Education Plan for Doctor in Environmental Science and Engineering

（Discipline Code:0830,Award Doctor Degree of Engineering）

I Objectives

Master the basic theory of Marxism、establish a scientific worldview，adhere to the Party's basic line、love the motherland；law-abiding, good conduct；honest and trustworthy, rigorous style of study, unity，with good research ethics and professionalism.

Master solid、comprehensive theoretical foundation and systematically and deeply professional knowledge in the field of Environmental Science and Engineering, have the ability to do research independently and also can produce innovative results, be competent for high level of teaching、research、engineering work and technological management in the field of Environmental Science and Engineering.

Master two foreign languages, can skillfully read professional foreign materials, can proficiently write professional paper, have a good ability to listen, speak foreign languages and use them for international communication.

Having physical health and good mental qualities.

II Disciplinary Research Areas

1. Water pollution control engineering and water resources protection
2. Resource recovery of solid waste
3. Air pollution control theory and technique
4. Environmental catalysis technique and application
5. Soil pollution Remediation technique and application
6. Environmental biology and environmental remediation
7. Environmental protection of new materials
8. Environmental chemistry and pollution control

III Educational System and Years of Study

The durable time for full-time PhD degree of postgraduate is 3 years and the study period is generally 3 to 4 years (some special students can prolong to 6 years). The requirements for course credit as follows

Table 1 Requirement for course credit

Total Credits	Degree Course Credits (≥ 10 credits)			Optional Course Credits	Compulsory Section Credits
	Public Degree Courses		Professional Degree Courses		
	Ideological Politics Courses	Foreign Language			
≥16	2	4	≥4	≥2	4

IV Curriculum System and Credit Requirements

The PhD curriculums are divided into degree courses and optional courses. Degree courses include public degree courses (2) and specialized degree course. Public degree courses are two for compulsory and totally 6 credits, which are unified and opened by university; specialized degree courses are two and totally 4 credits. If the PhD students have studied the second foreign language in

the stage of postgraduate, they don't need to choose the second foreign language in the PhD stage; otherwise, the second foreign language is compulsory. The PhD students directly promoted from bachelor must learn the master courses including Dialectics concept of nature、two mathematics degree courses and at least three specialized degree courses, in addition to the above mentioned courses for normal PhD students who originated from master degree.

Table 2 Curriculum Schedule

Course Category	Course No.	Course Name	Hour	Credit	Semester	School	Remark
Degree Courses	003281001	First Foreign Language(Chinese)	108	6	12	School of Internation Education	Compulsory for PhD student beginning from Master degree
	003281001	First Foreign Language(Chinese)	108	6	12	School of Internation Education	Compulsory for PhD student beginning from bachelor degree
	003281002	Introduction to China	54	3	1	School of Internation Education	Compulsory
	00811401	Environmental science and engineering frontier	36	2	1	School of Resources and Environmental Engineering	Compulsory
	00811402	Modern environmental test technique seminar	36	2	1	School of Resources and Environmental Engineering	
	02112101	Selection of Marxist Works	18	1	1	Marxism Institute	
	01813001-005	The first foreign languageEnglishJapaneseGermanFrenchRussian	72	4	2	School of Foreign Languages	
	00812401	The second resource recycle use monograph	36	2	1	School of Resources and Environmental Engineering	
	00812402	Environmental biology technique and ecology engineering monograph	36	2	1	School of Resources and Environmental Engineering	
	00812403	Environmental pollution control material	36	2	1	School of Resources and Environmental Engineering	

Course Category	Course No.	Course Name	Hour	Credit	Semester	School	Remark
	00812404	New technique of water treatment	36	2	1	School of Resources and Environmental Engineering	
	00812405	Drug frontier of water treatment	36	2	1	School of Resources and Environmental Engineering	
	00812406	Environmental organic analysis experiment	18	1	1	School of Resources and Environmental Engineering	
	00812407	Environmental physicochemical analysis experiment	18	1	1	School of Resources and Environmental Engineering	
	00812408	Environmental metal element analysis experiment	18	1	1	School of Resources and Environmental Engineering	
	00812409	Waste water physicochemical treatment experiment	18	1	1	School of Resources and Environmental Engineering	
	00812410	Environmental biological experiment	18	1	1	School of Resources and Environmental Engineering	
	00814001	PhD practice	36	2	6	School of Resources and Environmental Engineering	
	00814002	PhD Topic selection report	18	1	3	School of Resources and Environmental Engineering	
	00814003	PhD academic activity	18	1	3	School of Resources and Environmental Engineering	510 Academic reports5;Paticipation of academic reports10 pation of academic reports10

V Compulsory Courses

Practice section

The practice section contains two credits. It requires the students to simulate and accomplish an application form of province (city) or higher level of the national science foundation, etc. and also give 30 mins slide presentation. After the supervisor check and review, the eligible students can get two credits.

