

西安交通大学

《建筑技术工坊-2（建筑构造-2）》课程教学大纲

一、课程基本信息

I. Basic Information

课程名称	建筑技术工坊-2（建筑构造-2）		
Course Title	Building Technology Studio 2 Building Components and System Design		
课程编号			
Course Number			
课程学分	2	总学时	32
Credits		Credit Hours	
学时分配	理论: <u>10</u> 实验: <u>22</u> 上机: <u> </u> 课外: <u> </u> (课外学时不计入总学时)		
Assignment of Credit Hours	Lecture: <u>10</u> Studio: <u>22</u> Practice in the IT room: 0 Extracurricular: <u> </u> (Extracurricular hours do not count towards the total number of hours.)		
课程类型	<input type="checkbox"/> 公共课程 Public Course <input type="checkbox"/> 通识课程 General Education Course <input type="checkbox"/> 学科门类基础课 <input type="checkbox"/> 专业大类基础课 <input checked="" type="checkbox"/> 专业核心课 Specialized Core Course <input type="checkbox"/> 专业选修课 Specialized Elective Course <input type="checkbox"/> 集中实践 Intensive Practice		
开课学期	<input type="checkbox"/> 01-1 <input type="checkbox"/> 01-2 <input type="checkbox"/> 02-1 <input checked="" type="checkbox"/> 2-2 <input type="checkbox"/> 03-1 <input type="checkbox"/> 03-2		

	□4-1 □4-2 □5-1 □5-2
先修课程 Prerequisites	建筑技术工作室 1 — 技术设计架构 Building Technology Studio-1 — Technology Design Architecture
教材、参考书 及其他资料 Materials (Textbook, Bibliography or Referencing and Supplementary Materials)	[1] Deplazes A., Constructing Architecture, Materials Processes Structures. A handbook, Birkhauser, 2005. ISBN: 9783764371906 [2] Koolhaas R. et al., Elements of Architecture, Taschen, 2022. ISBN: 978-3836556149 More literature will be provided during the Studio activities.

二、课程目标及学生应达到的能力

II. Course Objectives and Expected learning outcomes

(工科专业对标工程教育认证标准中专业毕业要求的 12 条具体指标点，其他专业对标行业/评估标准中专业毕业要求的具体指标点)

1. Students will gain knowledge and understanding of the tools and techniques for technological and environmental design.
2. Students will be capable of coordinating in the design different construction issues respecting environmental, physical, and regulatory constraints.
3. Students will be capable of providing a coordinated and multidisciplinary management of the technological, environmental, and structural themes of the design, on the base of priority requirements, decisions anticipation and evaluation of the various available technical options and of the application of the tools to support design decisions.

课程目标与专业毕业要求的关联关系

Correlation between course objectives and graduation requirements
for the program

毕业要求：

Graduation Requirements

Students of this major should meet the following graduation requirements in terms of knowledge, ability and calibre.

A. Possess broad theoretical knowledge of humanities and social sciences and natural sciences, strong scientific literacy, humanistic and artistic dispositions, and sound physical and mental well-being.

B. Have solid theoretical knowledge related to architecture, master the

basic principles of architectural design, history and theory of architecture, architecture and behaviour, the safety of architecture, building structure, building materials and construction, control of the physical environment of buildings, urban and rural planning and landscape design, economy and regulations, systems and professional codes, responsibilities of architects and other related knowledge.

C. Have the methods and skills of architectural design and related planning design, master the process and methods of architectural design and have a strong ability to express and practice architectural design, as well as good creative thinking and artistic creation ability and the ability to analyze problems and solve them comprehensively.

D. Have an international open vision and the ability to communicate, compete and cooperate across cultures.

毕业要求 课程目标	A	B	C	D
1	M	H	H	H
2	M	H	H	H
3	M	H	H	H

注：毕业要求中 A、B、C、D、E、F、G、…对应毕业要求中各项具体内容。课程目标与专业毕业要求的关联关系用 H/M/L 标注。

Note: A, B, C and D indicate the specific aspects of the graduation requirements. H, M and L refer to a strong, medium and weak correlation between the course objectives to the graduation requirements respectively.

