

SS082 “城市与科技” 课程大纲

1、2020 年春季学期——2021 年秋季学期.....	2
2、2022 年秋季学期起.....	8



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	城市与科技 The City and Technology
2.	授课院系 Originating Department	社会科学中心 Center for Social Sciences
3.	课程编号 Course Code	SS082
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	2020年春季-2021年秋季适用 Spring Semester 2020- Fall Semester 2021
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)	王莉莉 WANG Lili 南方科技大学人文社会科学荣誉学会 Society of Fellows in the Liberal Arts, SUSTech wangll7@mail.sustech.edu.cn
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	无 NA
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	32				32
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	无 NA				
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	无 NA				
14. 其它要求修读本课程的学系 Cross-listing Dept.	无 NA				

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

Specifically, this course aims to:

- broaden students' knowledge and understanding of urbanization history,
- cultivate an appreciation of the intimate relationship between technology and shifting urbanization patterns and processes,
- help students develop cutting-edge knowledge of how technology may shape future cities,
- provide students a set of research tools to identify original questions and develop feasible research plans to solve them.

16. 预达学习成果 Learning Outcomes

After studying this course, students should be able to:

- become conversant with the history of urbanization across the world, how in the history technologies were developed to address specific urban questions, and how cities were reshaped by these technologies – not always in intended ways,
- get to know some of the most up-to-date technological experiments in the world and how these new technologies may change people's lives and the form of cities,
- improve English presentation and writing skills.

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.)

Week 1: Introduction 引言 (2-credit hours)

- Course introduction: the syllabus
- Students' self-introduction
- Three crucial skills in research and learning
 - How to write well in English

- o How to search and cite resources

Week 2: History: basic utilities in the city 历史：城市中的基本公用事业 (2-credit hours)

- Review of last class
- Four types of utilities: 1) how did they come into being, 2) evolution, 3) positive and negative impacts (intended or unintended)
 - o Water
 - o Power grid
 - o Gas
 - o Sewage

Week 3: History: transportation infrastructure and technologies in the city 历史：城市中的交通基础设施与技术 (2-credit hours)

- Review of last class
- Major transportation technologies: 1) how did they come into being, 2) evolution, 3) positive and negative impacts (intended or unintended)
 - o Asphalt
 - o Highways
 - o Bridges
 - o Tram lines and buses
 - o Mass rapid transit
 - o Ride-share technologies
- In-class exercise 1

Week 4: History: urban buildings, modern urban home, and technologies 历史：城市建筑、现代城市居所与技术 (2-credit hours)

- Review of last class
- Building technologies: 1) how did they come into being, 2) evolution, 3) positive and negative impacts
 - o Concrete
 - o The Crystal Palace: steel and glass
 - o Skyscrapers
 - o Computerized design and irregular forms
 - o Prefabricated buildings
- Modern urban home and supporting technologies: 1) how did they come into being, 2) evolution, 3) positive and negative impacts (intended or unintended)
 - o Airconditioning
 - o In the living room: e.g. TVs, sofa and bolsters, etc.
 - o In the kitchen: e.g. refrigerators, microwaves, etc.
 - o In the bathroom: e.g. toilet etc.

Week 5: History: Communication technologies and urban life 历史：通讯技术与城市生活 (2-credit hours)

- Review of last class
- Four main communication technologies over time: 1) how did they come into being, 2) evolution, 3) positive and negative impacts (intended or unintended)
 - o Telegraphs
 - o Telephones
 - o The Internet
 - o Mobiles Phones
- In-class exercise 2

Week 6: Theory: How to theorize the relationship between technology and urban society 理论：如何理解科技与城市社会之间的关系 (2-credit hours)

- Review of last class
- Definition: Science, Technology, and Society (STS) studies

- The evolution of STS studies
- Key themes of STS studies, key scholars, and their arguments
 - History and philosophy of science
 - History of technology
 - Science, technology, and society (sociological, anthropological, cultural studies)
 - Policy studies

Week 7: Theory: How to theorize the relationship between technological revolutions and the development of city-regions 理论：如何理解技术革命与城市-区域发展之间的关系 (2-credit hours)

- Review of last class
- The 1st Industrial Revolution and urban-regional development
- The 2nd Industrial Revolution and urban-regional development
- The 3rd Industrial Revolution and urban-regional development
- The upcoming 4th Industrial Revolution and new forms of urban-regions?
- In-class exercise 3

Week 8: Individual Presentation 个人演示 (2-credit hours)

Week 9: Individual Presentation 个人演示 (2-credit hours)

Week 10: What is a good city? Utopian theories, sustainability, and related debates 什么是美好城市：乌托邦理论、可持续性与相关争论 (2-credit hours)

