南方科技大学 SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY

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**	**物种演化和生态学导论/ Introduction to Species Evolution and Ecology**
2.	**授课院系 Originating Department**	生命科学学院
3.	**课程编号 Course Code**	BIO226
4.	**课程学分 Credit Value**	3 credits /48 hours
5.	**课程类别 Course Type**	专业选修课 Major Elective 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）**	张丽，生命科学学院基础免疫及微生物学系，助理教授，zhangl3@sustech.edu.cn Li Zhang (Department of Immunology and Microbiology, School of Life Sciences, Assistant Professor, zhangl3@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	42			6 （学生口头报告） Oral presentation	48

12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	Pre-requisites（先修）：BIO103 生物学原理 Principles of Biology
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	无/None
14. 其它要求修读本课程的学系 Cross-listing Dept.	无/None

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

目前的本科生物教学大多注重微观。然而对于大千世界形形色色生命的好奇才是我们对于生物学最初感兴趣的起点，我们渴望对周围的各种动物、植物以及他们组成的生态系统有更多的认识。物种演化和生态学旨在结合传统生物教学中的动物生物学、植物生物学以及生态学的基本知识，帮助同学们了解动植物的演进、分类等，培养对于生物学的宏观认知。

Current undergraduate biology courses mostly focuses on molecules and cells barely visible to our naked eyes. However, our curiosity about all kinds of life in the world is the starting point of our interest in biology, and we are eager to know more about the various animals and plants around us and the ecosystems they form. Evolution of species and ecology aims to combine the basic knowledge of zoology, botany and ecology in traditional biology teaching, to help students understand the evolution and classification of animals and plants, and to cultivate a macroscopic understanding of biology.

16. 预达学习成果 Learning Outcomes

本课程完成后，学生将能够：

（1） 了解对宏观生物界的组成及生态体系运作

（2） 了解对动植物界发生发展的基本规律，理解动植物在进化中的演变与适应，认识动植物体形态结构的统一性和生命活动的基本规律

（3） 培养对生命学科的兴趣

With the completion of this course, the students will

(1) Understand the composition of the macroscopic biological community and the functioning of ecosystems.

(2) Understand the basic laws of animal and plant development, the evolution and adaptation of animals and plants, and recognize the consistency of the morphology and structure of plants and animals as well as the basic laws of life activities.

(3) Develop their interests in biological science

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.)

模块一：概述 (2 学时)

模块二：动物生物学 (20 学时)

1. 绪论：动物分类 (2 学时)

1.1 分类依据

1.2 分类等级

1.3 动物的命名和物种的概念

1.4 动物的分门

2. 原生动物门和多细胞动物的起源(2 学时)

3. 多孔动物门、腔肠动物门和扁形动物门(1 学时)

4. 原腔动物门和环节动物门(1 学时)

5. 软体动物门和节肢动物门(1 学时)

6. 棘皮动物门和脊索动物门(1 学时)

7. 圆口纲 (1 学时)

8. 鱼类(2 学时)

9. 两栖纲和爬行纲(2 学时)

10. 鸟纲 (2 学时)

11. 哺乳纲 (3 学时)

12. 动物的比较与演化基本原理 (2 学时)

模块三：植物生物学 (10 学时)

1. 绪论 (1 学时)

2. 植物细胞与组织、植物体的形态结构和发育(1 学时)

3. 舌尖上的植物 (1 学时)

4. 生物多样性和植物的分类及命名(1 学时)

5. 藻类和苔藓植物(1 学时)

6. 蕨类植物和真菌界 (1 学时)

7. 裸子植物(1 学时)

8. 被子植物(1 学时)

9. 植物的比较与演化基本原理 (1 学时)

10. 植物与环境，植物资源的保护与利用(1 学时)

模块四：生态学 (10 学时)

1. 绪论(1 学时)

2. 生物与环境(1 学时)

3. 种群及其基本特征(2 学时)

4. 生物群落的组成与结构(2 学时)

5. 生态系统生态学(2 学时)

6. 生物多样性的保护 （2 学时）

Module I: Overview (2 hours)

Module II: Zoology (20 hours)

1. Introduction: Classification of Animals (2 hours)

1.1 Basis of classification

1.2 Classification hierarchy

1.3 Nomenclature of animals and the concept of species

1.4 Division of animals into phyla

2. Protozoa and the origin of multicellular animals (2 hours)

3. Porifera, Coelenterata and Platyhelminthes (1 hour)

4. Protocoelomata and Annelida (1 hour)

5. Mollusca and Arthropoda (1 hour)

6. Echinodermata and Chordata (1 hour)

7. Cyclostome (1 hour)

8. Fish (2 hours)

9. Amphibia and Reptilia (2 hours)

10. Birds (2 hours)

11. Mammalia (3 hours)

12. Comparison of Animals and Fundamentals of their Evolution (2 hours)

Module III: Botany (10 hours)

1. Introduction (1 hour)

2. Plant Cells and Tissues, Morphological Structure and Development of Plant Body (1 hour)

3. A bite of plants (1 hour)

4. Biodiversity and plant classification and nomenclature (1 hour)

5. Algae and bryophytes (1 hour)

6. Ferns and Fungi (1 hour)

7. Gymnosperms (1 hour)

8. Angiosperms (1 hour)

9. Plants and environment, conservation and utilization of plant resources (1 hour)

10. Comparison of Plants and Fundamentals of their Evolution (2 hours)

Module IV: Ecology (10 hours)

1. Introduction (1 hour)

2. Organisms and the environment (1 hour)

3. Populations and their basic characteristics (2 hours)

4. Composition and structure of biological communities (2 hours)

5. Ecosystem ecology (2 hours)

6.Conservation of biodiversity (2 hours)

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

许崇任：《动物生物学》（第 3 版）. 高等教育出版社，2020. 2.

林宏辉：《植物生物学》，北京：高等教育出版社，2018.

牛翠娟等：《基础生态学》（第 3 版）. 高等教育出版社

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		10		课堂讨论的参加性 Involvement in course discussion

小测验 Quiz				
课程项目 Projects				
平时作业 Assignments		40		提交课程相关主题论文一篇
期中考试 Mid-Term Test				
期末考试 Final Exam				
期末报告 Final Presentation		40		近期相关文献或者课程小研究项目进行课堂口头报告
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

本课程经生命科学学院教学工作委员会审议通过
This course is approved by the Teaching Affairs Committee, School of Life Sciences.