

哈尔滨工业大学深圳国际设计学院  
Shenzhen International School of Design,  
Harbin Institute of Technology

**建筑学专业本科培养方案与课程体系**  
**Curricula Program for Architecture**  
**(Bachelor)**

(评审稿)  
(Draft For Review)

2022 年 4 月  
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# 建筑学专业本科培养方案

## Curricula Program for Architecture (Bachelor)

### 1 培养目标 Learning Objective

建筑学专业培养具备广博的自然科学与人文知识、建筑及相关学科理论知识、专业技能和创新思维能力，具备跨学科知识与能力，具有职业领导力及团队协作与沟通表达能力，在应对当今世界的气候变化、数字化和城市化等人居环境挑战性问题过程中，具有全球化背景下的特殊社会责任意识，恪守职业信条，并创新性解决问题能力的杰出人才。

The major of architecture cultivate broad theoretical knowledge, professional skills and innovative thinking ability in natural sciences, humanities and architecture and related disciplines, interdisciplinary knowledge and ability, professional leadership and teamwork and communication skills, in response to today's world. In the process of challenging human settlement issues such as climate change, digitalization and urbanization, students should have a special sense of social responsibility in the context of globalization, abide by professional creeds, and innovative problem-solving abilities.

### 2 培养要求 Learning Outcome

毕业生应掌握或获得以下八个方面的知识和能力：

1.具有作为一个创意工作者的自我理解，良好的思想品德、社会公德和职业道德；具有人文社会科学素养、社会责任感，能够在工程实践中理解并遵守工程职业道德和规范，履行建筑师职责。

2.了解建筑和城市设计在当前全球挑战中的作用，能够基于科学原理，利用自然科学和社会科学的相关手段与方法，研究建筑设计问题，建立终身学习的意识，具有自主研究的能力。

3.意识到建筑专业的社会影响，能够基于建筑学知识合理分析、评价建筑及建筑设计方案对社会、文化、人居环境的影响，并理解建筑师应承担的可持续发展的社会责任。

4.具有科学的工作和思维方式，对问题具有批判性思维与评价能力，能够将数学、

自然科学、建筑学基础知识和专业知识用于解决建筑设计问题，并通过文献研究，识别、表达、分析建筑设计问题，以获得有效结论。

5.具备处理复杂事务的能力，能够综合考虑功能、技术、艺术、经济及环境等因素，理解并掌握建筑设计项目管理与决策方法，解决复杂多元的建筑设计问题，并能在多学科环境中应用。

6.了解人类的感知和需求，并具备将现代科技手段应用于社会文化背景中的能力。

7.具有多学科配合过程中平等沟通的技巧，能够在多学科背景下的团队中承担个体、团队成员以及负责人的角色；能够就建筑设计问题与业界同行及社会公众进行有效沟通和交流，并具备一定的国际视野，能够在跨文化背景下进行沟通和交流。

8.了解和掌握当代最新的设计技术知识，能够针对建筑设计问题，开发、选择与使用恰当的技术、资源、现代工程工具和信息技术工具，包括对建筑设计问题的预测与模拟，并能够理解其局限性。

Graduates should master or acquire knowledge and abilities in the following areas:

1.Self-understanding as a creative person, have good social and professional ethics; have humanities and social science literacy, sense of social responsibility, and able to understand and abide by engineering professional ethics and norms in engineering practice, and perform the duties of an architect.

2.Understanding the role of architecture and urban design in current global challenges, able to study architectural design issues based on scientific principles, using relevant methods and methods of natural science and social science; establish a lifelong learning awareness, and have the ability to conduct independent research.

3.Have awareness of societal impact of the profession, able to reasonably analyze and evaluate the impact of buildings and architectural design schemes on society, culture, and human settlements based on architectural knowledge, and understand the social responsibility of sustainable development that architects should bear.

4.Have scientific working and thinking, critical thinking and evaluation skills for problems, and able to use basic knowledge and professional knowledge of mathematics, natural sciences, and architecture to solve architectural design problems, and identify, express, and analyse architectural design problems through literature research to obtain effective conclusions.

5.Ability to handle complexity, and comprehensively consider factors such as function, technology, art, economy and environment; understand and master architectural design project management and decision-making methods, which leads to the solving of complex and diverse architectural design problems, and able to apply them in a multidisciplinary environment

6.Understanding of human perception and needs and have the ability to apply modern technology to the social and cultural background.

7.Have impartiality and communication skills within multidisciplinary processes, able to assume the roles of individuals, team members and leaders in a team with a multidisciplinary background; able to effectively communicate with colleagues and the public on architectural design issues and have an international perspective and able to work in a cross-cultural context.

8.Have state-of-the-art knowledge of current design techniques, able to develop, select and use appropriate technology, resources, modern engineering tools and information technology tools for architectural design problems, including the prediction and simulation of architectural design problems, and understand their limitations.

### **3 专业核心课程 Base Core Courses**

专业核心课程：跨专业基础课 I、跨专业基础课 II、跨专业基础课 III、建筑设计 I、建筑文化 I、建造技术 I、建筑设计 II、建筑文化 II、建造技术 II、生活、建筑文化 III、建筑技术 III、公共建筑、建筑文化 IV、建筑技术 IV、城市项目 I、建筑文化 V、城市项目 II、建筑文化 VI、本科项目展示、建筑文化 VII 等工作坊和研讨课程。

Base Core Course: Interdisciplinary Foundation Course I, Interdisciplinary Foundation Course II, Interdisciplinary Foundation Course III, Architectural Design I, Architecture Culture I, Building Technology I, Architectural Design II, Architecture Culture II, Building Technology II, Living, Architecture Culture III, Architecture Technology III, Public Building, Architecture Culture IV, Architecture Technology IV, Urban Project I, Architecture Culture V, Urban Project II, Architecture Culture VI, Bachelor Project preparation, Architecture Culture VII, etc..

## 4 毕业要求 Graduation Requirement

### (一) 课程类别和学分要求 Course Categories and Credit Requirements

类别 Category	课程类别 Course Categories	哈工大学 分 HIT Credit	%	学分 合计 Total Credit	%
通识教育 General Education	公共基础课程 Public Fundamental Course	28	14.8%	45	23.7%
	数学与自然科学基础课程 Maths and Natural Science Fundamental Course	9	4.7%		
	文化素质教育课程 Cultural Education Course	8	4.2%		
专业教育 Professional Education	跨专业基础课程 Interdisciplinary Foundation Course	14	7.4%	144.5	76.3%
	专业核心课程 Base Core Module	82	43.3%		
	选修课程 Satellite	36.5	19.3%		
	毕业设计（论文） Thesis Project	12	6.3%		
合 计 Total		189.5	100%	189.5	100%

### (二) 修业年限、毕业要求及授予学位类型 Length of Study, Graduation Requirement and Degree Awarded

学制：五年。

授予学位：哈尔滨工业大学工学学士学位、瑞士苏黎世艺术大学艺术学学士学位。

毕业学分要求：学生应达到学校对本科毕业生提出的德、智、体、美等方面的要求，完成培养方案规定的全部课程学习及实践环节训练并达到双方学位授予要求，修满 189.5 学分，其中通识教育课程 45 学分，专业教育课程 144.5 学分，托福 80 分以上或

雅思 6.5 以上（需在第一学年结束前完成），毕业设计（论文）答辩合格，方可准予毕业。

Length of Study: Five years.

Degree awarded: Bachelor of Arts of Zurich University of the Arts and the Bachelor of Engineering of Harbin Institute of Technology.

Graduation credit requirement: Students should meet the requirements of the school for undergraduate graduates in terms of morality, intelligence, physique, beauty, etc., complete all the course study and practical training stipulated in the training plan, and meet the degree awarding requirements of HIT and ZHdK, and complete 189.5 credits, including 45 credits of general education courses, 144.5 credits of professional education courses, TOEFL score of 80 or above or IELTS of 6.5 or above (acquire by the end of the first academic year), and dissertation defense can be approved for graduation.

## **5 学年教学进程表 Academic Year Schedule**

建筑学专业本科第一学年教学进程表

Teaching Schedule for the First Academic Year of Architecture (Bachelor)

开课学期 Semester	课程编号 Code	课程名称 Course Name	哈工大 学分 HIT Credit	哈工大 学时 HIT Study Hour	欧洲 学分 ECTS	授课模式 Teaching Mode				授课方 Taught By	授课 教师 Lecturer	备注 Note
						讲授 Lecture	实验 Lab	工作坊 Studio	其他 Others			
秋季 Autumn	MILT1003	军事技能 Military Skills	2	2周 2 weeks					√	哈工大 HIT		
	MILT1002	军事理论 Military Theory	2	36					√	哈工大 HIT		
	PE1001A	体育 A Physical Education A	1	32					√	哈工大 HIT		
	GEIP1015	思想道德与法治 Ideological and Moral Cultivation and Law	2.5	40		√				哈工大 HIT		
	GEIP1014	思想政治理论实践课 Ideological and Political Theory Practice Course	2	32		√				哈工大 HIT		
	SDFC2001	<b>跨专业基础课 I</b> <b>Interdisciplinary Foundation Course I</b>	<b>7.5</b>	<b>120</b>	<b>15</b>	√						

	SOSC1063	大学生心理健康 Mental Health Education	2	32		√				哈工大 HIT		
	MATH1012A	高等数学 IIA Advanced Mathematics IIA	3	48		√				哈工大 HIT		
	<b>Subtotal: Y1 Semester 1</b> <b>小计: 第一学年第一学期</b>		<b>22</b>	<b>340</b>	<b>15</b>							
春季 Spring	GEIP1016	中国近现代史纲要 Outline of Modern and Contemporary History of China	2.5	40		√				哈工大 HIT		
	PE1001B	体育 B Physical Education B	1	32				√		哈工大 HIT		
	SDFC2002	<b>跨专业基础课 II</b> <b>Interdisciplinary Foundation</b> <b>Course II</b>	<b>2.5</b>	<b>40</b>	<b>5</b>	√						
	SDAT1001	信息科学基础 Information Science Fundamentals	2	32		√				哈工大 HIT		
	PHYS1001A	大学物理 I University Physics II	4	64		√				哈工大 HIT		
		国家安全教育	1	16								
	MATH1012B	高等数学 IIB Advanced Mathematics IIB	2	32		√				哈工大 HIT		
	GEIP1018	习近平新时代中国特色社会主义思想概论	2.5	40		√				哈工大 HIT		