- Review of last class
- Utopian urbanism
 - History of utopia thinking
 - Models of utopian cities
- Criteria for a good city: sustainability
 - Different definitions and measures of sustainability
 - How to understand urban sustainability?
- How technology can contribute to the making of good cities?
- How technologies can create bad cities?
- In-class exercise 4

Week 11: The present model: Smart City-1 当前模式：“智慧城市”-1 (2-credit hours)

- Review of last class
- Smart city, intelligent city, and other notions
- The evolution of the smart city thesis
- The dominant framework of the smart city model: key strategies and technologies
 - Smart transportation
 - Smart buildings
 - Smart home

Week 12: The present model: Smart City-2 当前模式：“智慧城市”-2 (2-credit hours)

- Review of last class
- The dominant framework of the smart city model: key strategies and technologies (cont.)
 - Smart economy
 - Smart urban governance
- Smart cities and eco-cities
- Critique of smart cities
- In-class exercise 5

Week 13: Design for a better future: Experiments and explorations around the world 设计更美好的未来：世界各地的实验与探索 (2-credit hours)

- Review of last class
- Experiments and explorations around the world

- o The Future City Lab of New York
- o The Future Cities Lab at Singapore- ETH (Zürich) Centre
- o Senseable City Lab at MIT
- o City Form Lab at MIT
- o Peace Innovation City Lab Network (31+ cities around the world)
- Design a research project

Week 14: Future cities in imagination 想象中的未来城市 (2-credit hours)

- Review of last class
- Future cities in science fictions
- Future cities in futurist theories
- Future cities in futuristic planning and architecture
- In-class exercise 6

Week 15: Group presentation 小组演示 (2-credit hours)

Week 16: Group presentation and course conclusion 小组演示及课程结语 (2-credit hours)

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

NA

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		0%		The attendance record is only used to decide whether students should receive a "Failure" in the course (if they miss more than three classes since the fourth week).
课堂表现 Class Performance		10%		Class performance is evaluated based on 1) whether students listen to the class attentively, and 2) whether they participate in class discussion actively.
小测验 Quiz				
课程项目 Projects				
平时作业 Assignments		36%		Six in-class open-book exercises, in total worth 36% of the final grade. Each exercise comprises a set of short answer questions and lasts about half an hour.
期中考试 Mid-Term Test		24%		Mid-term project, including a presentation of ten minutes (12% of the final grade) and a written report (12% of the final grade).
期末考试 Final Exam				
期末报告 Final Presentation		30%		Group research project, including a group presentation (15% of the final grade) and a final research report (15% of the final grade).

其它（可根据需要
改写以上评估方
式）

Others (The
above may be
modified as
necessary)

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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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课程详述

COURSE SPECIFICATION

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6.	授课学期 Semester	2022 年秋季学期起启用 Since Fall Semester, 2022
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)	王莉莉 WANG Lili 南方科技大学社会科学中心 Center for Social Sciences, SUSTech wangll3@sustech.edu.cn
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	无 NA
10.	选课人数限额(可不填) Maximum Enrolment (Optional)	25

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	32				32
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	无 NA				
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	无 NA				
14. 其它要求修读本课程的学系 Cross-listing Dept.	无 NA				

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

Specifically, this course aims to:

- broaden students' knowledge and understanding of urbanization history,
- cultivate an appreciation of the interweaving relationship between technology and shifting urbanization patterns and processes,
- help students develop cutting-edge knowledge of how technology may shape future cities,
- provide students a set of research tools to identify original questions and develop feasible research plans to answer them.

16. 预达学习成果 Learning Outcomes

After studying this course, students should be able to:

- become conversant with the history of urbanization across the world – how in history technologies were developed to address specific urban questions, and how cities were reshaped by these technologies, though not always in intended ways,
- get to know some of the most up-to-date technological experiments in the world and how these new technologies may change people's lives and the form of cities in the future,
- improve English presentation and writing skills.

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.)

Week 1: Introduction 引言 (2-credit hours)

- Course introduction: the syllabus
- Students' self-introduction
- Three crucial skills in research and learning

- o How to write well in English
- o How to search and cite resources
- In-class exercise 1

Week 2: History: basic utilities in the city 历史: 城市中的基本公用事业 (2-credit hours)

- Review of last class
- Four types of utilities: 1) how did they come into being, 2) evolution, 3) positive and negative impacts (intended or unintended)
 - o Water
 - o Sewage
 - o Power grid
 - o Gas

Week 3: History: transportation infrastructure and technologies in the city 历史: 城市中的交通基础设施与技术 (2-credit hours)

