SES	Graduation Require	ments for Internation	al Master Student	s Enrolled in 2019

Items		Notes		
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)		Part-time students may prolong the maximum years of enrollment for 1 more year.		
 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 		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		
III. Transfer credits: maximum 14 credits.		According to NCHU regulation for credits exemption, students should apply for courses exemption prior to the deadline of course add/drop.		
IV. Undergraduate credits from agriculture-relate may be counted as graduation credits for the		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>3</u> credits		
V. Credits from other departments: not limited		Include credits from other universities		
VI. Core courses and credits: 10 credits Core Course Title 1.Seminar (I) 2.Seminar (II) 5. Master Thesis	Credits 2 2 6	Students who fail the core courses should retake these core courses. Students who don't complete the core courses cannot graduate.		
VII. Prerequisite Courses (not included in gradual credits): Requirements based on the Advising Pr				
 VIII. Thesis Defense: Students should discuss with their advisors prior to the end of first academic year. 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. 		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.		
IX. Others: * Students should have performed an oral present national or international conference. * Students should meet the Guidelines for Includin Proficiency as a Graduation Requirement				

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	С	D	
	ives (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	В	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	М	
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	М	
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	М	
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	

上壤演育與分類 Soil Genesis and Classification 3 A M M (物(先修科目:土壤學)	Microbiology			
機器分析		Soil Genesis and Classification	3	A	M
横器分析實習 Practice of Instrumental Analysis 1 B M 植物生物化學 Plant Biochemistry 3 A M M 上壤生態特論 Special Topics on Soil Ecology 2 A M M Special Topics on Soil Ecology 3 A M M M M M M M M M M M M M M M M M M		Instrumental Analysis	3	A	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 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 土壤頂蘭學 Soil Fungi 3 A M 土壤頂蘭學 Soil Boil Contaminant 3 A M 土壤頂蘭學 Soil Boil Contaminant 3 A M 生壤均極 Soil Boil Goil Contaminant 3 A M 生壤均極 Soil Boil Fertility 3 <td></td> <td>Practice of Instrumental</td> <td>1</td> <td>В</td> <td>M</td>		Practice of Instrumental	1	В	M
五壤土寒行禰 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 橙養與病害 Mineral Nutrition and Plant Diseases 2 A M 根圈微生物 Rhizosphere Microbiology 3 A M 土壤形變特論 Selected Topics on Colloid Science of Soils 3 A M 土壤環境與農藥 Soil Environment and Pesticide 2 A M 土壤東國學 Soil Fungi 3 A M 土壤方染物傳輸 Transport of Soil Contaminant 3 A M 型境毒理學 Environmental Toxicology 2 A M 土壤日外多樣性 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 環境污染系採樣與分 -生物界面之交互作 Biological Interfacial Interactions 3 A M	植物生物化學	•	3	A	M
常米科技與環境 Ranotechnology and Environment 3 A M M Mineral Nutrition and Plant Diseases 2 A M M Mineral Nutrition and Plant Diseases 2 A M M M M M M M M M M M M M M M M M M	土壤生態特論	-	2	A	M
Environment 5 A M M Diseases Mineral Nutrition and Plant Diseases Mineral Nutrition and Plant Diseases Rhizosphere Microbiology 3 A M M Diseases Selected Topics on Colloid Science of Soils Soil Environment and Pesticide 2 A M M Desticide 3 A M M Desticide 3 A M M Desticide 4 Desticide 3 A M M Desticide 4 Desticide 5 Desticide 5 Desticide 5 Desticide 6 Desticide 7 Desticide 7 Desticide 8 Desticide 8 Desticide 9 Desti	高等植物營養學	Advanced Plant Nutrition	3	A	M