		Introduction to Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era									
	<b>Subtotal: Y1 Semester 2</b> 小计：第一学年第二学期		<b>17.5</b>	<b>296</b>	<b>5</b>						
夏季 Summer	SDFC2003	<b>跨专业基础课 III</b> <b>Interdisciplinary Foundation</b> <b>Course III</b>	<b>4</b>	<b>64</b>	<b>8</b>	√					
	<b>Subtotal: Y1 Summer Semester</b> 小计：第一学年夏季学期		<b>4</b>	<b>64</b>	<b>8</b>						
<b>第一学年合计</b> <b>Subtotal: Year 1</b>			<b>43.5</b>	<b>700</b>	<b>28</b>						
备注 Note	<p>第一学年学生需达到托福 80 分以上或雅思 6.5 以上，修完跨专业基础课全部课程，并通过考核，方能获得苏黎世艺术大学的入学资格。 In the first academic year, students can only be admitted to the Zurich University of the Arts after they have achieved TOEFL score of 80 or above or IELTS of 6.5 or above, completed all the Interdisciplinary Foundation Courses and pass the examination by the end of the first academic year.</p>										

建筑学专业本科第二学年教学进程表

Teaching Schedule for the Second Academic Year of Architecture (Bachelor)

开课学期 Semester	课程编号 Code	课程名称 Course Name	哈工大 学分 HIT Credit	哈工大 学时 HIT Study Hour	欧洲 学分 ECTS	授课模式 Teaching Mode				授课方 Taught By	授课 教师 Lecturer	备注 Note
						讲授 Lecture	实 验 Lab	工作 坊 Studio	其他 Others			
秋季 Autumn	GEIP1011	马克思主义基本原理 The Basic Theory of Marxism	3	48		√				哈工大 HIT		
	PE1001C	体育 C Physical Education C	1	32					√	哈工大 HIT		
	SDAT2003	工作坊: 建筑设计 I Studio Architectural Design I	5	80	7			√				
	SDAT2004	建筑文化 1 Architecture Culture I	2	32	4	√						
	SDAT2005	建造技术 1 Building Technology I	4	64	6	√						
	SA**3***	选修课 Satellite	3	48	6	√	√					
		文化素质教育课程 Cultural Education Course	2	32	4	√				哈工大 HIT		
	Subtotal: Y2 Semester 1 小计: 第二学年第一学期			20	336	27						

春季 Spring	GEIP1017	毛泽东思想和中国特色社会主义 理论体系概论 Introductation to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics	2.5	40		√				哈工大 HIT		
	PE1001D	体育 D Physical Education D	1	32				√		哈工大 HIT		
	SDAT2006	工作坊: 建筑设计 II Studio Architectural Design II	5	80	7			√				
	SDAT2007	建筑文化 II Architecture Culture II	2	32	4	√						
	SDAT2008	建造技术 II Building Technology II	4	64	6	√						
	SA**3***	选修课 Satellite	3	48	6	√	√					
		文化素质教育课程 Cultural Education Course	2	32	4	√				哈工大 HIT		
	<b>Subtotal: Y2 Semester 2</b> 小计: 第二学年第二学期			<b>19.5</b>	<b>328</b>	<b>27</b>						
夏季 Summer	SA**3***	选修课 Satellite	3	48	6	√	√					
	<b>Subtotal: Y2 Summer Semester</b> 小计: 第二学年夏季学期			<b>3</b>	<b>48</b>	<b>6</b>						

<p style="text-align: center;"><b>第二学年合计</b> <b>Subtotal: Year 2</b></p>	<b>42.5</b>	<b>712</b>	<b>60</b>							
<p>备注 Note</p>	<p>1、第二学年学生只能从主题、实验和博物馆中选择“选修课”课程。 In the second academic year students can only choose "Ellective" courses from Content, Lab, and Museum Satellites.</p> <p>2、第二学年的秋季学期学生不能同时选择实验选修课和博物馆选修课。 In the fall Semester of second academic year, students should avoid choosing both Lab and Museum Satellites.</p>									

建筑学专业本科第三学年教学进程表

Teaching Schedule for the Third Academic Year of Architecture (Bachelor)

开课学期 Semester	课程编号 Code	课程名称 Course Name	哈工大学分 HIT Credit	哈工大学时 HIT Study Hour	欧洲学分 ECTS	授课模式 Teaching Mode				授课方 Taught By	授课教师 Lecturer	备注 Note
						讲授 Lecture	实验 Lab	工作坊 Studio	其他 Others			
	SDAT3001	工作坊：生活 Studio Living	5	80	7			√				
	SDAT3002	建筑文化 III Architecture Culture III	4	64	6	√						
	SDAT3003	建筑技术 III Architecture Technology III	2	32	4	√						
	SA**3***	<b>选修课</b> <b>Satellite</b>	<b>3</b>	<b>48</b>	<b>6</b>	√	√					
		<b>文化素质教育课程</b> <b>Cultural Education Course</b>	<b>2</b>	<b>32</b>	<b>4</b>	√				哈工大 HIT		
	<b>Subtotal: Y3 Semester 1</b> <b>小计：第三学年第一学期</b>		<b>16</b>	<b>256</b>	<b>27</b>							
春季 Spring	GEIP1010	形势与政策 Situation and Policy	2	32		√				哈工大 HIT		

	SDAT3004	工作坊: 公共建筑 Studio Public Building	5	80	7			√					
	SDAT3005	建筑文化 IV Architecture Culture IV	4	64	6	√							
	SDAT3006	建筑技术 IV Architecture Technology IV	2	32	4	√							
	SA**3***	<b>选修课</b> <b>Satellite</b>	<b>3</b>	<b>48</b>	<b>6</b>	√	√						
		<b>文化素质教育课程</b> <b>Cultural Education Course</b>	<b>2</b>	<b>32</b>	<b>4</b>	√					哈工大 HIT		
	<b>Subtotal: Y3 Semester 2</b> <b>小计: 第三学年第二学期</b>		<b>18</b>	<b>288</b>	<b>27</b>								
夏季 Summer	SA**3***	<b>选修课</b> <b>Satellite</b>	<b>3</b>	<b>48</b>	<b>6</b>	√	√						
	<b>Subtotal: Y3 Summer Semester</b> <b>小计: 第三学年夏季学期</b>		<b>3</b>	<b>48</b>	<b>6</b>								
<b>第三学年合计</b> <b>Subtotal: Year 3</b>			<b>37</b>	<b>592</b>	<b>60</b>								
备注 Note	<p>1、第三学年的秋季学期和春季学期学生只能从主题、海外、实践、产业、实验和博物馆中选择“选修课”课程。 In the Fall Semester and Spring Semester of the Third Academic Year students can only choose from Content, Abroad, Practice, Industry, Lab and Museum Satellites.</p> <p>2、第三学年的夏季学期学生可选任意选修课课程。 In the Summer Semester of the third Academic Year students can choose from any Satellites.</p>												

建筑学专业本科第四学年教学进程表

Teaching Schedule for the Fourth Academic Year of Architecture (Bachelor)

开课学期 Semester	课程编号 Code	课程名称 Course Name	哈工大学分 HIT Credit	哈工大学时 HIT Study Hour	欧洲 学分 ECTS	授课模式 Teaching Mode				授课方 Taught By	授课 教师 Lecturer	备注 Note
						讲授 Lecture	实验 Lab	工作坊 Studio	其他 Others			
秋季 Autumn	SDAT3007	工作坊：城市项目 I Studio Urban Project I	7	112	11			√				
	SDAT3008	建筑文化 V Architecture Culture V	4	64	6	√						
	SA**3***	<b>选修课</b> <b>Satellite</b>	5	80	10	√	√					
	<b>Subtotal: Y4 Semester 1</b> <b>小计：第四学年第一学期</b>			<b>16</b>	<b>256</b>	<b>27</b>						
春季 Spring	SDAT3009	工作坊：城市项目 II Studio Urban Project II	7	112	11			√				
	SDAT3010	建筑文化 VI Architecture Culture VI	4	64	6	√						
	SA**3***	<b>选修课</b> <b>Satellites</b>	5	80	10	√	√					
	<b>Subtotal: Y4 Semester 2</b> <b>小计：第四学年第二学期</b>			<b>16</b>	<b>256</b>	<b>27</b>						

夏季 Summer	SA**3***	选修课 Satellite	3	48	6	√	√					
	<b>Subtotal: Y4 Summer Semester</b> 小计: 第四学年夏季学期		3	48	6							
	<b>第四学年合计</b> <b>Subtotal: Year 4</b>		35	560	60							
备注 Note												



建筑学专业本科第五学年教学进程表

Teaching Schedule for the Fifth Academic Year of Architecture (Bachelor)

开课学期 Semester	课程编号 Code	课程名称 Course Name	哈工大学分 HIT Credit	哈工大学时 HIT Study Hour	欧洲学分 ECTS	授课模式 Teaching Mode				授课方 Taught By	授课教师 Lecturer	备注 Note
						讲授 Lecture	实验 Lab	工作坊 Studio	其他 Others			
秋季 Autumn	SDAT3011	本科项目展示 Bachelor Project preparation	11	176	15				√	哈工大 HIT		
	SDAT3012	建筑文化 VII Architecture Culture VII	3	48	4	√						
	SA**3***	选修课 Satellite	5.5	88	11	√	√					
	Subtotal: Y5 Semester 1 小计: 第五学年第一学期			19.5	312	30						
春季 Spring	SDAT3499	毕业设计 Thesis Project	12	192	30				√			
	Subtotal: Y5 Semester 2 小计: 第五学年第二学期			12	192	30						
第五学年合计 Subtotal: Year 5			31.5	504	60							

	<b>总计</b> <b>Subtotal</b>	<b>189.5</b>	<b>3068</b>	<b>268</b>						
备注 Note	<p>第五学年的秋季学期学生可选任意选修课课程，但必须包含实践或产业选修课。 In the Fifth Academic Year students can choose from any Satellites, but Practice or Industry must be included.</p>									

# Interdisciplinary Foundation Course I

**Course code:** SDFC2001      **Course name:** Interdisciplinary Foundation Course I

**Credit points:** ECTS 15   Chinese: 7.5

**Subjects related:** Architecture, Design

**Pre-requirement for the course:** None

**Faculty or department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

The course consists of 5 sub-courses, which can comprehensively train thinking and skills. The course mainly guides students to understand that creativity refers to those activities derived from personal creativity, skills, and talents, which have the potential to create wealth and employment opportunities through the generation and utilization of intellectual property rights. And learn about the key impacts of creative products on business, culture, and society. Study creative disciplines using different methods in habitual practice. Learn about the history of design and architecture, and the impact of architectural history on matter and style, medium and perception, society, and politics. In addition, discuss the influence and use of interdisciplinary methods, techniques, processes, materials, etc.