三、教学内容简介

III. Description of teaching contents

章节顺序	章节名称 Chapter Title	知识点 Teaching Points	参考学时 Credit Hours
1	Fundamental Elements of Architecture	A recap of the various elements that compose contemporary architecture, based also on students critical thinking.	10%
2	Contemporary Building Technologies	Introducing students to building and architectural technologies currently used to build or assemble architectures.	10%
3	Built Contemporary Examples	Introducing students to several study cases to develop their critical thinking.	10%
4	Technological Design as a Method	Students (individually or in group) will develop an architectural project with focus on technology details.	70%

四、教学安排详表

IV. Teaching Arrangements

序号	教学内容 Teaching contents	学时分配 Credit Hours	教学方式 Teaching Methods	教学要求 (知识要求及能力要求) Learning Objectives (knowledge objective & ability objective)	对课程目标的支撑关系 Related to which Course Objective
1	<i>Fundamental Elements of</i>	10%	Frontal lecture and	掌握: 提高对构成建筑的元素的了解。 了解: 如何选择和设计建筑的各种元素。	ALL

	<i>Architecture</i>		critic discussions	Grasp: Improving the knowledge of the elements that compose built architecture. Understand: How to select and design the various elements of architecture.	
2	<i>Contemporary Building Technologies</i>	10%	Frontal lecture and critic discussions	掌握: 提高对当代建筑技术要素的了解。 了解: 如何区分和选择正确的建筑技术以获得正确的建筑所需性能。 Grasp: Improving the knowledge of the elements on contemporary building technologies. Understand: How to distinguish and select the correct architectural technology for the correct building required performance.	ALL
3	<i>Built Contemporary Examples</i>	10%	Frontal lecture and critic discussions	掌握: 通过建筑技术和可持续性的镜头阅读建筑架构的广泛介绍来提高知识。 了解: 建筑技术如何实现建筑物的最终性能并在正确的建筑设计中进行协作。 Grasp: Improving the knowledge through a wide presentation of build architecture read through the lens of architectural technology and sustainability. Understand: How building technologies can implement the final performance of the buildings and collaborate in a correct architectural design.	ALL
4	<i>Technological Design as a Method</i>	70%	Assisted and tutored in class design activities, critiques, and discussions	掌握: 通过设计学习。 学生将在老师的严格指导下, 以小组或个人的形式开发一个简单的项目, 从概念到细节。 了解: 如何开发项目设计, 对材料、建筑技术和设计做出正确的选择。 Grasp: Learning by Design. Students will develop a simple project, in group or individually, from concept to the detail under strict teacher's assistance. Understand: How to develop a project design making right choices about materials, building technologies, and design.	ALL

注: 对课程目标的支撑关系可填写大纲中第二部分课程目标的相应序号。

The column *Related to which Course Objective* can be filled in with the number of the corresponding course objective in Part II.

五、实践环节

V. Studio/Lab

实验编号 No.	实验名称 Subject Name	实验内容 Contents	教学方法 Teaching Methods	对课程目标的 支撑关系 Related to which Course Objective
1	<i>Technological Design as a Method</i>	<p>Students are called to respond to the relationship between light and massive as characterizing elements of the technological constructive nodes and their architectural design, with attention to the sustainable and energy saving features and use of high innovative value building materials.</p> <p>The students are requested, according to a given project brief, to study and develop proposals in a way in which aspects related to technological and sustainable design and architecture design are properly integrated.</p>	<p>The students will be guided and supported during all the Studio activities, also in the planning of built structures, throughout the application of documents and relative drawings from the concept to the preliminary, definitive, and executive(detailed) design.</p> <p>Students are invited to guarantee the maximum interaction during all the in-room compulsory activities</p>	ALL

注：对课程目标的支撑关系可填写大纲中第二部分课程目标的相应序号

The column *Related to which Course Objective* can be filled in with the number of the corresponding course objective in Part II.

六、课外学时分配

VI. Extracurricular Practice

章节顺序	内容 Contents	参考学时 Credit Hours	对课程目标的 支撑关系 Related to which Course Objective
0.	n/a	n/a	n/a

注：对课程目标的支撑关系可填写大纲中第二部分课程目标的相应序号。

七、考核方式及成绩构成

VII. Evaluation and Composition of Grades

Building Technology Studio 2 students will demonstrate their completed skills at the final exam, when there will be an oral discussion with teaching staff about the Studio Project results (assessment of final test delivered as tables and written reports) obtained during the supported and autonomous learning activities.

大纲制定者：Luca Maria Francesco Fabris

大纲审核者：_____

最后修订时间：____年__月__日