

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	大数据里的全球健康 Global Health in Big Data
2.	授课院系 Originating Department	医学院 School of Medicine
3.	课程编号 Course Code	MED117
4.	课程学分 Credit Value	2
5.	课程类别 Course Type	通识选修课程 General Education (GE) 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 Instructor(s), Affiliation & Contact (For team teaching, please list all instructors)	黄捷, 公共卫生及应急管理学院, huangjie@sustech.edu.cn Huang jie , School of Public Health and Emergency Management , huangjie@sustech.edu.cn
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	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	28	4			32
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	无				
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	无				
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

该课程通过讲解国际前沿的卫生健康和大数据理论和实例，可开拓南科大本科生的国际视野和增强人类命运共同体意识。此外，本课程旨在提供有关大数据和人工智能新兴技术的高阶理论和第一手分析演示。

Through lecturing on cutting-edge and emerging topics related to global health and big data, this course is positioned to provide global perspective to students and enhance their awareness on the ideology of “a community with a shared future for mankind”. Furthermore, this course aims to provide high-level theory and demonstration of first-hand analytics of big data and artificial intelligence related technologies.

16. 预达学习成果 Learning Outcomes

熟悉全球卫生健康和大数据领域的主流理论和前沿发展趋势；熟悉全球疾病负担和健康预期寿命测算方法；掌握基于大数据的全球主要慢性疾病和大流行性传染病分析方法。

To be proficient with main stream theories and emerging trends of global health and big data; To be proficient with research methods including global disease burden and healthy life expectancy; To master analytic skills for big data driven research on global non-communicable diseases and pandemics.

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.)

首先是对全球健康和大数据的概述，包括对其历史背景和前沿发展的介绍；其次是对主要方法（包括区块链和人工智能、流行病学方法、真实世界研究、大生信）的讲解；然后是对全球关注的热点健康问题（比如疾病负担、健康预期寿命、疾病风险预测）的焦点阐述；最后是以新冠肺炎疫情为主线概述应对全球大流行性传染病的科技手段。

First, briefly overview the field of global health and big data, including history and emerging trends; Second, lecture on major analytic methods including block-chain and AI, epidemiology, real-world study, and bioinformatics; Third, focus on a few areas of global concern, including disease burden, health life expectancy, disease risk prediction; Finally, elaborate on technological advances and responses to global pandemics through the main theme of COVID-19.

（教学日历：中英双语）

Section	Topic	Hours
1	健康定义与健康决定因素 Health definition and Determinants of Health	2
2	全球重大疾病流行病学研究 Epidemiological studies of major global diseases	2
3	“我们的数据世界”平台 “Our World in Data” platform	2
4	达芬奇手术机器人的全球可及性 Global accessibility to da Vinci Surgical System	2
5	人类进化与人种多样性 Human evolution and diversity of ancestry	2
6	全球队列与生物样本库 Global cohorts and Biobanks	2

7	全球疾病负担与疾病谱 Global burden of diseases	2
8	健康预期寿命测算 Healthy life expectancy measurement	2
9	全球肥胖问题现状及分析 Current state and analysis of global obesity	2
10	全球癌症问题现状及分析 Current state and analysis of global cancers	2
11	全球急救医学现状及分析 Current state and analysis of global emergency medicine	2
12	全球大流行传染病防控体系 Global pandemics prevention and control system	2
13	全球大流行传染病病毒溯源 Global pandemics causing virus origin tracing	2
14	新冠病毒疫情模拟研究示例 COVID-19 modeling case study	2
15	期末汇报 I Final report I	2
16	期末汇报 II Final report II	2

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

1. 更健康、更公平、更安全 全球卫生十年历程（2007-2017）
2. LEVERAGING DATA SCIENCE FOR GLOBAL HEALTH (2020)
3. PRINCIPLES OF EPIDEMIOLOGY IN PUBLIC HEALTH PRACTICE (THIRD EDITION)

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		25%		
课堂表现 Class Performance		25%		
小测验 Quiz				
课程项目 Projects		25%		
平时作业 Assignments				
期中考试 Mid-Term Test				
期末考试 Final Exam				
期末报告 Final Presentation		25%		
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