

## SES Graduation Requirements for International Doctoral Students Enrolled in 2018

Items	Notes												
<p>I. Years of Enrollment:</p> <ol style="list-style-type: none"> <li>1. Minimum years of enrollment: 2 year</li> <li>2. Maximum years of enrollment: 7 years (not including 2 academic years of the maximum accumulative length of suspension)</li> </ol>	<p>Part-time students may prolong the maximum years of enrollment for 1 more year.</p>												
<p>II. Minimum credits for graduation: <u>34</u> credits (physical education and citizen national defense education are not included), including:</p> <ol style="list-style-type: none"> <li>1. Courses: minimum of required credits: <u>8</u> ; minimum of elective credits: <u>14</u></li> <li>2. Dissertation: <u>12</u> credits</li> </ol>	<p>To pass academic and conduct courses, the grade has to be over 70 to be considered earning the credits. Students who fail the conduct grade will be object to expulsion from the university. The average of academic grades comprises 50 % of the overall graduation grades. *Required credits+ Elective credits + Dissertation = minimum credits for graduation</p>												
<p>III. Transfer credits: maximum <u>11</u> credits</p>	<p>According to NCHU regulation for credits exemption, students should apply for courses exemption prior to the deadline of course add/drop.</p>												
<p>IV. Undergraduate credits from agriculture-related courses may be counted as graduation credits for the SES.</p>	<p>According to NCHU regulation, students who need to take undergraduate courses for their research purposes can submit the application during the period of course selection, and obtain approval from the chairperson, advisor, chairperson of the course offered, and dean of the academic affairs. The credits may be counted as graduation credits after students pass the courses. The maximum for such undergraduate credits: <u>6</u> credits</p>												
<p>V. Credits from other departments: not limited</p>	<p>Include credits from other universities</p>												
<p>VI. Required courses and credits: <u>20</u> credits</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="text-align: center;">Core Course Title</th> <th style="text-align: center;">Credits</th> </tr> </thead> <tbody> <tr> <td>1.Seminar (I)</td> <td style="text-align: center;">2</td> </tr> <tr> <td>2.Seminar (II)</td> <td style="text-align: center;">2</td> </tr> <tr> <td>3. Research Method and Thesis Writing(1)</td> <td style="text-align: center;">2</td> </tr> <tr> <td>4. Research Method and Thesis Writing(2)</td> <td style="text-align: center;">2</td> </tr> <tr> <td>5. Dissertation</td> <td style="text-align: center;">12</td> </tr> </tbody> </table>	Core Course Title	Credits	1.Seminar (I)	2	2.Seminar (II)	2	3. Research Method and Thesis Writing(1)	2	4. Research Method and Thesis Writing(2)	2	5. Dissertation	12	<p>Students who fail the core courses should retake these core courses. Students who don't complete the core courses cannot graduate.</p>
Core Course Title	Credits												
1.Seminar (I)	2												
2.Seminar (II)	2												
3. Research Method and Thesis Writing(1)	2												
4. Research Method and Thesis Writing(2)	2												
5. Dissertation	12												
<p>VII. Prerequisite Courses (not included in graduation credits): Requirements based on the Advising Professor</p>													
<p>VIII. Doctoral Students Assessment: Students should pass the progress evaluation every year before 8/31.</p>	<p>Each progress evaluation committee shall consist of 3-5 members, including the thesis advisor.</p>												
<p>IX. Doctoral Candidacy Evaluation Students must pass the candidacy evaluation before they can apply for their dissertation defense.</p>	<p>Doctoral students who have failed their doctorate degree candidacy evaluation twice will be required to withdraw from the program</p>												
<p>X. Dissertation Defense:</p> <ol style="list-style-type: none"> <li>1. Students should discuss with their advisors prior to the end of first academic year.</li> <li>2. Students must get the certification of "Education on Academic and Research Ethics" course before the application of the oral defense.</li> <li>3. Students who complete minimum of enrollment, fulfill graduation credits, and complete the draft of thesis should apply for an oral defense at least 20 days prior to the oral defense. The passing grade for defense is <math>\geq 70</math>.</li> </ol>	<p>Oral defense comprises 50% of graduation grade Students must learn "Education on Academic and Research Ethics" course and have the exam for getting the certificate from the website of the Research Ethics Education. Master thesis should be written in English and oral defense should be carried out in English. Students who fail oral defense within enrollment should retake it again next semester or year. If students who retake oral defense fail again, their study will be terminated. The grade for retaking oral defense is 70.</p>												
<p>XI. Others:</p> <ul style="list-style-type: none"> <li>* Before applying for an oral defense, students should have published at least a SCI journal article with an acceptance letter and submitted at least a SCI manuscript with a proof letter.</li> <li>* Students should have performed an oral presentation in a national or international conference.</li> <li>* Students should meet the Guidelines for Including English Proficiency as a Graduation Requirement</li> </ul>													