対している	奈米科技與環境		3	A	M
土壤膠體科學特論Selected Topics on Colloid Science of Soils3AM土壤環境與農藥Soil Environment and Pesticide2AM土壤真菌學Soil Fungi3AM土壤污染物傳輸Transport of Soil Contaminant3AM環境毒理學Environmental Toxicology2AM生物固氮Biological Dinitrogen Fixation2AM高等土壤肥力Advanced Soil Fertility3AM土壤環境物理-化學-生物界面之交互作用Biological Interfacial Interactions3AM環境污染採樣與分析原理Principle of Sampling and Analysis of Environmental Pollution3AM土壤化學特論Special topics in soil chemistry2AM高等土壤化學Advanced Course in Soil Chemistry3AM環境物化模式Environmental Surface Chemistry2AM環境物化模式Modeling of Environmental Physical and Chemical Processes3AM聚海論文寫作:策 略、技巧及道德Academic Writing: Strategies, Skills, and Ethics1AM遙歐採測學Special Topics on Remote Sensing3AM	營養與病害		2	A	M
工場形履科学行調Science of Soils3AM土壤環境與農藥Soil Environment and Pesticide2AM土壤直菌學Soil Fungi3AM土壤污染物傳輸Transport of Soil Contaminant3AM環境毒理學Environmental Toxicology2AM土壤生物多樣性Soil Biodiversity2AM生物固氮Biological Dinitrogen Fixation2AM高等土壤肥力Advanced Soil Fertility3AM土壤環境物理-化學 -生物界面之交互作 用Soil Physical-Chemical- -生物界面之交互作 Biological Interfacial Interactions3AM環境污染採樣與分析原理Principle of Sampling and Analysis of Environmental Pollution3AM土壤化學特論Special topics in soil chemistry2AM高等土壤化學Advanced Course in Soil Chemistry3AM環境初化模式Environmental Surface Chemistry2AM環境物化模式Physical and Chemical Processes3AM學術論文寫作:策 略、技巧及道德Academic Writing: Strategies, Skills, and Ethics1AM遙歐探測學Special Topics on Remote Sensing3AM	根圈微生物	1	3	A	M
工環境境與農藥Pesticide2AM土壤真菌學Soil Fungi3AM土壤污染物傳輸Transport of Soil Contaminant3AM環境毒理學Environmental Toxicology2AM土壤生物多樣性Soil Biodiversity2AM生物固氮Biological Dinitrogen Fixation2AM高等土壤肥力Advanced Soil Fertility3AM土壤環境物理-化學 -生物界面之交互作 用Soil Physical-Chemical-Biological Interfacial Interactions3AM環境污染採樣與分析原理Principle of Sampling and Analysis of Environmental Pollution3AM土壤化學特論Special topics in soil chemistry2AM高等土壤化學Advanced Course in Soil Chemistry3AM環境表面化學Environmental Surface Chemistry2AM環境物化模式Environmental Physical and Chemical Processes3AM學術論文寫作:策略、技巧及道德Academic Writing: Strategies, Skills, and Ethics1AM遙歐採測學Special Topics on Remote Sensing3AM	土壤膠體科學特論		3	A	M
土壤污染物傳輸 環境毒理學Transport of Soil Contaminant Environmental Toxicology3AM土壤生物多樣性 生物固氮Soil Biodiversity2AM生物固氮Biological Dinitrogen Fixation 高等土壤肥力2AM土壤環境物理-化學-生物界面之交互作用 用Soil Physical-Chemical-Biological Interfacial Interactions3AM環境污染採樣與分析原理Principle of Sampling and Analysis of Environmental Pollution3AM高等土壤化學Advanced Course in Soil Chemistry2AM高等土壤化學Environmental Surface Chemistry3AM環境表面化學Environmental Surface Chemistry2AM環境物化模式Physical and Chemical Physical and Chemical Physical and Chemical Skills, and Ethics3AM遙感探測學Special Topics on Remote Sensing3AM	土壤環境與農藥		2	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 Biological Interfacial 3 A M Interactions Principle of Sampling and Analysis of Environmental Pollution 4 Advanced Course in Soil Chemistry 2 A M 高等土壤化學 Advanced Course in Soil Chemistry 2 A M 高等土壤化學 Chemistry 2 A M 電境表面化學 Environmental Surface Chemistry 2 A M 環境物化模式 Physical and Chemical Physical and Ethics Skills, and Ethics Special Topics on Remote Sensing 3 A M	土壤真菌學	Soil Fungi	3	A	M
土壤生物多樣性Soil Biodiversity2AM生物固氮Biological Dinitrogen Fixation2AM高等土壤肥力Advanced Soil Fertility3AM土壤環境物理-化學 -生物界面之交互作 用Soil Physical-Chemical- Biological Interfacial Interactions3AM環境污染採樣與分析原理Principle of Sampling and Analysis of Environmental Pollution3AM土壤化學特論Special topics in soil chemistry2AM高等土壤化學Advanced Course in Soil Chemistry3AM環境表面化學Environmental Surface Chemistry2AM環境物化模式Modeling of Environmental Physical and Chemical Processes3AM學術論文寫作:策 略、技巧及道德Academic Writing: Strategies, Skills, and Ethics1AM遙感採測學Special Topics on Remote Sensing3AM	土壤污染物傳輸	Transport of Soil Contaminant	3	A	M
