

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	建筑技术与文化 Architectural Technology and Culture
2.	授课院系 Originating Department	社会科学中心 Center for Social Sciences
3.	课程编号 Course Code	SS165
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	春季 Spring
7.	授课语言 Teaching Language	中英双语 Chinese and 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)	赵妍 ZHAO Yan 青年会士 Junior Fellow 南方科技大学人文社会科学荣誉学会 Society of Fellows in the Liberal Arts, SUSTech zhaoy@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
	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

本课程旨借由建筑技术语境带领学生去认识人类自身文明进程，培养学生用发展的眼光审视技术的流变。通过对建筑技术流变与文化的通识性学习，帮助学生建立技术与文化交互的双向思维模式；通过对建筑技术与文化的诸多议题的系列讲授，学生们得以开阔人文视野，增进多元价值观的培养；通过课堂讲述和作业，学生们还将熟悉基本的建筑技术语汇与基础的模型制作与摄影技巧。

This course aims to guide students to understand human civilization through the context of architectural technology, and train students to revisit technology from the perspective of development. Let students establish a two-way thinking pattern between technology and culture through the general study of architectural technology and culture. Through a series of lectures on architectural technology and culture, students are able to broaden their vision and enhance multiple values. Through class presentations and assignments, students will be familiar with basic architectural technical vocabulary and basic skills of modelling and photographing.

16. 预达学习成果 Learning Outcomes

本课程预期让学生掌握以下技能和知识：

- 熟悉基本的建筑技术语汇；
- 掌握基本的建筑模型制作与摄影技巧；
- 培养技术与文化交互的双向思维模式；



Upon successful completion, students will be able to:

- Know basic vocabulary of architectural technology
- Learn basic skills of architectural modelling and photographing
- Cultivate two-way thinking mode between technology and culture

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.)

第一课：课程介绍（2学时）

- ◆ 课程安排
- ◆ 建筑学与建筑技术
- ◆ 建筑模型摄影简单技法
- ◆ 考核安排

第二课：传统建筑材料与技术1/4——竹（2学时）

- ◆ 传统竹建筑起源与发展
- ◆ 竹材技术及相关建造技术的演进

第三课：传统建筑材料与技术2/4——木（2学时）

- ◆ 木材技术与建造技术的演进
- ◆ 木材回收与再利用



第四课：传统建筑材料与技术3/4——石（2学时）

- ◆ 传统砖石建筑的起源与发展
- ◆ 石材技术及相关建造技术的演进

第五课：传统建筑材料与技术4/4——土（2学时）

- ◆ 传统夯土建筑的起源与发展
- ◆ 夯土建造技术的演进发展

第六课：现代建筑材料与技术1/3——钢（2学时）

- ◆ 现代钢结构建筑的溯源与发展
- ◆ 钢铁材料技术及相关建造技术的演进

第七课：现代建筑材料与技术2/3——砼（2学时）

- ◆ 现代钢筋混凝土结构建筑的溯源与发展
- ◆ 钢筋混凝土材料技术及相关建造技术的演进

第八课与第九课：期中课堂汇报与点评（2学时）

学生分组选取竹、木、石、土任一种材料作为建材，在教师指导下设计搭建一个穹顶模型。并借助影像、分析图、图示等形式进行记录与分析，并最终以课堂陈述和图文报告的形式呈现（字数：1000字）

第十课：现代建筑材料与技术3/3——新的变革（2学时）

- ◆ 数字时代的建筑设计变革
- ◆ 传统建筑何去何从

第十一课：当下与未来系列讲座1/4——高层建筑技术（2学时）

- ◆ 起源与发展
- ◆ 机械设备技术及演进之于高层建筑设计

第十二课：当下与未来系列讲座2/4——绿色建筑技术（2学时）

- ◆ 起源与发展
- ◆ 中国绿色建筑的主要技术体系
- ◆ 绿色建筑的新进展
 - 低能耗建筑
 - 零碳建筑
 - 健康建筑
- ◆ 绿色建筑与我们的关系

第十三课：当下与未来系列讲座3/4——轻型建筑技术（2学时）

- ◆ 起源与发展
- ◆ 预制装配技术及演进之于轻型建筑技术设计

第十四课：当下与未来系列讲座4/4——适老性建筑技术（2学时）

- ◆ 起源与发展
- ◆ 适老性建筑设计的技术走向

第十五课与第十六课：期末课堂汇报与点评（4学时）

学生各自选取课程讲授内容中一个感兴趣的话题结合自身思考与文献阅读完成期末报告：可借助影像、制图、模型等形式进行记录分析，并最终以课堂陈述和图文报告的形式呈现（字数：2000-3000字）。