# Sub-course 1: Introduction in Creative Disciplines

**Credit points:** ECTS:2 Chinese:1

**Sub-course code:** BA FC 1

**Mandatory or elective:** Mandatory

## Learning objectives/aims and competencies

- The definition of “creative disciplines” generally. Globally and locally;
- The role of creatives and creativity for the Economy and Society;
- Typical labour markets-the “Creative Economy”;
- Creativity as a source for culture and business;
- The global influence of creativity;
- Solving problems and building up knowledge with creativity;
- The difference between Art, Design and Architecture;
- What is the fundamental difference and the similarities in the practice oriented and academic oriented creative disciplines?
- How does creative disciplines contribute to Business, Culture and Society?
- What are typical role models in the Creative Industry?
- What career opportunities are offered in the Creative Industry?

## Units

1 Professional

2 Academics

## Teaching and learning methods and formats

- Lectures
- Workshop
- Mentoring

## Envisaged practical skills

Gain an individual self-orientation and a mapping of interests.

## Envisaged theoretical and reflective skills

- Know the character, the position and the purpose of creative disciplines;

- Have an understanding of the different roles in the Industry and the Economy (i.e. Agencies, Start-Ups, Incubators, employed, self- employed, etc.);
- Position yourself in the framework of Creative Culture and -Economy;
- Understand “Creative Commons” as a global movement.

### **Envisaged scientific skills**

- Knowledge of rules and criteria in the creative academic and economic society. (i.e. scientific, research, PHD, lecturer, etc.), and the creative professional world (Business, Agencies etc.);
- Distinguish between creative culture, creative business and creative knowledge;
- The value of intellectual property as a fundamental result of the creative economy.

### **Sub-course conclusion and proof of performance**

None

## **Unit 1 Creative Professional**

(code: BA FC 1.1)

### **Profile of lecturer(s)**

Experienced practicing professional Designer or Architect.

### **Content**

- Outlook in the professional Design- and Architecture Scene, with examples of the field of work and the required; knowledge and experience for architects and designers;
- Self-reflection on the following field of study at SISD;
- Global and local views and insights;
- Role models and examples;
- Designers and Architects as a popular figures and role models;
- Challenges and opportunities in the professional market;
- Career pathways, models in creative business (Architecture and / or Design).

### **Teaching and learning methods and formats**

- Lectures
- Workshop

### **Learning objectives/aims and competencies**

- Knowledge and experience of professional requirements in the creative professional world;
- Understanding rules and affordances, chances and risks in the Professional Creative System;
- Position yourself in the Creative System.

### **Unit conclusion and proof of performance**

Presentation of own perspective and interests on creative practice.

### **Bibliography / literature**

Will be provided

**Necessary infrastructure and equipment**

None

**Necessary student equipment**

Laptop

**References and web links**

Will be provided

## **Unit 2 Creative Academics**

(code: BA FC 1.2)

### **Profile of lecturer(s)**

Experienced Academic trained Designer or Architect. Probably Background in Theory and Research - PHD.

### **Content**

- Role of the academic world in the Creative Disciplines;
- Purpose and aim of academical results as research and theory;
- Career models and examples in Academic Institutions;
- Reflection on the following field of study at SISD:  
Global and local view in terms of Academia;  
Role models, pathways and career examples in Academia, challenges and opportunities;  
The role of Theory, Knowledge, Culture and Research in Academia.

### **Teaching and learning methods and formats**

- Lectures
- Workshop

### **Learning objectives/aims and competencies**

- Knowledge and experience of necessary intellectual requirements and practice in the creative academic world;
- The value of intellectual properties;
- Publications and Writing as a result.

### **Unit conclusion and proof of performance**

### **Presentation of own set of knowledge and interests on academic practice**

### **Bibliography / literature**

Will be provided



**Necessary infrastructure and equipment**

None

**Necessary student equipment**

Laptop

**References and web links**

None

# Sub-course 2: Graphic, Information, Object, Space, Environment

**Credit points:** ECTS:3 Chinese:1.5

**Sub-course code:** BA FC 2

**Mandatory or elective:** Mandatory

## Learning objectives/aims and competencies

- The different fundamental forms of appearance, and field of knowledge and practice for Design (Communication/Visual and Object) and Architecture/Urban/Landscape dealing with specific methods, media, processes and results;
- Working with different scales, media, materials, processes, technologies and scope;
- Cultural, economic and practical aspects;
- Necessary basic talent, skills and knowledge;
- Impact for culture, society and business;
- What are typical working frameworks, settings and methods?
- Overlapping fields of the different types of Design and Architecture as an interdisciplinary approach (e.g. Smart City, Sustainable City);
- New directions as Game Design and Interaction Design, Immersive Design, dealing with a crossover of disciplines and it's methods, technologies and application;
- Critical reflection and discussion of roles of disciplines.

## Units

1 2D Design

2 3D Design

3 Environment and Space

## Teaching and learning methods and formats

- Lectures
- Seminars
- Workshop

## Envisaged practical skills

- Discussion of the different current fields in practise and as a discipline;

- What do I need to know and what skills are important?
- What are the core competencies and roles in Architecture and Design?

### **Envisaged theoretical and reflective skills**

- Basic knowledge of the underlying theory and methods;
- What are typical disciplinary working and knowledge environments?

### **Envisaged scientific skills**

- Basic knowledge of sets of Research and Theory in Design and Architecture;
- The reflection and use of the term “science” in the disciplines;
- Important publications and disciplinary turns and movements.

### **Sub-courses conclusion and proof of performance**

None

## Unit 1 2D Design

(code: BA FC 2.1)

### Profile of lecturer(s)

Experienced 2D Designer (Visual, Editorial, Graphic, Brand, Interaction, etc.) with a broad view and understanding of 2D Design.

### Content

- What is 2D Design?
- Different aspects of 2D Design;
- Quality rules for 2D Design (good/bad), examples;
- How is 2D Design produced (Process);
- Used Tools, Methods, Processes and Technologies;
- Significance of 2D Design in the Production/Industry/Process;
- Difference between Analogue-Digital and Interactive 2D Design;
- Digitalisation and the impact of nonlinear information design;
- Must have qualities for a 2D Designer;
- Estimated future trends in 2D Design.

### Teaching and learning methods and formats

- Lectures
- Workshop
- Seminars

### Learning objectives/aims and competencies

- Knowledge of the basic principles, qualities, methods of 2D Design. Distinguish between good, bad and average 2D Design;
- Knowledge of the basic talents, and used tools for 2D Design;
- Typical work environments for 2D Design;
- Overview of 2D Design types: as Editorial Design, Typography, Typesetting, Poster Design, Screen Design, Brand Design, Interaction Design, etc.;
- Knowledge of important 2D Design in the history globally;
- Knowledge of important 2D Designers and Agencies globally;
- Typical applications and Markets of 2D Design in the Industry, Culture and Society;
- Creation and Production processes.

**Unit conclusion and proof of performance**

Short presentation on 2D Design perspective. Group work.

**Bibliography / literature**

Will be provided

**Necessary infrastructure and equipment**

None

**Necessary student equipment**

Laptop

**References and web links**

Will be provided

## Unit 2 3D Design

(code: BA FC 2.2)

### Profile of lecturer(s)

Experienced 3D Designer (Product, Electronics, Investment goods, etc.) with a broad view and understanding of 3D Design.

### Content

- What is 3D Design?
- Different aspects of 3D Design;
- Quality rules for 3D Design (good/bad), examples;
- How is 3D Design produced (Process);
- Used Tools, Methods and Technologies;
- Significance of 3D Design in the Production/Industry/Process;
- Difference between Analog and Digital 3D Design;
- Digitalisation and the impact of nonlinear information design;
- Must have qualities for a 3D Designer;
- Estimated future trends in 3D Design.

### Teaching and learning methods and formats

- Lectures
- Workshop
- Seminars

### Learning objectives/aims and competencies

- Knowledge of the basic principles, qualities, methods of 3D Design. Distinguish between good, bad and average 3D Design;
- Know the basic talents and tools for 3D Design;
- Typical work environments for 3D Design;
- Knowledge of important 3D Designs around the history, globally. Yesterday and today;
- Blurring borders between object and information;
- The culture of objects. Different types of Object Design Reflection of 3D Design in the industry and society. Consumption Goods, Luxury Goods, Investment Goods, Furniture, Mobility, etc.

- Knowledge of important 3D Designers and Agencies globally;
- Typical applications and Markets of 3D Design in the Industry, Culture and Society.
- Creation and Production processes.

### **Unit conclusion and proof of performance**

Short presentation on 3D Design perspective. Group work.

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

None

### **Necessary student equipment**

Laptop

### **References and web links**

None

## Unit 3 Environment and Space

(code: BA FC 2.3)

### Profile of lecturer(s)

Experienced Architect/Urban Planner with a broad view and understanding of the function of Spatial Design/Architecture/Urban Design.

### Content

- What is Spatial-, Architectural-, and Landscape Design?
- Different aspects of Spatial-, Architectural-, and Landscape Design;
- Quality rules for Architectural/Landscape Design (good/bad);
- How is Architectural/Landscape Design produced (Process);
- Used Tools, Methods and Technologies;
- Significance of Architectural/Landscape Design in the Urban Planning Process;
- Difference between Analog and Digital/Interactive Architectural/Landscape Design;
- Must have qualities for a Architectural/Landscape/Urban Designer;
- Sustainable Environment and Smart Cities;
- Estimated future trends in Architectural/Landscape Design.

