

SUSTech Graduate Program (Research Degree)

First Level Discipline

Chemistry

Code of the First Level Discipline

0703

This Graduate Program applies to students admitted in 2019

SUSTech Graduate School

May 8th, 2019

I. Program Objectives

Cultivate high-level talents who are comprehensively developed to engage in cross-disciplinary construction involving chemistry, material, biology and medical science, and make contribution to China's modernization.

1. master the fundamental principles of Marxism-Leninism, Mao Zedong Thought, and Deng Xiaoping Theory; uphold the Four Cardinal Principles; have patriotic spirit and sense of law; be serious with academic research to make contributions to socialist modernization.

2. master the fundamental theory and experiment competence on Chemistry; be familiar with the development trend of Chemistry and related disciplines; be innovative to engage in scientific research independently.

II. Major Research Focus

NO.	Discipline Direction	Major Research Focus
1	Inorganic Chemistry	1. Functional Coordination Complexes Chemistry 2. Organometallic Chemistry 3. Inorganic Material
2	Organic Chemistry	1. Organic Synthesis Methodology 2. Total Synthesis of Natural Products 3. Supramolecular Chemistry 4. Organic Functional Materials
3	Analytical Chemistry	1. Methodology and Application of Chromatography and Mass Spectrometry 2. Electrochemistry, Spectrometry and Instrument Development 3. Biomacromolecule Structure and Data Analysis 4. Chemicobiological Imaging and Application 5. Molecular Marker Testing 6. Environmental Analytic Chemistry
4	Physical Chemistry	1. Theory and Computational Chemistry 2. Chemical Kinetics 3. Catalysis Chemistry 4. Chemistry of Surface and Interface 5. Theoretical Chemistry of Environment

III. Program Duration

Type of Students	Normal Program Duration
Graduate Students (Research Degree)	3 years

IV. Required Credits

Course Type		Credits
Common Courses	Ideological and Political Theory	3
	English language course	2
	General Courses	1
Discipline-based Courses		19
Seminar		2
Practice		2
Total		29

V. Practice

Graduate practice is required during the course of study, it may cover but not limited to class assistance, internship at enterprises or public institutions, etc.

Details of Practice shall be discussed with one's advisor and the final Plan shall be put on record at the Department. Upon the conclusion of practice, students shall submit a practice (internship) report for the assessment by the employer, the result of which can be Excellent, Qualified, Unqualified. Students who get Unqualified assessment cannot obtain the credit and shall participate in Practice again.

VI. Annual Assessment

Contents: assess the research progress, scientific research input and achieved results, etc.;

Time: Graduate students shall finish one assessment before the end of the fourth semester, For each extended schooling year, the student shall receive one additional assessment; any extension of half a year or longer but less than one year shall be deemed as one year for this purpose;

Mode: submit an annual research progress report
Organizing: the Assessment Committee shall consist of at least 3 graduate advisors in related discipline, the advisor of the student can be included.
Result: The resolution for the Assessment shall be made through secret ballot, and a PASS requires approval from at least two thirds of all the committee members. Students who fail the assessment for two times shall discontinue the schooling.

VII. Dissertation Proposal Assessment

Mode: Submit a written report to attend the oral defense
Time: dissertation proposal defense should be finished before the third semester.
Contents: give a presentation on the research topic, background, research achievements in related fields, research plan, innovative points, possible results, etc.
Organizing: the length of the Oral Defense should be no less than 30 minutes. The Assessment Committee shall consist of at least 3 graduate advisors in related fields, including 1 related expert from outside the same department at least; the total number of committee members shall be odd, and the student's advisor may be included. All the members should have been qualified as graduate advisor.
Result: The resolution for the Assessment shall be made through secret ballot, and a PASS requires approval from at least two thirds of all the committee members. Student having passed the Assessment shall modify his/her dissertation proposal according to the assessment opinions. Those students having failed shall attend the second assessment within six months; if still failing, he/she shall discontinue the schooling.

VIII. General Requirements of Graduate Dissertation

Academic Level: the dissertation shall integrate the frontier of the discipline, present the author's familiarity with professional knowledge and fundamental theory of relate research, new perspectives, and his/her capability to engage in scientific researches.
Time: graduate students shall submit the dissertation without delay, which shall be handed over for real-name assessment by peer experts after being reviewed with substantial comments by his/her advisor.
Plagiarism Check: the "similarity rate with the author's own published literature deducted" shall be lower than 5%, which could be deemed PASS in the check; if the similarity rate is between 5% and 10%, an explanation description must be submitted, and, subject to the signature of the advisor and the dean of department for approval, it shall then be deemed PASS; if the similarity rate is 10% or higher, the dissertation shall be deemed as FAIL.

IX. Graduate Dissertation Examination

Time: The student may apply for Graduate Dissertation Examination after passing the formal examination and plagiarism check of dissertation.

Mode: anonymous review by 2 peer experts from outside of the university, real-name review by 1 peer expert.

Result: If 1 expert does not approve of oral defense in the first examination, the examinee may, after modifying the dissertation within one month, submit it to that expert or hire another expert for re-examination; if 2 experts do not approve of oral defense, this examination application shall be canceled. The interval for a graduate student to apply for two Dissertation Examinations shall be at least three months; any student failing in the second examination shall obey related rules of Graduate School.

X. Oral Defense of Graduate Dissertation

Time: graduate students can apply for dissertation defense after passing dissertation examination, modifying the dissertation in accordance with advisors' opinion and getting approved by his/her own advisor.

