analysis	2			
	Applied Analytical Chemistry Experiments	3			
Training on Chemical Experimental Skill	1				
8	Graduation Design (Dissertation)	16	16	0	16
Total		226.5	180.5	46	25