### Teaching and learning methods and formats

- Lectures
- Workshop
- Seminars

### Learning objectives/aims and competencies

- Knowledge of the basic principles, the qualities, methods of Spatial Design and Architecture. Distinguish between good and average Spatial Design and Architecture.
- Know the basic talents and tools for Spatial Design and Architecture;
- Typical work environments for Spatial Design and Architecture;
- Knowledge of important Spatial Design and Architecture around the history globally. Yesterday and today;
- Typical use and reflection of Spatial Design and Architecture in the industry and society. From small scale (House) to large scale (City);
- Typical applications and Markets of Spatial Design and Architecture in the Industry, Culture and Society;



- Creation and Production processes.

### **Unit conclusion and proof of performance**

Short presentation on Environment and Space perspective. Group work.

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

None

### **Necessary student equipment**

Laptop

### **References and web links**

None

# Sub-course 3: Design and Architecture History Part 1

**Credit points:** ECTS:3 Chinese:1.5

**Sub-course code:** BA FC 3

**Mandatory or elective:** Mandatory

## Learning objectives/aims and competencies

The history of design refers to the history of product design and begins with the mass production of consumer goods in industrial society in the mid-19th century. Furthermore, it deals with the history of graphic design and other areas of design.

Architectural history analyses architecture and the built environment in their historical dimension. Architectural history covers the broad spectrum from design to building and construction to architectural tradition in the broadest sense. Architectural history is interested in material and stylistic, medial and perception-theoretical questions as well as in the social, political and societal dimensions of architecture. The (historical) theory of architecture and the history of monument preservation are also the subject of architectural history, which further contributes to critical heritage studies.

Understand the history of design and architecture as framework and orientation for your own discipline. Understand and position historical and cultural background.

## Units

1 Design and Architecture History Part 1

## Teaching and learning methods and formats

- Lectures
- Seminars

## Envisaged practical skills

None

## Envisaged theoretical and reflective skills

Basic knowledge, orientation and understanding of the history of Design and Architecture and influences of:

Historical;  
Political

Technical;;

Cultural;

Social;

Global/Local;

developments and positions.

- Understand the underlying theory and methods. Drawing insights from the history towards current developments and the future implications. Understanding the historical development, leading to current- and future results and theories. Important cultural turns and movements as Arts and Crafts Movement, Modernism, Postmodernism, Deconstruction, Functional Design, Social Design, Biodesign, etc..
- Learn about important institutions, persons and offices or agencies. Know important milestones of the history.

### **Envisaged scientific skills**

- Reading and understanding text on the history of Design and Architecture;
- Drawing own conclusions;
- Understand the relation between practice and history.

### **Sub-courses conclusion and proof of performance**

- Writing a text
- Presentation

## Unit 1 Design and Architecture History Expert

(code: BA FC 3.1)

### Profile of lecturer(s)

Design and Architecture History Expert.

### Content

- Understand of Design & Architecture in it's historical context;
- Knowledge on the relation of history, society and economy;
- Understand different cultural periods and it's expressions;
- Knowledge on important persons, Schools of expressions (as Bauhaus, Black Mountain College, etc.) and styles
- Learn theoretical thinking as Modernity, Postmodernity, Renaissance, etc.;
- Know the most important items, buildings, companies and processes

### Teaching and learning methods and formats

- Workshop
- Seminars

### Learning objectives/aims and competencies

- Overview of different periods in Architecture and Design.
- Influences of the society, technology and economy on Architecture and Design and vice versa
- Differentiate Design, Art, Architecture. Classify styles and schools.
- Know important theory buildings in Architecture and Design
- Reflect history in your own creative process.
- Understand the underlying theory and methods.

### Unit conclusion and proof of performance

Presentation of a given historical topic.

### Bibliography / literature

Will be provided

**Necessary infrastructure and equipment**

None

**Necessary student equipment**

Laptop

**References and web links**

None

## Sub-course 4: Creative Methods

**Credit points:** ECTS:2 Chinese:1

**Sub-course code:** BA FC 4

**Mandatory or elective:** Mandatory

### Learning objectives/aims and competencies

- Creative disciplines are making use of different methods in the daily practice;
- A set of methods are the basics for Theory and Research;
- User focused and participative processes result in better adapted and more accepted results;
- Students learn in this module the most important and useful Design Thinking Methods, gaining results for their own creative process;
- Students learn how to set up and master a participative process and evaluate the outcome, results and to make use for the own practice or theory.

### Units

- 1 Design Thinking and other Creative Methods
- 2 Collaborative and Participative Methods

### Teaching and learning methods and formats

- Workshop
- Seminars

### Pre-requirements for this course

Short presentation on a set of creative methods

### Envisaged practical skills

- Practical application of Design Thinking and Participative Processes;
- Become a moderator for a Design process;
- Involving stakeholders and affected communities in the right way.

### Envisaged theoretical and reflective skills

- Learn the underlying theories of Design Thinking and participative design processes;
- Evaluate your own outcome and results;

- Set up a process;
- Deal with stakeholder expectations.

### **Envisaged scientific skills**

Understand the scientific background and the theory behind Design Thinking and Participative Processes.

### **Sub-courses conclusion and proof of performance**

Presentation

# Unit 1 Design Thinking and Other Creative Methods

(code: BA FC 4.1)

## Profile of lecturer(s)

Design Thinking Expert.

## Content

- Understand of Design Thinking and other Creative Methods;
- Apply Design Thinking in your own practice;
- Understand the Theory behind Design Thinking;
- Get an overview and understanding of other creative methods;
- Try to create your own method.

## Teaching and learning methods and formats

- Workshop
- Seminars

## Learning objectives/aims and competencies

- Understand Design Thinking?
- How is a Design Thinking Process organized and executed?
- Necessary tools for a Design Thinking Process;
- What are outcomes of a Design Thinking Process?
- What are other useful creative methods that can be used for Theory and Practise?
- The use of Questionnaires, Mapping and Problem Framing.

## Unit conclusion and proof of performance

Presentation, setting up an own design thinking workshop.

## Bibliography / literature

Will be provided

## Necessary infrastructure and equipment

None



## **Necessary student equipment**

Laptop

## **References and web links**

None

## Unit 2 Collaborative and Participative Methods

(code: BA FC 4.2)

### Content

- What is a “user focus” or a “human centred” focus?
- The importance and value of the inclusion of users for a creative process;
- Overview of different user focused and participative methods;
- Stakeholder- and experience management;
- What are social- and societal aspects of Design and Architecture?

### Teaching and learning methods and formats

- Workshop
- Seminars
- Role Play

### Learning objectives/aims and competencies

- What means “user focused”?
- What defines the “user”?
- What are outcomes of a participative process?
- How can I make use of users need, experience and knowledge for my own work?
- How can I understand a problem?
- How can I frame a problem?
- How do I set up a participative user inclusive workshop?
- What tools and methods are needed?
- Questionnaires, mapping and framing;
- Catalyse results of a user workshop;
- Soft Prototyping, case modelling, framing.

### Unit conclusion and proof of performance

- Setup your own user oriented workshop;
- Test your workshop

### Bibliography / literature

Will be provided

**Necessary infrastructure and equipment**

None

**Necessary student equipment**

Laptop

**References and web links**

None

# Sub-course 5: Skills, Methods and Tools 1

**Credit points:** ECTS:5 Chinese:2.5

**Sub-course code:** BA FC 5

**Mandatory or elective:** Mandatory

## Learning objectives/aims and competencies

- Initial drawing and sketching skills;
- Exercise and train your drawing, rendering, sketching and printing skills;
- Express your idea or a concept in a quick way, using sketches;
- 2D and 3D techniques of visualize, plan and perspective;
- Necessary materials, techniques and tools.

## Units

1 Drawing, Rendering and Sketching, Printing

## Teaching and learning methods and formats

- Workshop
- Lectures
- Exercises

## Envisaged practical skills

- Become a skilled communicator, using a set of illustration and drawing techniques;
- Develop your own style of expression.

## Envisaged theoretical and reflective skills

- Understand the perception behind hand drawing;
- Differences between 2D and 3D design drawings;
- Reflect your own sketching style for everyday purposes.

## Envisaged scientific skills

Drawing as an information- and communication tool.

## Sub-courses conclusion and proof of performance

Folder presentation

# Unit 1 Drawing, Rendering and Sketching, Printing

(code: BA FC 5.1)

## Profile of lecturer(s)

Skilled Design/Architecture draftsman.

## Content

- Intensive drawing exercises;
- 3D and 2D drawings;
- Theory of perspective, intersection and plan;
- Use of drawing tools, techniques and media;
- For which task do I use which drawing style or technique?
- What is the difference of a sketch and a technical drawing?
- Develop your individual expression;
- Sketching as quick presentation of ideas and concepts.
- Difference of hand drawing and CAD.

## Teaching and learning methods and formats

- Exercises

## Learning objectives/aims and competencies

- Become a skilled and virtuous draughtsman;
- Perspective, plan, section and elevation;
- What is the purpose of a sketch, a plan and a rendering;
- When and how to use it in your creative process.