Organizing: the Committee for Oral Defense of Graduate Dissertation shall consist of at least three experts in related discipline (including at least 1 paper examining expert). The number of the committee member shall be odd, including at least 1 expert from outside the university. Committee chair should be professor, associate professor, lecture professor or experts with equivalent titles. All the members shall have the qualification of graduate advisor. The student's advisor can serve at the committee but not as the chairman.

Result: the result of the defense shall be PASS or FAIL. The resolution for the Oral Defense shall be made through secret ballot, and a PASS requires approval from at least two thirds of all the committee members. The student having failed in the Oral Defense of Graduate Dissertation may modify the dissertation within one years (within the maximum program duration for graduate student) and attend one more oral defense, and one more thesis assessment shall be finished ahead of time. For any student failing again, the university will no longer accept his/her application for oral defense.

XI. Requirements of Scholarly Achievements

Graduate students shall publish (including papers formally admitted, which shall be proved by formal notice with volume/issue number or page charges receipt) at least 1

paper or have at least 1 paper accepted by SCI-indexed journals or journals rated above (Admission Letter is required).

Authorship: the first unit shall be Southern University of Science and Technology; the graduate student shall be the first author (including co-author), or the second author in case his/her advisor is the first author.

Others: the published paper shall be an integral part of the dissertation.

XII. Others

Comments from the Degree Assessment Committee of the Discipline:

Signature of the Committee Chair:
(Stamp)

Date:

Comments from the Degree Assessment Committee of the University

Signature of the Committee Chair:
(Stamp)

Date:

Appendices to the Graduate Program in Chemistry

Appendix I: Courses

Course Type	Course Code	Course Name	Semester	Credits	Weekly Credit Hours/Total Credit Hours
General Required Courses	GGC5019	Theory and Practice of Socialism with Chinese Characteristics	Fall	2	2/32
	GGC5017	General Philosophy of Dialectics of Nature	Fall	1	1/16
	GGC5015	English for Graduate Studies	Fall	2	2/32
		Frontier Literature Appreciation and Writing	Fall	1	1/16
	CHE500	Advanced Organic Chemistry	Spring	3	3/48

Major Discipline -based Courses	1				
	CHE500 3	Advanced Inorganic Chemistry	Fall	3	3/48
	CHE500 5	Advanced Analytical Chemistry	Fall	3	3/48
	CHE501 5	Materials Chemistry	Spring	3	3/48
	CHE502 2	Computational Chemistry	Fall	3	3/48
	CHE500 2	Polymer Chemistry	Spring	3	3/48
	CHE503 1	Chemicobiology	Spring	3	3/48
	CHE501 2	Research Progress Report	Spring	4	4/128
Elective Discipline -based Courses	CHE500 9	Organic Total Synthesis Chemistry	Fall	2	2/32
	CHE500 4	Physical Organic Chemistry	Spring	3	3/48
	CHE501 7	Elemento-organic Chemistry	Fall	2	2/32
	CHE502 1	Heterocyclic Chemistry	Fall	3	3/48
	CHE500 6	Advanced Organic Spectrum Analysis	Spring	2	2/32
	CHE500 8	Organometallic Chemistry	Spring	2	2/32
	CHE501 4	Asymmetric Catalysis	Spring	2	2/32
	CHE502 8	Nanomaterials and Nano-technology	Spring	2	2/32
	CHE502 5	Physical Methods in Physical Characterization	Spring	2	2/32
	CHE501 0	Advanced Instrument Development	Spring	3	3/48
	CHE502 7	Chemical Kinetics and Dynamics Part 1	Spring	1	1/16
	CHE503 0	Chemical Kinetics and Dynamics Part 2	Fall	1	1/16
	CHE501 6	Biological Inorganic Chemistry	Spring	2	2/32
		Polymer Physics	Spring	3	3/48
		Statistical Mechanics	Fall	2	2/32

	CHE5030	Catalysis Fundamentals and Theory	Fall	2	2/32
		Introduction to Molecular Photochemistry	Spring	2	2/32
	ACA6001	Seminar	Fall/Spring	2	
<p>Note:</p> <ol style="list-style-type: none"> 1. all graduate students shall select at least 2 courses from Major Discipline-based Courses, in which CHE 5012 is a compulsory course for Chemistry major students. 2. the 2 credits of Seminar shall be obtained through 16 times of lecture participation and 1 time as a reporter. 					

Appendix II: Recommended Courses in Related Fields

Course Code	Course Name	Semester	Credits	Weekly Credit Hours/Total Credit Hours	Target Major
BME5005	Nano-Biomedicine	Fall	3	3/48	all
BME5101	Advanced microscopy: Fundamentals and Applications	Fall	3	3/48	all
BME5008	Sports Biomechanics	Spring	3	3/48	all
BME5201	BME Frontier Technology	Spring/Fall	3	3/48	all
BME5202	Innovative Practice I	Spring/Fall	3	3/48	all
BME5203	Innovative Practice II	Spring/Fall	3	3/48	all
MSE5007	Seminars on Frontiers of Modern Materials Science and Technology I	Fall	1	1/16	all
MSE5010	Organic and Biological Materials	Spring	3	3/48	all
MSE5011	Electrochemical Energy Storage and Conversion	Fall	3	3/48	all
MSE5017	Crystal Chemistry	Spring	3	3/48	all
MSE5020	Macromolecular Self-Assembly	Spring	3	3/48	all
ESE5010	Advanced Environmental Chemistry	Fall	3	3/48	Environmental Chemistry and

					other majors
	Hydrochemistry	Fall	3	3/48	Environmental Chemistry and other majors
	Function and Characterization of Eco-materials	Fall	3	3/48	Environmental Chemistry and other majors

Appendices revised on Jun 8th, 2019