生物固氮Biological Dinitrogen Fixation2AM高等土壤肥力Advanced Soil Fertility3AM土壤環境物理-化學 -生物界面之交互作 用Soil Physical-Chemical-Biological Interfacial Interactions3AM環境污染採樣與分析原理Principle of Sampling and Analysis of Environmental Pollution3AM土壤化學特論Special topics in soil chemistry2AM高等土壤化學Advanced Course in Soil Chemistry3AM環境表面化學Environmental Surface Chemistry2AM環境物化模式Environmental Physical and Chemical Processes3AM學術論文寫作:策略、技巧及道德Academic Writing: Strategies, Skills, and Ethics1AM遙鳳採測學Special Topics on Remote Sensing3AM	環境毒理學	Environmental Toxicology	2	A	M
高等土壤肥力 Advanced Soil Fertility 3 A M M 土壤環境物理-化學 Soil Physical-Chemical-Biological Interfacial Interactions Biological Interfacial Interactions Principle of Sampling and Analysis of Environmental Pollution Advanced Course in Soil Chemistry Advanced Course in Soil Chemistry Biological Interfacial Interactions Principle of Sampling and Analysis of Environmental Pollution Advanced Course in Soil Chemistry Advanced Course in Soil The Environmental Surface Chemistry Academic Physical and Chemical Physical Academic Writing: Strategies, Skills, and Ethics Special Topics on Remote Sensing A M	土壤生物多樣性	Soil Biodiversity	2	A	M
土壤環境物理-化學 -生物界面之交互作 用Soil Physical-Chemical- Biological Interfacial Interactions3AM環境污染採樣與分析原理Principle of Sampling and Analysis of Environmental Pollution3AM土壤化學特論Special topics in soil chemistry Chemistry2AM高等土壤化學Advanced Course in Soil Chemistry3AM環境表面化學Environmental Surface Chemistry2AM環境物化模式Modeling of Environmental Physical and Chemical Processes3AM學術論文寫作:策略、技巧及道德Academic Writing: Strategies, Skills, and Ethics1AM遙歐探測學Special Topics on Remote Sensing3AM	生物固氮	Biological Dinitrogen Fixation	2	A	M
-生物界面之交互作 用Biological Interfacial Interactions3AM環境污染採樣與分析原理Principle of Sampling and Analysis of Environmental Pollution3AM土壤化學特論Special topics in soil chemistry2AM高等土壤化學Advanced Course in Soil Chemistry3AM環境表面化學Environmental Surface Chemistry2AM環境物化模式Modeling of Environmental Physical and Chemical Processes3AM學術論文寫作:策 略、技巧及道德Academic Writing: Strategies, Skills, and Ethics1AM遙感採測學Special Topics on Remote Sensing3AM	高等土壤肥力	Advanced Soil Fertility	3	A	M
Analysis of Environmental Pollution 3	-生物界面之交互作	Biological Interfacial	3	A	М
高等土壤化學Advanced Course in Soil Chemistry3AM環境表面化學Environmental Surface Chemistry2AM環境物化模式Modeling of Environmental Physical and Chemical Processes3AM學術論文寫作:策略、技巧及道德Academic Writing: Strategies, Skills, and Ethics1AM遙感探測學Special Topics on Remote Sensing3AM		Analysis of Environmental	3	A	М
高等主壤化學Chemistry3AM環境表面化學Environmental Surface Chemistry2AM環境物化模式Modeling of Environmental Physical and Chemical Processes3AM學術論文寫作:策略、技巧及道德Academic Writing: Strategies, Skills, and Ethics1AM遙感探測學Special Topics on Remote Sensing3AM	土壤化學特論	Special topics in soil chemistry	2	A	M
環境衣田化学ChemistryAM環境物化模式Modeling of Environmental Physical and Chemical Processes3AM學術論文寫作:策略、技巧及道德Academic Writing: Strategies, Skills, and Ethics1AM遙感探測學Special Topics on Remote Sensing3AM	高等土壤化學		3	A	M
環境物化模式 Physical and Chemical Processes 3 A M 學術論文寫作:策 Academic Writing: Strategies, 略、技巧及道德 Skills, and Ethics 1 A M 遙感探測學 Special Topics on Remote Sensing 3 A M	環境表面化學		2	A	M
略、技巧及道德 Skills, and Ethics 1 A M 遙感探測學 Special Topics on Remote Sensing 3 A M	環境物化模式	Physical and Chemical	3	A	М
造 Bensing 3 A M			1	Α	М
氣候及氣候變遷 Climate and Climate Change 2 A M	遙感探測學	-	3	A	М
	氣候及氣候變遷	Climate and Climate Change	2	A	M

<sup>Class Type — A: Lecture, B: Laboratory, C: Complex Instruction.
M-Master Degree \ D-Ph.D. Degree</sup>