- Review of last class
- Major transportation technologies: 1) how did they come into being, 2) evolution, 3) positive and negative impacts (intended or unintended)
 - o Railway
 - o Mass rapid transit
 - o Automobiles
 - o Asphalt
 - o Ride-share technologies
- In-class exercise 2

Week 4: History: architecture and modern home 历史: 建筑与现代居所(2-credit hours)

- Review of last class
- Building technologies: 1) how did they come into being, 2) evolution, 3) positive and negative impacts
 - o Concrete
 - o The Crystal Palace: steel and glass
 - o Skyscrapers
 - o Computerized design and irregular forms
 - o Prefabricated buildings
- Modern urban home and supporting technologies: 1) how did they come into being, 2) evolution, 3) positive and negative impacts (intended or unintended)
 - o Airconditioning
 - o In the living room: e.g. TVs, sofa and bolsters, etc.
 - o In the kitchen: e.g. refrigerators, microwaves, etc.
 - o In the bathroom: e.g. toilet etc.

Week 5: History: Communication technologies and urban life 历史: 通讯技术与城市生活 (2-credit hours)

- Review of last class
- Four main communication technologies over time: 1) how did they come into being, 2) evolution, 3) positive and negative impacts (intended or unintended)
 - o Telegraphs
 - o Telephones
 - o The Internet
 - o Mobiles Phones
- In-class exercise 3

Week 6: Individual Presentation 个人演示 (2-credit hours)

Week 7: Individual Presentation 个人演示 (2-credit hours)

Week 8: Theory: How to theorize the relationship between technology and society – STS Studies 理论: 如何理解

科技与社会之间的关系——科学技术研究 (2-credit hours)

- Review of last class
- Definition: Science, Technology, and Society (STS) studies
- The evolution of STS studies
- Key themes of STS studies, key scholars, and their arguments
 - History and philosophy of science
 - History of technology
 - Science, technology, and society (sociological, anthropological, cultural studies)
 - Policy studies
- In-class exercise 4

Week 9: What is a good city? Utopian theories, sustainability, and related debates 什么是美好城市：乌托邦理论、可持续性及相关争论 (2-credit hours)

- Review of last class
- Utopian urbanism
 - History of utopia thinking
 - Models of utopian cities
- Criteria for a good city: sustainability
 - Different definitions and measures of sustainability
 - How to understand urban sustainability?
- How technology can contribute to the making of good cities?
- How technologies can create bad cities?

Week 10: Theory: How to theorize the relationship between infrastructure and society 理论：如何理解基础设施与社会之间的关系 (2-credit hours)

- Review of last class
- Infrastructure studies: Key theoretical approaches
 - Political economy
 - Poststructuralism
 - Actor-Network Theory
- In-class exercise 5

Week 11: The future city: Sustainable city 未来城市：可持续的城市 (2-credit hours)

- Review of last class
- Concepts clarified: sustainability
- Green city, low-carbon city, etc.
- History of the sustainable city
- Key strategies of sustainable urbanism
- Critique
- In-class exercise 6

Week 12: The future city: Smart City-1 未来城市：智慧之城-1 (2-credit hours)

- Review of last class
- Smart city, intelligent city, and other notions
- The evolution of the smart city thesis
- The dominant framework of the smart city model: key strategies and technologies
 - Smart transportation
 - Smart buildings
 - Smart home
 - Smart economy
- Critique

Week 13: The future city: Smart City-2 未来城市：智慧之城-2 (2-credit hours)

- Review of last class
- Case studies: Projects of the MIT Senseable City Lab
- Case studies: Projects of the Future City Lab at Singapore- ETH (Zürich) Centre
- In-class exercise 7

Week 14: The future city: Innovative city 未来城市: 创新之城 (2-credit hours)

- Review of last class
- Concepts clarified: Maker, Hacker, Fab lab, etc.
- The Maker Movement: History
- Different forms of creative space in cities
- Experiments and explorations around the world
- Critique
- In-class exercise 8

Week 15: Group presentation 小组演示 (2-credit hours)

Week 16: Group presentation and course conclusion 小组演示及课程结语 (2-credit hours)

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

NA

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%		The attendance record is only used to decide whether students should receive a "Failure" in the course (if they miss more than three classes since the fourth week).
课堂表现 Class Performance				
小测验 Quiz				
课程项目 Projects				
平时作业 Assignments		40%		Eight in-class open-book exercises, in total worth 40% of the final grade. Each exercise comprises a set of short answer questions.
期中考试 Mid-Term Test		32%		Mid-term project, including a presentation of ten minutes (16% of the final grade) and a written report (16% of the final grade).
期末考试 Final Exam				
期末报告 Final Presentation		18%		Group research project, including a group presentation (18% of the final grade).
其它 (可根据需要 改写以上评估方 式)				

Others (The above may be modified as necessary)

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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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