## Unit conclusion and proof of performance

**Individual folder of drawings, illustrations, sketches and renderings, all made**

**by hand**

## Bibliography / literature

Will be provided

## **Necessary infrastructure and equipment**

None

## **References and web links**

None

# 跨专业基础课程 I

课程代码: SDFC2001

课程名: 跨专业基础课程 I

学分: 欧方 15 学分 中方 7.5 学分

开设专业: 建筑学、设计学

先修课程: 无

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程包含了 5 门子课程, 可对学生的思维和技能进行综合训练。课程主要引导学生理解创意是源自个人创意、技能和才干的活动, 通过知识产权的生成与利用, 创造财富和就业机会。并了解创意产品对商业、文化和社会的主要影响。学习创造性学科在日常实践中使用的不同方法, 了解设计和建筑的历史, 以及建筑史对物质和风格、媒介和感知、社会以及政治的影响。学习跨学科方法、技术、工艺、材料等, 并对其使用进行反思和讨论。

# 子课程 1: 创意学科导论

学分: ECTS:2 哈工大学分:1

必修或选修: 必修

## 课程培养目标与能力

- “创意学科”的一般定义：全球化和本地化；
- 创意和创造力对经济和社会的作用；
- 典型的劳动力市场——“创意经济”；
- 创意作为文化和商业的源泉；
- 创造力的全球影响力；
- 用创造力解决问题和积累知识；
- 艺术、设计和建筑的区别；
- 实践导向和学术导向的创造性学科的根本区别和相似之处是什么？
- 创意学科如何为商业、文化和社会做出贡献？
- 创意产业的典型榜样是什么？
- 创意产业提供哪些职业机会？

## 单元

1 专业

2 学术

## 教学模式与方法

- 讲座
- 工作坊
- 指导

## 目标实践技能

学生获得个人的自我定位和兴趣引导。

## 目标理论与思维能力

- 了解创造性学科的性质、地位和目的；
- 了解行业和经济领域中的不同角色（即机构、初创企业、孵化器、受雇、自雇等）；
- 将自己定位在创意文化和经济的框架中；
- 将“知识共享”理解为一项全球趋势。



### 目标科学技能

- 了解创造性学术和经济社会的规则和标准（即科学、研究、博士、讲师等）和创意专业领域（商业、机构等）；
- 区分创意文化、创意商业和创意知识；
- 知识产权的价值是创意经济的基本结果。

### 子课程考核方式

无

## 单元 1 创意（专业）

(单元编号: BA FC 1.1)

### 师资配备

经验丰富的执业设计师或建筑师。

### 内容

专业设计和建筑场景的展望，包括工作领域的案例和要求。建筑师和设计师的知识和经验。

对以下研究领域的自我反思：

- 全球和当地的观点和见解；
- 榜样和例子；
- 设计师和建筑师作为流行人物和榜样；
- 专业市场的挑战和机遇；
- 职业道路、创意业务模型（建筑和/或设计）。

### 教学模式

- 讲座
- 工作坊

### 学习目标和能力培养

- 创意专业领域专业要求的知识和经验；
- 了解专业创意系统中的规则和可供性、机会和风险；
- 了解自己在创意系统中的定位。

### 单元总结和考核方式

在创意实践中展示自己的观点及兴趣。

### 参考书目/文献

待定

### 必要的基础设施和设备

笔记本电脑（学生设备）

## 参考资料和网页链接

待定

## 单元 2 创意（学术）

(单元编号: BA FC 1.2)

### 师资配备

- 经验丰富、受过专业学术培训的设计师或建筑师；
- 有理论和研究背景的博士。

### 内容

- 学术界在创意学科中的作用；
- 学术成果作为研究和理论的价值和目的；
- 学术机构的职业模式和案例；
- 对 SISD 以下研究领域的思考：  
学术界的全球和地方观点；  
学术界的榜样、职业途径和职业榜样、挑战和机遇；  
理论、知识、文化和研究在学术界的作用。

### 教学模式

- 讲座
- 工作坊

### 学习目标和能力培养

- 创意专业领域要求的知识和实践经验；
- 知识产权的价值
- 出版物及写作。

### 单元总结和考核方式

在学术实践中展示自己的知识及兴趣。

### 参考书目/文献

待定

### 必要的基础设施和设备

笔记本电脑（学生设备）

## 参考资料和网页链接

待定

## 子课程 2: 图形、信息、对象、空间、环境

学分: ECTS:3 哈工大学分:1.5

必修或选修: 必修

### 课程培养目标与能力

- 不同外观基本形式的处理特定方法、媒体、过程和结果的设计（通信/视觉和对象）和建筑/城市/景观的知识及实践领域；
- 运用不同的规模、媒体、材料、工艺、技术和范围；
- 文化、经济和实践；
- 必要的基本技能和知识；
- 对文化、社会和商业的影响；
- 典型的工作框架、设置和方法是什么？
- 不同类型设计和建筑学在跨学科中的运用（例如智慧城市和可持续城市）；
- 游戏设计、交互设计、沉浸式设计等新方向，涉及学科交叉及其方法、技术和应用；
- 对学科角色的批判性反思和讨论。

### 单元

- 1 二维设计
- 2 三维设计
- 3 环境与空间

### 教学模式与方法

- 讲座
- 研讨会
- 工作坊

### 目标实践技能

- 讨论当前不同领域的实践和学科；
- 需要知道什么知识以及哪些技能很重要？
- 建筑和设计的核心竞争力及角色分别是什么？

### 目标理论与思维能力

- 理论和方法的基本知识；
- 什么是典型的学科工作和知识环境？

### 目标科学技能

- 具备设计与建筑研究理论的基础知识;
- “科学”一词在学科中的反思和使用;
- 重要的出版物、学科转变和推动。

### 子课程考核方式

无

## 单元 1 二维设计

(单元编号: BA FC 2.1)

### 师资配备

经验丰富的二维设计师（视觉、版面、图形、品牌、交互等），对二维设计有广阔的视野和理解。

### 内容

- 什么是二维设计？
- 二维设计的不同方面；
- 二维设计的质量规则（好/坏）示例；
- 二维设计是如何产生的（过程）；
- 使用的工具、方法、流程和技术；
- 二维设计在生产/行业/流程中的意义；
- 模拟数字和交互式二维设计之间的区别；
- 数字化和非线性信息设计的影响；
- 二维设计师必须具备的素质；
- 预估二维设计的未来趋势。

### 教学模式

- 讲座
- 工作坊
- 研讨会

### 学习目标和能力培养

- 了解二维设计的基本原理、质量和方法。区分好的、坏的和一般的二维设计；
- 二维设计的基础知识和使用的工具；
- 二维设计的典型工作环境；
- 二维设计类型概述：如版面设计、排版、字体设计、海报设计、屏幕设计、品牌设计、交互设计等；
- 了解全球历史上重要的二维设计；
- 了解全球重要的二维设计师和机构；
- 二维设计在工业、文化和社会中的典型应用和市场；
- 创建和生产过程。



## **单元总结和考核方式**

关于二维设计的简短展示。小组工作。

## **参考书目/文献**

待定

## **必要的基础设施和设备**

笔记本电脑

## **参考资料和网页链接**

待定

## 单元 2 三维设计

(单元编号: BA FC 2.2)

### 师资配备

经验丰富的三维设计师（产品、电子产品、投资品等），对三维设计有广阔的视野和理解。

### 内容

- 什么是三维设计？
- 三维设计的不同方面；
- 三维设计的质量规则（好/坏）示例；
- 三维设计是如何产生的（过程）；
- 使用的工具、方法和技术；
- 三维设计在生产/行业/流程中的意义；
- 模拟和数字三维设计之间的区别；
- 数字化和非线性信息设计的影响；
- 三维设计师必须具备的素质；
- 预估三维设计的未来趋势。

### 教学模式

- 讲座
- 工作坊
- 研讨会

### 学习目标和能力培养

- 了解三维设计的基本原理、质量和方法。能够区分好的、坏的和一般的三维设计；
- 了解三维设计的基本技能和工具；
- 三维设计的典型工作环境；
- 了解全球历史上重要三维设计的过去和现状；
- 打破客体和信息之间的边界；
- 物品的文化，不同类型物体；
- 三维设计在行业和社会中的反映，如消费品、奢侈品、投资品、家具、移动设备等；
- 了解全球重要的三维设计师和机构；
- 三维设计在工业、文化和社会中的典型应用和市场；

- 创作和生产过程。

### **单元总结和考核方式**

关于三维设计的简短展示。小组工作。

### **参考书目/文献**

待定

### **必要的基础设施和设备**

笔记本电脑

### **参考资料和网页链接**

待定

## 单元 3 环境与空间

(单元编号: BA FC 2.3)

### 师资配备

经验丰富的建筑师/城市规划师,对空间设计/建筑/城市设计的功能有广阔的视野和理解。

### 内容

- 什么是空间、建筑和景观设计?
- 空间、建筑和景观设计的不同方面;
- 建筑/景观设计的质量规则(好/坏);
- 建筑/景观设计是如何产生的(过程);
- 使用的工具、方法和技术;
- 建筑/景观设计在城市规划过程中的意义;
- 模拟与数字/交互建筑/景观设计的区别;
- 建筑/景观/城市设计师必须具备的素质;
- 可持续环境和智慧城市;
- 估计建筑/景观设计的未来趋势。

### 教学模式

- 讲座
- 工作坊
- 研讨会

### 学习目标和能力培养

- 了解空间设计和建筑的基本原则、品质、方法,能够区分好的和一般的空间设计和建筑;
- 了解空间设计与建筑的基本技能和工具;
- 空间设计和建筑的典型工作环境;
- 了解全球历史上重要空间设计和建筑的过去和现状;
- 空间设计与建筑在行业和社会中的典型运用与体现。从小规模(房屋)到大规模(城市);
- 空间设计与建筑在工业、文化和社会中的典型应用和市场;
- 创建和生产过程。

### **单元总结和考核方式**

关于环境与空间的简短展示。小组工作。

### **参考书目/文献**

待定

### **必要的基础设施和设备**

笔记本电脑（学生设备）

### **参考资料和网页链接**

待定

## 子课程 3: 设计与建筑史第 1 部分

学分: ECTS:3 哈工大学分:1.5

必修或选修: 必修

### 课程培养目标与能力

- 设计史是指产品设计的历史，始于 19 世纪中叶工业社会消费品的大规模生产。此外，它还涉及平面设计和其他设计领域的历史；
- 建筑史从历史维度分析建筑和建成环境，涵盖了从最广泛意义上的设计到建筑和施工到建筑传统的广泛领域。建筑史关注材料和风格、媒介和感知理论问题，以及建筑的社会、政治和社会维度。建筑的（历史）理论和古迹保护的历史也是建筑史的主题，进一步有助于批判性遗产研究；
- 将设计和建筑的历史理解为学生自己的学科框架和方向，了解和定位历史文化背景。

### 单元

1 设计与建筑史第 1 部分

### 教学模式与方法

- 讲座
- 研讨会

### 目标实践技能

无

### 目标理论与思维能力

对设计和建筑基本知识、方向和历史的理解，以及对以下方面的影响：

- 历史；
- 政治；
- 技术；
- 文化；
- 社会；
- 全球/本地；
- 发展和立场。

- 了解基本理论和方法, 从历史中汲取对当前发展和未来影响的见解。了解历史发展, 对当前和未来的结果影响和理论影响。重要的文化转折和运动, 如工艺美术运动、现代主义、后现代主义、解构主义、功能设计、社会设计、生物设计等。
- 了解重要的机构、人员、办公室或机构, 了解历史的重要里程碑。