# Department of Soil and Environmental Sciences

## Courses (Ph.D.)

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Required Courses (必修科目)		Credit Units (學分數)	Class Type (上課方式)	Remarks
專題討論(一)	Seminar(I)	2	C	D
專題討論(二)	Seminar(II)	2	C	D
研究方法與論文寫作 (一)	Research Method and Thesis Writing(1)	2	C	D
研究方法與論文寫作 (二)	Research Method and Thesis Writing(2)	2	C	D
博士論文	Dissertation	12	C	D
Electives (選修科目)		Credit Units (學分數)	Class Type (上課方式)	Remarks
土-根養分移動	Solute Movement in Soil-Root System	3	A	D
環境生化研究法	Methodology of Environmental Biochemistry	3	A	D
高等土壤物理學	Advanced Soil Physics	3	A	D
黏土礦物化學	Clay Mineral Chemistry	3	A	D
黏土礦物學	Clay Mineralogy	2	A	M
黏土礦物學實習	Practice of Clay Mineralogy	1	B	M
土壤肥力診斷技術	Diagnosis of Soil Fertility	3	A	M
分析毒理學	Analytical Toxicology	3	A	M
環境微生物學特論	Special Topics on Environmental Microbiology	3	A	M
土壤環境微生物研 究法	Methodology of Soil Environmental Microorganism	2	A	M
地理統計學	Geostatistics	2	A	M
土壤生物化學	Soil Biochemistry	3	A	M
肥料試驗設計	Design of Fertilizer Experiment	3	A	M
環境分子物理	Environmental Molecular Physics	3	A	M
水物理	Water Physics	3	A	M
環境有機化學	Environmental Organic Chemistry	3	A	M
地下水整治復育特 論	Special Topics on Groundwater Remediation	3	A	M
環境數據品質目標	Environmental Data Quality Objectives	2	A	M
環境數據品質評估	Environmental Data Quality Assessment	3	A	M
土壤環境採樣法	Methods for Soil Environmental Sampling	2	A	M
遙感探測之農業應 用	Applications of Remote Sensing in Agriculture	2	A	M
同位素技術之應用	Application of Isotopic Technique	2	A	M
地下水文學	Groundwater Hydrology	2	A	M
環境中污染物之轉 化與移動	Chemical Fate in the Environment	3	A	M
土壤環境污染復育	Restoration of Contaminated Soil	3	A	M

土壤肥力調控與改良	Modification and Correction of Soil Fertility	3	A	M
高等土壤環境微生物(先修科目:土壤學)	Advanced Soil Environmental Microbiology	3	A	M
土壤演育與分類	Soil Genesis and Classification	3	A	M
儀器分析	Instrumental Analysis	3	A	M
儀器分析實習	Practice of Instrumental Analysis	1	B	M
植物生物化學	Plant Biochemistry	3	A	M
土壤生態特論	Special Topics on Soil Ecology	2	A	M
高等植物營養學	Advanced Plant Nutrition	3	A	M
奈米科技與環境	Nanotechnology and Environment	3	A	M
營養與病害	Mineral Nutrition and Plant Diseases	2	A	M
根圈微生物	Rhizosphere Microbiology	3	A	M
土壤膠體科學特論	Selected Topics on Colloid Science of Soils	3	A	M
土壤環境與農藥	Soil Environment and Pesticide	2	A	M
土壤真菌學	Soil Fungi	3	A	M
土壤污染物傳輸	Transport of Soil Contaminant	3	A	M
環境毒理學	Environmental Toxicology	2	A	M
土壤生物多樣性	Soil Biodiversity	2	A	M
生物固氮	Biological Dinitrogen Fixation	2	A	M
高等土壤肥力	Advanced Soil Fertility	3	A	M
土壤環境物理-化學-生物界面之交互作用	Soil Physical-Chemical-Biological Interfacial Interactions	3	A	M
環境污染採樣與分析原理	Principle of Sampling and Analysis of Environmental Pollution	3	A	M
土壤化學特論	Special topics in soil chemistry	2	A	M
高等土壤化學	Advanced Course in Soil Chemistry	3	A	M
環境表面化學	Environmental Surface Chemistry	2	A	M
環境物化模式	Modeling of Environmental Physical and Chemical Processes	3	A	M
學術論文寫作：策略、技巧及道德	Academic Writing: Strategies, Skills, and Ethics	1	A	M
遙感探測學	Special Topics on Remote Sensing	3	A	M
氣候及氣候變遷	Climate and Climate Change	2	A	M

※ Class Type – A: Lecture, B: Laboratory, C: Complex Instruction.

※ M-Master Degree、D-Ph.D. Degree