Selected topic report and Mid-term assessment

Selected topic report and Mid-term assessment are 1 credit. After PhD admission, the students should determine the research direction under guidance of supervisor, look up domestic and international relevant literatures, comprehensively investigate, propose selected topic report of academic dissertation and then decide the research topic after reviewing. If selected topic report pass, you will get one compulsory credit.

PhD students must attend the mid-term examination. The detailed requirement for selected topic report and mid-term examination of PhD students should execute according to the graduate student handbook" graduate student mid-term assessment and selection topic management method".

Academic activity

The academic activity is 1 credit. In order to promote the graduate student initially concern and understand development of domestic and international subject frontier, broaden horizon, inspire creativity, it requires every PhD student to give at least 5 academic reports, attend more than 10 academic reports and must write 500 words conclusions for every academic report. After the supervisor (team) check, review, the students who have achieved the above requirement can get one compulsory credit.

VI Scientific Research and Dissertation

Scientific research and academic dissertation writing is the dominant content of training work for PhD students. PhD students should attend relatively high level of research work, which develop and research the basic research, applied basic research, high and novel technique and important engineering technique. The PhD students can improve capability in the practice and cultivate the ability to do research work and manage research activity independently.

During the preparation process of dissertation, PhD students should make academic dissertation report at different stage in the laboratory or research room as planned, explain the working condition of dissertation and write these works to papers as possible as you can. Academic dissertation, which should fulfil independently under guidance of supervisor, is the important symbol to measure the cultivation quality and academic level of PhD students. Academic dissertation of PhD students should contain high level of review and the references of domestic and international papers should be more than 80, including one third international papers at least. PhD dissertation must be systematic and intact dissertation, and has relatively large theoretical significance or practical value. In addition, it also verifies that the author has the capability to do research independently and make some creative achievements in science or special technology.

PhD students, who apply for degree, must meet the relevant requirements of graduate student handbook "The rule for dissertation application and paper publication of PhD students", and the published papers (SCI and EI) should be journal paper and meeting paper is invalid. PhD student must pass the examination of "the evaluation system for academic misconduct of dissertation" and meet the relevant requirement of academic dissertation made by University Degree Evaluation Committee before the defense.

VII Cultivation Mode and Method

1. Training mode

The cultivation of PhD students adopts the way by combining that the supervisor takes in charge with that the guide team collectively cultivates.

The main work of PhD students is doing research in addition to curricular study. During this process, we should pay attention to cultivate the capability of analysis, solving problems, experimental technique and computer utilization. In addition, we should guide the PhD student to use new method and technique to prepare dissertation and make creative achievements.

Enhance the education of ideology and politics as well as ethic quality, adhere to learn political theory and frequently educate current news and thought, active to attend voluntary labor and do suitable physical exercise.

2. Training method

（1）Supervisor teaching.

（2）Self-learning and discussion under guidance of supervisor and cultivating the capability to study by themselves.

(3）Strictly doing research and writing papers, improving manual ability, writing skills and rigorously scientific attitude.

VIII Others

1. To examine the effects of instruction, ensure the quality, the items listed in the program must have an assessment. Assessment methods and performance assessment methods need to be clearly stated in the course syllabus.

2. Ph.D.. candidates who were enrolled ahead of schedule shall be trained as students starting from graduates under the program.

3. Before thesis proposal, Ph.D.. candidates are required to pass all the degree courses and get the credits before thesis proposal. Students are allowed to take some of the other elective courses according to the dissertation after thesis proposal. All the courses shall be completed before the application of dissertation defense.

4. Each discipline shall make specific regulations and requirements in the amount of literature to be read for the students during the study period. Science and Engineering candidates should review more than 80 pieces of literature at home and abroad (100 for candidates of other disciplines), in which foreign literature shall be no less than one third.

5. Ph.D.. candidates shall report their own learning and research work to the supervisor at least once a month at the course learning stage, and at least twice a month during the paper sessions, which shall be institutionalized and clearly clarified in the programs.

6. This program will enact from 2016.

7.PhD students, who come from other subject (major) and study with the same level of academic degree, should learn the main master courses of environmental science and engineering. Please look up the detail rules in “The principle about supplementary course of graduate students from “graduate student handbook”.