### **目标科学技能**

- 阅读和理解有关设计和建筑史的资料;
- 得出自己的结论;
- 了解实践与历史之间的关系。

### **子课程考核方式**

- 文稿撰写;
- 成果展示。

## 单元 1 设计与建筑史第 1 部分

(单元编号: BA FC 3.1)

### 师资配备

设计与建筑史专家。

### 内容

- 什么是空间、建筑和景观设计？
- 理解其历史背景下的设计和建筑；
- 关于历史、社会和经济关系的知识；
- 了解不同的文化时期及其表达方式；
- 重要人物知识、表达学派（如包豪斯学院、黑山学院等）、风格
- 学习现代性、后现代性、文艺复兴等理论思维；
- 了解最重要的项目、建筑、公司和流程

### 教学模式

- 工作坊
- 研讨会

### 学习目标和能力培养

- 关于不同时期的建筑 and 设计的概述。
- 社会、技术和经济与建筑 and 设计的相互影响。
- 区分设计、艺术、建筑。能够对风格和学派进行分类。
- 了解建筑与设计中的重要理论构成。
- 在自己的创作过程中反思历史。
- 理解基础的理论和方法

### 单元总结和考核方式

展示给定的历史主题。

### 参考书目/文献

待定



## **必要的基础设施和设备**

笔记本电脑（学生设备）

## **参考资料和网页链接**

待定

## 子课程 4: 创意方法

学分: ECTS:2 哈工大学分:1

必修或选修: 必修

### 课程培养目标与能力

- 创造性学科在日常实践中使用的不同方法;
- 一套理论与研究的基础方法;
- 以用户为中心和参与性的过程会让学生产生更好的适应性和结果更容易被接受;
- 学生在本课程中学习最重要和最有用的设计思维方法, 取得自己的创作过程成果;
- 学生将学习如何建立和掌握参与式过程, 评估结果, 并用于自己的实践或理论。

### 单元

- 1 设计思维和其他创造性方法
- 2 协作和参与方法

### 教学模式与方法

- 研讨会
- 工作坊

### 本课程的预要求

关于一套创意方法的简短展示

### 目标实践技能

- 设计思维和参与过程的实际应用;
- 成为设计过程的主导人;
- 以正确的方式让利益相关者和受影响的群体参与进来。

### 目标理论与思维能力

- 学习设计思维和参与式设计过程的基本理论;
- 评估自己的结果;
- 设置流程;
- 处理利益相关者的期望。

## 目标科学技能

了解设计思维和参与过程背后的科学背景和理论。

## 子课程考核方式

成果展示

## 单元 1 设计思维和其他创造性方法

(单元编号: BA FC 4.1)

### 师资配备

设计思维专家。

### 内容

- 了解设计思维和其他创意方法;
- 在设计实践中应用设计思维;
- 了解设计思维背后的理论;
- 获得对其他创意方法的概述和理解;
- 尝试创建自己的方法。

### 教学模式

- 工作坊
- 研讨会

### 学习目标和能力培养

- 了解设计思维?
- 设计思维过程是如何组织和执行的?
- 设计思维过程的必要工具;
- 设计思维过程的结果是什么?
- 其他可用于理论和实践的创造性方法是什么?
- 问卷、绘图和问题框架的使用。

### 单元总结和考核方式

成果展示, 建立一个自己的设计思维工作坊

### 参考书目/文献

待定

### 必要的基础设施和设备

笔记本电脑

## 参考资料和网页链接

待定

## 单元 2 协作和参与方法

(单元编号: BA FC 4.2)

### 内容

- 什么是“以用户为中心”或“以人为中心”？
- 将用户纳入创作过程的重要性和价值；
- 以用户为中心和参与式方法的各类概述；
- 利益相关者和经验管理；
- 设计和建筑的社会功能是什么？

### 教学模式

- 工作坊
- 研讨会
- 角色扮演

### 学习目标和能力培养

- 什么是“以用户为中心”？
- 如何定义“用户”？
- 参与过程的结果是什么？
- 如何在自己的工作中利用用户的需求、经验和知识？
- 如何理解一个问题？
- 如何解决问题？
- 如何建立参与式用户包容性研讨会？
- 需要什么工具和方法？
- 问卷、绘图和框架；
- 促进用户研讨会的成果；
- 软件原型设计、案例建模、框架。

### 单元总结和考核方式

- 以用户为导向，建立自己的工作坊；
- 工作坊测试

### 参考书目/文献

待定

## 必要的基础设施和设备

笔记本电脑

## 参考资料和网页链接

待定

## 子课程 5: 技能、方法和工具 1

学分: ECTS:5 哈工大学分:2.5

必修或选修: 必修

### 课程培养目标与能力

- 初步的绘画和素描技巧;
- 锻炼和训练绘图、渲染、素描和打印技能;
- 使用草图快速表达想法或概念;
- 可视化、平面和透视的二维、三维技术;
- 必要的材料、技术和工具。

### 单元

绘图、渲染和素描、打印

### 教学模式与方法

- 讲座
- 工作坊
- 实践

### 目标实践技能

- 成为熟练的沟通者, 使用一套插图和绘画技巧;
- 增强自己的表达方式。

### 目标理论与思维能力

- 理解手绘背后的感知力;
- 二维和三维设计图的区别;
- 体现自我的日常素描风格。

### 目标科学技能

能将绘图作为一种信息和交流工具

### 子课程考核方式

成果展示



## 单元 1 绘图、渲染和素描、打印

(单元编号: BA FC 5.1)

### 师资配备

熟练的设计/建筑绘图员

### 内容

- 密集的绘画实践;
- 三维和二维图纸;
- 透视、交叉和平面理论;
- 使用绘图工具、技术和媒介;
- 对于不同任务,我使用哪种绘画风格或技术?
- 草图和技术图纸有什么区别?
- 形成个人表达;
- 草图作为想法和概念的快速呈现;
- 手绘图和 CAD 的区别。

### 教学模式

- 实践

### 学习目标和能力培养

- 成为一名技艺精湛、德才兼备的绘图员;
- 透视图、平面图、剖面图和立面图;
- 草图、平面图和效果图的目的是什么?
- 何时以及如何到您的创作过程中使用它?

### 单元总结和考核方式

个人作品集,包括所有手工制作的图纸、插图、草图、效果图。

### 参考书目/文献

待定

### 必要的基础设施和设备

笔记本电脑

## 参考资料和网页链接

待定

# Interdisciplinary Foundation Course II

**Course code:** SDFC2002      **Course name:** Interdisciplinary Foundation Course II

**Credit points:** ECTS 5   Chinese: 2.5

**Subjects related:** Architecture, Design

**Pre-requirement for the course:** None

**Faculty or department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

The course is a new curriculum that is a combination or fusion of different disciplines that are intrinsically linked, focusing on developing students' basic skills, critical thinking, problem-solving, library and information use, creative thinking, and art performance. Students understand the importance of choosing materials, colors, and light effects, and know the interaction and overall effect of light, color, and materials. Based on multi-perspectives, sampling knowledge, risk and opportunity analysis, data sampling, etc., master the scientific basis of interdisciplinary and be familiar with the methods, advantages, disadvantages, and complexities of interdisciplinary research. Interpret sustainable design strategies using technology and other disciplines.

# Sub-course 1: Material, colour and light

**Credit points:** ECTS:3 Chinese:1.5

**Sub-course code:** BA FC 9

**Mandatory or elective:** Mandatory

## Learning objectives/aims and competencies

- This module handles important aspects for Architecture and Design: the use of Material, Colour and Light;
- In applied and theoretical contributions the module gives Architects and Designers a better understanding of the importance of selecting material, colour and the impact of light;
- It transfer knowledge, so that Designers and Architects are able to make use of Material, Colour and Light in a professional way.
- It gives an insight of sustainability, especially on the use of Material, Resources, Energy and Environment.

## Units

1 Material

2 Color

3 Light

## Teaching and learning methods and formats

- Lectures
- Workshop

## Envisaged practical skills

- Practical and professional use and application of Material, Colour and Light.
- Understand the mutual influence and the overall effect between light, colour and material.

## Envisaged theoretical and reflective skills

- Colour Theory
- Material Knowledge
- Light Theory

## **Envisaged scientific skills**

- Science of Perception
- The Human Sense

## **Sub-courses conclusion and proof of performance**

Project

## **Unit 1 Material**

( code: BA FC 9.1)

### **Profile of lecturer(s)**

Material Expert

### **Content**

- The range of Material for Architecture and Design;
- Different Categories of Materials;
- Use of Materials in Design and Architecture;
- Sustainability factor of Materials;
- Material origin;
- Raw material, processing and
- Production processes;
- Sourcing of Materials;
- Material and Surface;
- Culture of Material.

### **Teaching and learning methods and formats**

- Lectures
- Workshop
- Exercises

### **Learning objectives/aims and competencies**

- Student understand the use of Materials for Design and Architecture in different purposes, scale and treatment;
- They know a wide range of Materials
- Students becoming experts in using Materials for specific purposes and needs;
- They know advantages and disadvantages of Materials.

### **Unit conclusion and proof of performance**

Set up a research project

### **Bibliography / literature**

Will be provided

## **Necessary infrastructure and equipment**

SISD Lab

## **Necessary student equipment**

Laptop

## **References and web links**

Will be provided

## Unit 2 Colour

(code: BA FC 9.2)

### Profile of lecturer(s)

Colour Expert

### Content

- Colour application on Objects and Buildings;
- “real” Colour and applied colour;
- Colour Systems;
- Meaning of Colour;
- Colour as cultural value.

### Teaching and learning methods and formats

- Lectures
- Workshop
- Exercises

### Learning objectives/aims and competencies

- Students have an understanding of the different colour systems and colour cultures;
- They can apply colour in a professional way;
- They make professional use of colour in their projects;
- They have a professional vocabulary for colour and colour applications.

### Unit conclusion and proof of performance

Set up a colour project

### Bibliography / literature

Will be provided

### Necessary infrastructure and equipment

SISD Lab



### **Necessary student equipment**

Laptop

### **References and web links**

None

## Unit 3 Light

( number: BA FC 9.3)

### Profile of lecturer(s)

Light Expert

### Content

- Light as source for everything;
- Different light concepts;
- Measuring light;
- Experimenting with light and light sources;
- Defining light.

