SES Graduation Requirements for International Master Students Enrolled in 2019

<table>
<tr><th>Items</th><th>Notes</th></tr>
<tr><td>I. Years of Enrollment:
1. Minimum years of enrollment: 1 year
2. Maximum years of enrollment: 4 years (not including 2 academic years of the maximum accumulative length of suspension)</td><td>Part-time students may prolong the maximum years of enrollment for 1 more year.</td></tr>
<tr><td>II. Minimum credits for graduation: 34 credits (physical education and citizen national defense education are not included), including:
1. Courses: minimum of required credits: 4 ; minimum of elective credits: 24
2. Thesis: 6 credits</td><td>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 ubject to expulsion from the university. The average of academic grades comprises 50 % of the overall graduation grades.

*Required credits+ Elective credits + Master Thesis = minimum credits for graduation</td></tr>
<tr><td>III. Transfer credits: maximum 14 credits.</td><td>According to NCHU regulation for credits exemption, students should apply for courses exemption prior to the deadline of course add/drop.</td></tr>
<tr><td>IV. Undergraduate credits from agriculture-related courses may be counted as graduation credits for the SES.</td><td>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: 3 credits</td></tr>
<tr><td>V. Credits from other departments: not limited</td><td>Include credits from other universities</td></tr>
<tr><td>VI. Core courses and credits: 10 credits
<table>
<tr><th>Core Course Title</th><th>Credits</th></tr>
<tr><td>1.Seminar (I)</td><td>2</td></tr>
<tr><td>2.Seminar (II)</td><td>2</td></tr>
<tr><td>5. Master Thesis</td><td>6</td></tr>
</table></td><td>Students who fail the core courses should retake these core courses. Students who don’t complete the core courses cannot graduate.</td></tr>
<tr><td>VII. Prerequisite Courses (not included in graduation credits): Requirements based on the Advising Professor</td><td></td></tr>
<tr><td>VIII. Thesis Defense:
1. Students should discuss with their advisors prior to the end of first academic year.
2. Students who complete the 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 ≧70.</td><td>The oral defense comprises 50% of graduation grade.Students who fail the oral defense within enrollment should retake it next semester or year. If students who retake the oral defense fail again, they will be subject to expulsion from the university. The grade for retaking the oral defense is <70.</td></tr>
<tr><td>IX. Others:
* Students should have performed an oral presentation in a national or international conference.
* Students should meet the Guidelines for Including English Proficiency as a Graduation Requirement</td><td></td></tr>
</table>

Department of Soil and Environmental Sciences

Courses (Master)

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
碩士論文	Thesis	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	Advanced Soil Environmental	3	A	M

物 (先修科目:土壤學)	Microbiology			
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