

课程详述

COURSE SPECIFICATION

以下课程信息可能根据实际授课需要或在课程检讨之后产生变动。如对课程有任何疑问，请联系授课教师。

The course information as follows may be subject to change, either during the session because of unforeseen circumstances, or following review of the course at the end of the session. Queries about the course should be directed to the course instructor.

1.	课程名称 Course Title	土壤学 Soil Science
2.	授课院系 Originating Department	环境科学与工程学院 School of Environmental Science and Engineering
3.	课程编号 Course Code	ESE332
4.	课程学分 Credit Value	3
5.	课程类别 Course Type	专业核心课 Major Core courses
6.	授课学期 Semester	春季 Spring
7.	授课语言 Teaching Language	中英双语 English & Chinese
8.	授课教师、所属学系、联系方式（如属团队授课，请列明其他授课教师） Instructor(s), Affiliation & Contact (For team teaching, please list all instructors)	王俊坚，环境科学与工程学院，13826562940（手机） Jun-Jian Wang, School of Environmental Science and Engineering, 13826562940 (mobile)
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	待公布 To be announced
10.	选课人数限额(可不填) Maximum Enrolment (Optional)	

11. 授课方式 Delivery Method	讲授	习题/辅导/讨论	实验/实习	其它(请具体注明)	总学时
	Lectures	Tutorials	Lab/Practical	Other (Please specify)	Total
学时数 Credit Hours	42	Included in the lectures	6		48

12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	先选课/Co-requisites: 高等数学 Calculus, 化学原理 General Chemistry, 大学物理 General Physics
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	无 N/A
14. 其它要求修读本课程的学系 Cross-listing Dept.	无 N/A

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

本课程的教学目标是使本科生:

- 1) 入门土壤物理与土壤化学的基础理论和基本研究方法
- 2) 了解土壤在环境保护与农业生产中的重要性
- 3) 熟悉我国土壤的分类与地理分布

The course is designed to help students: 1) learn basic theories and research methodology of soil physics and soil chemistry; 2) learn the critical roles of soils in agricultural management and environmental protection; and 3) learn the soil classification and soil geography in China.

16. 预达学习成果 Learning Outcomes

通课程学习, 学生能初步掌握土壤物理与土壤化学的基本理论和基本研究方法, 了解土壤在环境保护与农业生产中的重要性, 并熟悉我国土壤的分类与地理分布。

The above-mentioned course objectives are achieved.

17. 课程内容及教学日历 (如授课语言以英文为主, 则课程内容介绍可以用英文; 如团队教学或模块教学, 教学日历须注明主讲人)

Course Contents (in Parts/Chapters/Sections/Weeks. Please notify name of instructor for course section(s), if this is a team teaching or module course.)

第一周、绪论与课程简介（1学时）

Week 1- Introduction and course overview (1 class hour)

第一周、土壤物理：土壤的形态与描述（2学时）

Week 1- Soil physics: soil morphology and description (2 class hours)

第二周、土壤物理：土壤颜色、质地、结构、容重与孔隙度（3学时）

Week 2- Soil physics: soil colour, texture, structure, bulk density, and porosity (3 class hours)

第三周、土壤物理：土壤通气性与温度（3学时）

Week 3- Soil physics: soil aeration and temperature (3 class hours)

第四周、土壤物理：土壤水（3学时）

Week 4- Soil physics: soil water (3 class hours)

第五周、土壤物理：野外实习课（3学时）

Week 5- Soil physics: field trip (3 class hours)

第六周、土壤化学：土壤胶体（3学时）

Week 5- Soil chemistry: soil colloids (3 class hours)

第七周、土壤化学：土壤矿物与离子交换（3学时）

Week 6- Soil chemistry: soil mineralogy and ion exchange (3 class hours)

第八周、土壤化学：土壤酸碱度与酸碱度管理（3学时）

Week 7- Soil chemistry: soil pH and pH management (3 class hours)

第九周、土壤化学：土壤有机质：来源、特性与降解（3学时）

Week 8- Soil chemistry: soil organic matter - sources, properties and decomposition (3 class hours)

第十周、土壤化学：实验室土壤化学分析（3学时）

Week 5- Soil physics: lab course of chemical analyses (3 class hours)

第十一周、土壤碳循环（3学时）

Week 10- Soil carbon cycle (3 class hours)

第十二周、土壤氮循环（3学时）

Week 11- Soil nitrogen cycle (3 class hours)

第十三周、土壤生物与根系（3学时）

<p>Week 12- Soil organisms and plant roots (3 class hours)</p> <p>第十四周、土壤在环境保护与农业生产中的角色 (3 学时)</p> <p>Week 13- Roles of soils in environmental pollution and agriculture production (3 class hours)</p> <p>第十五周、中国土壤分类系统：中美差异 (3 学时)</p> <p>Week 14- Soil classification in China: difference between China and United States (3 class hours)</p> <p>第十六周、中国土壤分类系统：地理分布 (3 学时)</p> <p>Week 15- Soil classification in China: soil geography (3 class hours)</p>

18. 教材及其它参考资料 Textbook and Supplementary Readings

<p>Brady N.C. and Weil R.R., 2010. <i>Elements of the Nature and Properties of Soils 3rd Ed.</i></p> <p>龚子同等, 1999, 中国土壤系统分类, 科学出版社。</p>

课程评估 ASSESSMENT

19. 评估形式
Type of Assessment
- 出勤
Attendance
- 课堂表现
Class Performance
- 小测验
Quiz
- 课程项目
Projects
- 平时作业
Assignments
- 期中考试
Mid-Term Test
- 期末考试
Final Exam
- 期末报告
Final Presentation
- 其它 (可根据需要
改写以上评估方式)
Others (The above may be modified as necessary)

评估时间 Time	占考试总成绩百分比 % of final score	违纪处罚 Penalty	备注 Notes
The entire semester	5%		
The entire semester	5%		
	20%		
Field lab report	20%		
Final week	50%		In-class, close-book exam

20. 记分方式 **GRADING SYSTEM**

- A. 十三级等级制 **Letter Grading**
 B. 二级记分制（通过/不通过） **Pass/Fail Grading**

课程审批 **REVIEW AND APPROVAL**

21. 本课程设置已经过以下责任人/委员会审议通过
This Course has been approved by the following person or committee of authority