### Teaching and learning methods and formats

- Lectures
- Workshop
- Exercises

### Learning objectives/aims and competencies

- Knowledge Natural and Artificial Light Sources;
- Express different light qualities in your project;
- Integrate light for the own project.

### Unit conclusion and proof of performance

Set up a lighting project

### Bibliography / literature

Will be provided

### Necessary infrastructure and equipment

SISD Lab

### **Necessary student equipment**

Laptop

### **References and web links**

None

# Sub-course 2: Digital culture-analog culture–interdisciplinarity

**Credit points:** ECTS:2 Chinese:1

**Sub-course code:** BA FC 6

**Mandatory or elective:** Mandatory

## Learning objectives/aims and competencies

- Understand the differences of Analog and digital processes and tools;
- Know the strengths and weaknesses of Analog and digital working formats;
- Know the strengths and weaknesses of interdisciplinary working formats;
- Master complexity with the help of technology and the integration of other disciplines;
- Setup own working formats as workshops or expert sessions.

## Units

1 Digital and Analog

2 Interdisciplinary working formats

## Teaching and learning methods and formats

- Lectures
- Seminars
- Workshop

## Envisaged practical skills

- Make use of Analog and digital technologies in your individual process
- Understand the options and limitations of toolsets and methods;
- Master interdisciplinary working environments;
- Framing problems and expectations;
- Open dialogue with other disciplines, understand their role and responsibility.

## Envisaged theoretical and reflective skills

- Understand the underlying theory of digital and Analog formats;
- Understand the impact of tools on results and vice versa;
- Know the theory behind interdisciplinary working formats.

### **Envisaged scientific skills**

- Know the scientific fundamentals of Analog and digital formats: efficiency, strategy, purpose and effect;
- Know the scientific fundamentals of interdisciplinarity: multiple perspective, sampling knowledge, risk and opportunity analysis, data sampling.

### **Sub-courses conclusion and proof of performance**

- Project exploration
- Project definition and setup

## Unit 1 Interdisciplinary working formats

( number: BA FC 6.1)

### Profile of lecturer(s)

Interdisciplinary experienced Designer, Architect or Manager.

### Content

- Why leads interdisciplinarity to better results?
- Understand the strengths and weaknesses of disciplinarity and interdisciplinarity;
- Examples of interdisciplinary work and results in practice;
- Impact of different methods, technologies, cultures and artefacts;
- Using risk analysis and common data spaces for interdisciplinary setting;
- The difference of the tangible and the non-tangible;
- Shape common ground and understanding for interdisciplinary processes;
- Be aware of different languages, education and aims in an interdisciplinary process;
- Bridging the disciplinary gap between digital and Analog with technologies as:  
Immersion, 3D Renderings, 3D printing.

### Teaching and learning methods and formats

- Lectures
- Workshop
- Exercises

### Learning objectives/aims and competencies

- Organize interdisciplinary working formats;
- Leading an interdisciplinary team, shaping team culture;
- Prepare and setup workshops and working groups;
- Understand different thinking and working cultures, methods and tools;
- Learn to work inclusive and structured;
- Include stakeholder management and expectation;
- Make use of different disciplinary expertise for your process;
- Lead an interdisciplinary process, transfer results.

### **Unit conclusion and proof of performance**

- Setting up an interdisciplinary approach;
- Define the agenda for interdisciplinary formats.

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

None

### **Necessary student equipment**

Laptop

### **References and web links**

None

## Unit 2 Digital and analog

( number: BA FC 6.2)

### Profile of lecturer(s)

Experienced Designer or Architect, using of both Digital and Analog methods in Theory and practice.

### Content

- Digital and Analog as cognitive models;
- History and future of Analog and Digital processes;
- Impact of Technologies on Artefacts and Buildings;
- Understanding different representations methods of the “tangible” and the “non-tangible”;
- Bridging the gap between the “tangible” and the “non-tangible”; by technologies as Immersion, Photorealistic, Renderings, 3D Printing, Rapid Prototyping, Craft Skills etc;
- Scale, Quantity and Quality of procedures and methods.

### Teaching and learning methods and formats

- Lectures
- Workshop
- Exercises

### Learning objectives/aims and competencies

- Learn about strengths and weaknesses of Analog and digital procedures, methods and formats;
- Estimate and understand the different qualities and appearances of the “tangible” and the “non-tangible”;
- Have a set of method related options at your disposal
- Understand and master the required knowledge;
- Estimate and evaluate results of the different approaches.



**Unit conclusion and proof of performance**

**Present your own approach**

**Bibliography / literature**

Will be provided

**Necessary infrastructure and equipment**

None

**Necessary student equipment**

Laptop

**References and web links**

None

# 跨专业基础课程 II

课程代码: SDFC2002

课程名: 跨专业基础课程 II

学分: 欧方 5 学分 中方 2.5 学分

开设专业: 建筑学、设计学

先修课程: 无

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

该课程由一些有着内在联系的不同学科合并或融合而成, 重在培养学生的基本技能、批判性的思考能力、解决问题的能力、利用图书馆和信息的能力、创造性思维及艺术表现能力。可让学生更好地理解选择材料、颜色和光线影响的重要性, 了解光、色和材质之间的相互影响和整体效果。并基于多视角、抽样知识、风险和机会分析、数据抽样等掌握跨学科的科学基础, 熟悉跨学科研究的方法、优缺点和复杂性。借助技术和其他学科, 解读可持续性设计策略。

# 子课程 1: 材料、颜色和光线

学分: ECTS:3 哈工大学分:1.5

必修或选修: 必修

## 课程培养目标与能力

- 该课程处理建筑和设计的重要方面: 材料、颜色和光线的使用;
- 在应用和理论贡献方面, 该课程让建筑师和设计师更好地理解选择材料、颜色和光线影响的重要性;
- 使设计师和建筑师能够以专业的方式使用材料、颜色和光;
- 它提供了对可持续性的见解, 尤其是在材料、资源、能源和环境的使用方面。

## 单元

1 材料

2 颜色

3 光线

## 教学模式与方法

- 讲座
- 工作坊

## 目标实践技能

- 材料、颜色和光的实际和专业应用;
- 了解光、色和材质之间的相互影响和整体效果。

## 目标理论与思维能力

- 色彩理论
- 材料知识
- 光理论

## 目标科学技能

- 感知觉科学
- 人类感官

## 子课程考核方式

课程项目

## 单元 1 材料

(单元编号: BA FC 9.1)

### 师资配备

材料专家

### 内容

- 建筑和设计材料的范围;
- 不同类别的材料;
- 在设计和建筑中使用材料;
- 材料的可持续性因素;
- 材料来源;
- 原料、加工及生产过程;
- 材料采购;
- 材料和表面;
- 物质文化。

### 教学模式

- 讲座
- 工作坊
- 实践

### 学习目标和能力培养

- 学生了解设计和建筑材料在不同目的、规模和处理中的使用;
- 可使用各种各样的材料, 成为将材料用于特定目的和需求的专家;
- 知道材料的优点和缺点。

### 单元总结和考核方式

设立一个研究项目

### 参考书目/文献

待定

### 必要的基础设施和设备

SISD 实验室; 笔记本电脑

## 参考资料和网页链接

待定

## 单元 2 颜色

(单元编号: BA FC 9.2)

### 师资配备

色彩专家

### 内容

- 物体和建筑物的颜色应用;
- “真实”颜色和应用颜色;
- 色彩系统;
- 颜色的含义;
- 色彩的文化价值。

### 教学模式

- 讲座
- 工作坊
- 实践

### 学习目标和能力培养

- 使学生了解不同的色彩系统和色彩文化;
- 以专业的方式应用颜色;
- 在项目中专业地使用颜色;
- 使用专业的色彩和色彩应用词汇。

### 单元总结和考核方式

设立一个颜色项目

### 参考书目/文献

待定

### 必要的基础设施和设备

SISD 实验室, 笔记本电脑

### 参考资料和网页链接

待定

## 单元 3 光

(单元编号: BA FC 9.3)

### 师资配备

灯光专家

### 内容

- 光是万物之源;
- 不同的灯光概念;
- 测量光线;
- 试验光和光源;
- 定义光。

### 教学模式

- 讲座
- 工作坊
- 实践

### 学习目标和能力培养

- 认识自然和人造光源;
- 在项目中表达不同光的质感;
- 在项目中使用光。

### 单元总结和考核方式

设立一个光线项目

### 参考书目/文献

待定

### 必要的基础设施和设备

SISD 实验室, 笔记本电脑

### 参考资料和网页链接

待定



## 子课程 2: 数字文化-模拟文化-跨学科

学分: ECTS:2 哈工大学分:1

必修或选修: 必修

### 课程培养目标与能力

- 了解模拟数字流程和工具的差异;
- 了解模拟数字工作模式的优缺点;
- 了解跨学科工作形式的优缺点;
- 借助技术和其他学科的融合掌握复杂性;
- 形成工作坊或专家会议的工作模式。

### 单元

- 1 数字和模拟
- 2 跨学科工作形式

### 教学模式与方法

- 讲座
- 研讨会
- 作坊

### 目标实践技能

- 在个人工作流程中使用模拟和数字技术;
- 了解工具和方法的选项和限制;
- 胜任跨学科工作环境;
- 提出问题和期望;
- 与其他学科公开对话, 了解他们的角色和责任。

### 目标理论与思维能力

- 了解数字和模拟的基本理论;
- 了解工具与结果的相互影响;
- 了解跨学科工作形式背后的理论

### 目标科学技能

- 了解模拟和数字的科学基础: 效率、策略、目的和效果;

- 了解跨学科的科学基础：多视角、抽样知识、风险和机会分析、数据抽样。

### 子课程考核方式

- 项目探索
- 项目开题

## 单元 1 跨学科工作形式

(单元编号: BA FC 6.1)

### 师资配备

跨学科经验丰富的设计师、建筑师或经理。

### 内容

- 为什么跨学科会带来更好的结果？
- 了解学科和跨学科的优势和劣势；
- 跨学科工作和实践结果的例子；
- 不同方法、技术、文化和人工制品的影响；
- 使用风险分析和通用数据空间进行跨学科设置；
- 有形与无形的区别；
- 理解形成跨学科过程的共同点；
- 在跨学科过程中了解不同的语言、教育和目标；
- 通过以下技术缩小数字和模拟之间的学科差距：沉浸式、三维渲染、三维打印。

