

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	环境与健康 Environment and Health
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	ESE322
4.	课程学分 Credit Value	3
5.	课程类别 Course Type	专业选修课 Major Elective Courses
6.	授课学期 Semester	秋季 Fall
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 (For team teaching, please list all instructors)	梁凤超，公共卫生及应急管理學院 / 环境科学与工程学院， liangfc@sustech.edu.cn Fengchao Liang, School of Public health and Emergency Management/ School of Environmental Science and Engineering, liangfc@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
	40	8			48
学时数 Credit Hours					
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements					
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite					
14. 其它要求修读本课程的学系 Cross-listing Dept.					

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

本课程教学目标包括：

- 识别环境因素的主要来源和类型；
- 讨论环境污染物的传输与转归；
- 识别促进污染物从环境转移到人体的途径和载体；
- 描述污染物与生态系统的相互作用，以及对健康产生不利影响的机制；
- 掌握和定义环境暴露风险评估和健康风险管理的步骤；
- 了解环境健康研究相关方法学；
- 了解环境因素对健康影响的现有研究空白，查明环境健康风险评估过程中的不确定性。

Upon completion of this course, students will be able to:

- Define the major sources and types of environmental agents.
- Discuss the transport and fate of these agents in the environment.
- Identify the carriers or vectors that promote the transfer of these agents from the environment to the human.
- Describe how these agents interact with biological systems, and the mechanisms by which they exert adverse health effects.
- Identify and define the steps in the risk-assessment and risk-management processes.

- Understand methodologies on environmental Health.
- Identify significant gaps in the current knowledge base concerning the health effects of environmental agents and identify areas of uncertainty in the risk-assessment process.

16. 预达学习成果 Learning Outcomes

完成本课程学习后，学生预期收获：

- 了解与个人和公共健康相关的环境因素；
- 提高批判性思维、信息素养和团队合作技能；
- 提高推理和行动能力；
- 熟悉综合性和应用性学习

Upon completion of this course, students will have:

- Gained knowledge of environmental agents as it relates to individual and public health
- Improved critical thinking, information literacy, team work skills
- Improved ability of ethical reasoning and action
- Became familiar with integrative and applied learning

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.)



第一部分：绪论

1. 环境与健康：概念及发展史

第二部分：环境毒理学和流行病学基础

2. 暴露、剂量、反应
3. 环境毒理学
4. 环境流行病学

第三部分：环境健康风险评估

5. 环境暴露评价
6. 环境健康风险评估与管理
7. 空气污染与健康
8. 土壤与健康
9. 食物和水传播性疾病
10. 生物地球化学性疾病
11. 环境与生殖健康
12. 职业健康
13. 居住环境与健康
14. 生态环境与健康
15. 市政、工业环境健康和危险废物

第四部分：环境和健康风险管理与干预

16. 环境政策与法规
17. 环境健康经济学、疾病负担和政策
18. 环境健康干预措施
19. 突发环境污染事件与应急处理

第五部分：展望

20. 环境健康研究空白与挑战

课程讲授由 20 个主题组成，每个主题 2 小时，共 40 小时；此外，还将有 8 小时的学生汇报，讨论环境与健康方面的热点和时事话题。

Part I. Introduction

1. Environment and health: definitions and history

Part II. Basics of Toxicology and Epidemiology

2. Exposure, dose, response
3. Environmental toxicology
4. Environmental epidemiology

Part III. Risk Assessment

5. Environmental exposure assessment
6. Risk assessment and management
7. Air pollution and health
8. Soil and health
9. Food- and water-borne disease
10. Biogeochemical diseases
11. Environment and reproductive health
12. Occupational health
13. Residential health
14. Ecology and health
15. Municipal, industrial, and hazardous waste

Part IV. Risk Management and Reduction

16. Environmental policy
17. Environmental health economics, disease burdens, and policy
18. Environmental health intervention
19. Environmental pollution emergencies and management

Part V. Perspective

20. Research gaps and challenges

Lecture (40 hrs) is consisted of 20 topics, each at 2 hrs.

There will also be 8 hrs of student recital, discussion on hot and current topics in Environment and Health.

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

使用下列教科书中选定的章节：

- Blumenthal, D. S., and Ruttenberg, A. J. (1995). 环境卫生概论. 第二版. 纽约: 斯普林格;
- Lippmann, M. (Ed.). (1992). 环境毒物: 人的暴露及其对健康的影响. 纽约: 范诺斯特兰莱因霍尔德;
- Moore, G. S. (1999). 与地球一起生活: 环境健康科学的概念. 博卡拉顿: 刘易斯出版社;
- Nadakavukaren, A. (2010). 我们的全球环境: 健康视角 (第 7 版). 展望高地: Waveland 出版社;
- Philp, R. B. (1995). 环境危害与人类健康. 博卡拉顿: 刘易斯出版社;
- Yassi, A., Kjellstrom, T., de Kok, T., Guidotti, T. L. (2001). 环境健康基础. 纽约: 牛津大学出版社;
- Dade W. Moeller. (2011). 环境健康: 第四版. 哈佛大学出版社;
- Jerome O. Nriagu. (2019). 环境健康百科全书. 爱思唯尔;

杨克敌, 鲁文清. (2019). 现代环境卫生学. 人民卫生出版社。

Selected chapters from the following textbooks will be used as appropriate:

Blumenthal, D. S., and Ruttenberg, A. J. (1995). Introduction to environmental health. Second Edition. New York: Springer.

Lippmann, M. (Ed.). (1992). Environmental toxicants: Human exposures and their health effects. New York: Van Nostrand Reinhold.

Moore, G. S. (1999). Living with the earth: Concepts in environmental health science. Boca Raton: Lewis Publishers.

Nadakavukaren, A. (2010). Our global environment: A health perspective (7th ed.). Prospect Heights: Waveland Press, Inc.

Philp, R. B. (1995). Environmental hazards and human health. Boca Raton: Lewis Publishers.

Yassi, A., Kjellstrom, T., de Kok, T., Guidotti, T. L. (2001). Basic environmental health. New York: Oxford University Press.

Dade W. Moeller. (2011). Environmental Health: Fourth Edition. Harvard University Press.

Jerome O. Nriagu. (2019). Encyclopedia of Environmental Health. Elsevier.

Yang, KD, Lu WQ. (2019). Modern environmental Health. People's Medical Publishing House. (Chinese)

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	全部学期 Entire semester	10		考勤 Attendance records
课堂表现 Class Performance				
小测验 Quiz				
课程项目 Projects	学期中后期 Mid and late term	40		个人或小组讨论 Group/Individual project
平时作业 Assignments	全部学期 Entire semester	20		
期中考试 Mid-Term Test				
期末考试 Final Exam				
期末报告 Final Presentation	考试周 Exam week	30		论文 Paper
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

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