Lecture 1 Course introduction (2 credit hours)

- ◆ Course introduction
- ◆ Architecture and architectural technology
- ◆ Photography of architectural mock-up
- ◆ Course assessment

Lesson 2: Traditional building materials and techniques 1/4: bamboo (2 credit hours)

- ◆ Beginning and development of traditional bamboo buildings
- ◆ Material technology and construction technology of bamboo
- ◆

Lesson 3: Traditional building materials and techniques 2/4: wood (2 credit hours)

- ◆ Beginning and development of traditional wooden buildings

◆	Material technology and construction technology of timber
Lesson 4: Traditional building materials and techniques 3/4: stone (2 credit hours)	
◆	Beginning and development of traditional masonry
◆	Material technology and construction technology of masonry
Lecture 5: Traditional building materials and techniques 4/4: earth (2 credit hours)	
◆	Beginning and development of traditional rammed earth buildings
◆	Material technology and construction technology of rammed earth
Lesson 6: Modern building materials and technology 1/3: steel (2 credit hours)	
◆	Beginning and development of traditional steel buildings
◆	Material technology and construction technology of steel buildings
Lesson 7: Modern building materials and technology 2/3: concrete (2 credit hours)	
◆	Beginning and development of traditional concrete buildings
◆	Material technology and construction technology of concrete buildings
Lesson 8&9: Mid-term Class Presentation and Review (2 credit hours)	
Students in groups need to choose anyone from bamboo, wood, stone or earth as building materials to design and build a dome model. Based on what they had learned and then to complete the midterm report: The report can use images, diagrams and models (physical model and digital model). The final version should be presented in class and in form of written report. (1000 words).	
Lesson 10: Modern building materials and technology 3/3: change for future (2 credit hours)	
◆	Digital age and building technology
◆	The future way of traditional building
Lesson 11: Lecture Series of present and future 1/4: high-rise buildings (2 credit hours)	
◆	Origin and development
◆	Mechanical equipment technology and high-rise building design
Lesson 12: Lecture Series of present and future 2/4: green buildings (2 credit hours)	
◆	Origin and development
◆	The main technical system of green building in China
◆	New progress in green building
	Low energy building
	Zero carbon building
	Healthy building
◆	Green building and daily life
Lesson 13: Lecture Series of present and future 3/4: lightweight construction (2 credit hours)	
◆	Origin and development
◆	Prefabrication technology and lightweight building design
◆	
Lesson 14: Lecture Series of present and future 4/4: architecture for elderly (2 credit hours)	
◆	Origin and development
◆	Technology trends in architecture for elderly
Lesson 15&16: Final Class Presentation and Review (4 credit hours)	
Each student selects one topic in the lectures and completes the final report combining their own thinking and literature reading: The report can use images, diagrams, models (physical model and digital model). The final version should be presented in class and in form of written report (2000-3000 words).	

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

本课程采用自编教材。The course instructor will provide supplementary readings before each session of the lectures.

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
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出勤 Attendance		10%		无故缺席 5 次及以上为不通过 Students with absence of 5 times or more will be noted as "not passed"
课堂表现 Class Performance		10%		参与课堂问题讨论 Participation in class discussion
小测验 Quiz				
课程项目 Projects				
平时作业 Assignments				
期中考试 Mid-Term Test		40% (课堂汇报 20%+报告 20%) (presentation 20%+report 20%)		学生分组选取竹、木、石、土任一种材料作为建材，在教师指导下设计搭建一个穹顶模型。并借助影像、分析图、图示等形式进行记录与分析，并最终在课堂陈述和图文报告的形式呈现（1000 字） Students in groups need to choose anyone from bamboo, wood, stone or earth as building materials to design and build a dome model. Based on what they had learned and then to complete the midterm report: The report can use images, diagrams and models (physical model and digital model). The final version should be presented in class and in form of written report. (1000 words).
期末考试 Final Exam				
期末报告 Final Presentation		40% (课堂汇报 20%+报告 20%) (presentation 20%+report 20%)		学生各自选取课程讲授内容中一个感兴趣的话题结合自身思考与文献阅读完成期末报告：可借助影像、制图、模型等形式进行记录分析，并最终在课堂陈述和图文报告的形式呈现（字数：2000-3000字）。 Each student selects one topic in the lectures and completes the final report combining their own thinking and literature reading: The report can use images, diagrams, models (physical model and digital model). The final version should be presented in class and in form of written report (2000-3000 words).
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