

ESE313 课程大纲

- 1、2023 秋季学期—— (1-4 页)
- 2、2017 秋季学期——2022 秋季学期 (5-8 页)

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	生态学概论 Introduction to Ecology
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	ESE313
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	秋季 Fall
7.	授课语言 Teaching Language	中英双语 Chinese & English
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)	Yan Liu, School of Environmental Science and Engineering, 15101146228, liuy8@sustech.edu.cn
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 Lectures	习题/辅导/讨论 Tutorials	实验/实习 Lab/Practical	其它(请具体注明) Other (Please specify)	总学时 Total
学时数 Credit Hours	44	0	4	0	48
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	无 N/A				
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

In this course, students will gain extensive knowledge of the different ecosystems, habitats, and species found on our planet. Students will also learn of the different patterns seen in these natural systems, and the abiotic and biotic processes which shape those patterns. Students will learn about all aspects of ecology including (1) the physical environment, (2) species' adaptations to that environment, (3) populations, (4) species interactions, (5) community ecology, (6) ecosystem ecology, and (7) ecological biogeography.

16. 预达学习成果 Learning Outcomes

By the completion of the class, students will gain a comprehensive understanding of ecology. Students will gain knowledge of the many different environments and habitats on our planet, their resident species and natural histories of those species, and the different rules and laws governing the distribution and interaction between different species, their habitats, and their environments. Student will also learn about the ways human activities are modifying those environments, and how this affects natural habitats and biodiversity.

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.)

Part 1: Introduction (2 class hours)

Part 2: The Physical Environment and The Organism (6 class hours)

- Climate and the Terrestrial Environment
- The Aquatic Environment
- Adaptation

Part 3: Populations (8 class hours)

- Properties of Populations

- Population Growth
 - Intraspecific Population Regulation
 - Species Interactions
- Part 4: Community Ecology (6 class hours)**
- Community Structure
 - Factors Influencing the Structure of Communities
 - Community Dynamics
- Part 5: Ecosystem Ecology (12 class hours)**
- Ecosystem
 - Energy Flow
 - Nutrient Cycling
 - Information Transfer
- Part 6: Aquatic Ecosystems (10 class hours)**
- Biogeography
 - Energy, Nutrients, and Information
 - Specific aquatic ecosystems

另有 4 学时用于现场参观，总计 48 学时。
4 class hours for field practice.

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

Smith TM, Smith RL. 2015. Elements of Ecology, 9th Edition. Pearson Press.

课程评估 ASSESSMENT

19. 评估形式 Type of Assessment	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
出勤 Attendance		10%		
课堂表现 Class Performance				
小测验 Quiz				
课程项目 Projects		40%		Ecology in SUSTECH

平时作业 Assignments				
期中考试 Mid-Term Test				
期末考试 Final Exam		50%		
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)				

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



SUSTech
Southern University
of Science and
Technology

课程详述

COURSE SPECIFICATION

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7.	授课语言 Teaching Language	英文 English
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)	Luke Gibson, School of Environmental Science and Engineering, 17817400477, biodiversity@sustech.edu.cn
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 Lectures	习题/辅导/讨论 Tutorials	实验/实习 Lab/Practical	其它(请具体注明) Other (Please specify)	总学时 Total
	48	0	0	0	48
学时数 Credit Hours					
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	环境学导论 Introduction to Environmental Sciences				
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				

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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.)

No.	Content	Class hour
1	Introduction	2
2	Climate	2
3	The Aquatic Environment	2
4	The Terrestrial Environment	2
5	Adaptation and Natural Selection	2

6	Plant Adaptations to the Environment	2
7	Animal Adaptations to the Environment	2
8	Properties of Populations	2
9	Population Growth and Life History	2
10	Intraspecific Population Regulation	2
11	Species Interactions and Interspecific Competition	2
12	Predation	2
13	Parasitism and Mutualism	2
14	Community Structure	2
15	Factors and Community Structure	2
16	Community Dynamics	2
17	Landscape Dynamics	2
18	Ecosystem Energetics	2
19	Decomposition and Nutrient Cycling	2
20	Biogeochemical Cycles	2
21	Terrestrial Ecosystems	2
22	Aquatic Ecosystems and Coastal and Wetland Ecosystems	2
23	Large-Scale Patterns of Biological Diversity	2
24	The Ecology of Climate Change	2
Total		48

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