### 教学模式

- 讲座
- 工作坊
- 实践

### 学习目标和能力培养

- 组织跨学科工作形式；
- 领导跨学科团队，塑造团队文化；
- 准备和建立研讨会和工作组；
- 了解不同的思维和工作文化、方法和工具；
- 学会包容和结构化的工作；
- 对利益相关者的管理和期望；
- 使用不同的学科专业知识；
- 领导一个跨学科的过程，转移成果。

### 单元总结和考核方式

- 建立跨学科方法；
- 确定跨学科模式的议程

## 参考书目/文献

待定

## 必要的基础设施和设备

笔记本电脑

## 参考资料和网页链接

待定

## 单元 2 数字和模拟

(单元编号: BA FC 6.2)

### 师资配备

经验丰富的设计师或建筑师，在理论和实践中使用数字和模拟方法。

### 内容

- 数字和模拟作为认知模型；
- 模拟和数字过程的历史和未来；
- 技术对人工制品和建筑物的影响；
- 了解“有形”和“无形”的不同表现方式；
- 通过沉浸式、真实感、渲染、三维打印、快速原型制作、工艺技能等技术，缩小“有形”与“无形”之间的差距；
- 程序和方法的规模、数量和质量。

### 教学模式

- 讲座
- 工作坊
- 实践

### 学习目标和能力培养

- 了解模拟和数字程序、方法和格式的优缺点；
- 估计和理解“有形”和“无形”的不同品质和外观；
- 有一组方法相关的选项供使用
- 了解并掌握所需知识；
- 估计和评估不同方法的结果。

### 单元总结和考核方式

提出自己的方法

### 参考书目/文献

待定

### 必要的基础设施和设备

笔记本电脑

## 参考资料和网页链接

待定

# Interdisciplinary Foundation Course III

**Course code:** SDFC2003

**Course name:** Interdisciplinary Foundation Course III

**Credit points:** ECTS 8 Chinese: 4

**Subjects related:** Architecture, Design

**Pre-requirement for the Course:** None

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

The course links the use of 2D and 3D software with the possibilities of SISD labs and workshops. Train students to utilize the different digital design and production methods available. Students learn how to transfer a digital result into production, how to change it, how to produce and evaluate it. The course focus on combining basic skills training with architectural understanding; combining creativity with comprehensive problem-solving ability; combining architectural knowledge with professional theoretical methods; combining design process with professional expression skills; combining design practice with comprehensive design ability. Make students' knowledge structure and knowledge system into a closely linked whole, recognize and solve problems with a comprehensive point of view.

## **Sub-course 1: Skills, methods and tools 2**

**Credit points:** ECT:4 Chinese:2

**Sub-course code:** BA FC 8

**Mandatory or elective:** Mandatory

### **Learning objectives/aims and competencies**

This module connects the use of 2D and 3D Software with the possibilities of the SISD Lab and Workshop. It trains students to make use of the different digital design- and production methods available. It learns how to transfer a digital result to production, how to alter it, how to produce and assess it. It focuses on the workflow from idea and concept to the final physical object.

- Introduction in a Design, Architecture Software Packages for 2D and 3D;
- Using and applying the software for projects and production;
- Basic Introduction in the use of the SISD Lab/Workshop. Learn to use the SISD facilities independently;
- Make use of the hand- or digital fabrication- or prototyping methods available in the SISD Lab/Workshop;
- Learn about digital to physical workflows in Design and Architecture processes.

### **Units**

1 CAD 2D and 3D

2 Basic Introduction in the SISD Lab and Workshop

### **Teaching and learning methods and formats**

Lectures, Workshops

### **Pre-requirements for this module**

Module: Skills, Methods and Tools 1

### **Envisaged practical skills**

- Learn to use Software for 3D and 2D Design purpose as Graphic Design, Information Design, Industrial Design and Architecture;
- Understand the principle functions and the limits of software;
- Understand the difference to Analog design methods;



- Understand the workflow for production in small (Prototype) and large scale (Mass Production - Industry)
- Transfer of Digital results to the SISD Lab/Workshop for Prototyping or Modelbuilding;
- Reverse Engineering Technologies;
- Train and use basic Workshop Technologies;
- Train and use digital fabrication methods.

### **Envisaged theoretical and reflective skills**

- Understand the variety of and the purpose of digital tools;
- Understand the variety of and the purpose of physical tools and hand-production methods;
- Understand the impact of tools on results and vice versa.

### **Envisaged scientific skills**

- Assess and evaluate the options and limitations of methods;
- Rate the impact of a specific tool towards the result;
- Get scientific expertise in workflow methods.

### **Sub-course conclusion and proof of performance**

Project presentation

## **Unit 1 Basic introduction in the SISD lab and workshop**

( number: BA FC 8.1)

### **Profile of lecturer(s)**

SISD Lab and Workshop Crew.

### **Content**

- Overview the SISD Lab and Workshop equipment;
- Rules of use of the SISD Lab and Workshop;
- Health and Safety regulations;
- Basic categories of production methods, tools and processes available in the SISD Lab;
- Training on different tools, machinery and methods;
- Workflows in the lab;
- Available materials, payment procedure;
- Available digital production tools and methods;
- Rapid Prototyping methods.

### **Teaching and learning methods and formats**

- Lectures
- Exercises

### **Learning objectives/aims and competencies**

- Safe use of equipment;
- Prepare and plan your Lab Project before starting;
- Hand- and craft skills;
- Train on different machinery and methods;
- Select the right method and material for a given task;
- Use of digital methods;
- Use of Analog methods;
- Work independently.

### **Unit conclusion and proof of performance**

Produce different CAD training pieces.

**Bibliography / literature**

Will be provided

**Necessary infrastructure and equipment**

None

**Necessary student equipment**

Laptop

**References and web links**

None

## **Sub-course 2: Design and Architecture History 2**

**Credit points:** ECT:3 Chinese:1.5

**Sub-course code:** BA FC 7

**Mandatory or elective:** Mandatory

### **Learning objectives/aims and competencies**

This is the second part of the history of design and architecture. It connects and continues Part 1.

### **Units**

Design and Architecture History Part 2

### **Teaching and learning methods and formats**

- Lectures
- Seminars

### **Pre-requirements for this module**

Design and Architecture History Part 1

### **Envisaged practical skills**

None

### **Envisaged theoretical and reflective skills**

- Basic knowledge and understanding of the history of design and architecture and the different influences:
  - Historical;
  - Political;
  - Technical;
  - Cultural;
  - Social;
  - Global/Local.
- Explaining the underlying theory and methods. Drawing insights from the history for today and the future. Understanding the historical development, leading to current- and future results and theories. Important cultural turns and movements as arts and craft, modernism, postmodernism, deconstruction, functional design.

- Important institutions, persons and offices/agencies. Important milestones.

### **Envisaged scientific skills**

Reading and understanding text about the history of design and architecture, drawing own conclusions.

### **Sub-course conclusion and proof of performance**

Writing a historical essay

## Sub-course 3: Final foundation project

**Credit points:** ECT:1 Chinese:0.5

**Sub-course code:** BA FC 10

**Mandatory or elective:** Mandatory

### Learning objectives/aims and competencies

- At the end of the foundation course, students present an own study project. The project reflect and summarises not all, but some contents of the interdisciplinary Foundation Course;
- Beforehand, the faculty defines a topic the field of practise and theory knowledge and reports the expected results to the students;
- The Final Project shows the ability of the students to master a Design or Architecture task with individual skills, tools, methods and technologies;
- Students are able to reflect about the outcome and their learning achievements.
- The successful Final Foundation Project qualifies for the entry in a Master Program.

### Units

1 Final Foundation Project

### Teaching and learning methods and formats

- Self-led project, either in Information/Visual Design, in Industrial Design or Architecture/Urban Planning.
- Integrating all learned competencies from the Interdisciplinary Foundation Course.

### Pre-requirements for this module

All Modules of the Basic Foundation Course successfully completed.

### Envisaged practical skills

None

### Envisaged theoretical and reflective skills

None

### Envisaged scientific skills

None

## **Subcourses conclusion and proof of performance**

- Project presentation;
- Project documentation;
- Self-assessment and reflection

# 跨专业基础课程 III

课程代码: SDFC2003

课程名: 跨专业基础课程 III

学分: 欧方 8 学分 中方 4 学分

开设专业: 建筑学、设计学

先修课程: 无

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

该课程将二维和三维软件的使用与 SISD 实验室和工作坊联系起来。训练学生使用不同的数字设计和生产方法。学习如何将数字结果转移到生产中, 如何改变它, 如何生产和评估它。注重基本功训练与建筑理解相结合; 创造力与综合解决问题能力相结合; 建筑知识与专业理论方法相结合; 设计过程与专业表达技能相结合; 设计实践与综合设计能力相结合等五个方面。使学生的知识结构和知识体系成为一个紧密联系的整体, 以全面的观点认识和解决问题。



## 子课程 1: 技能、方法和工具 2

学分: ECTS:4 哈工大学分:2

必修或选修: 必修

### 课程培养目标与能力

- 该课程将二维和三维软件的使用与 SISD 实验室和研讨会的可能性联系起来。训练学生利用不同的数字设计和生产方法。学习如何将数字结果转移到生产中，如何改变它，如何生产和评估它。专注于从想法和概念到最终实体对象的工作流程。
- 二维和三维设计架构软件包简介；
- 在项目和生产中使用和应用软件；
- 对 SISD 实验室/工作坊使用的基本介绍，学会独立使用 SISD 设施；
- 在 SISD 实验室/工作坊中使用手工、数字制造或原型制作方法；
- 了解设计学和建筑学的数字、物理工作流程。

### 单元

- 1 二维和三维 CAD
- 2 SISD 实验室和工作坊的基本课程设计演讲与展示

### 教学模式与方法

- 讲座
- 工作坊

### 课程先决要求

课程：技能、方法和工具 1

### 目标实践技能

- 学习使用软件进行三维和二维设计，如平面设计、信息设计、工业设计和建筑设计；
- 了解软件的主要功能和局限性；
- 了解与模拟设计方法的区别；
- 了解小型（原型）和大规模（大规模生产-工业）生产的工作流程；
- 将数字结果传输到 SISD 实验室/车间进行原型设计或建模；
- 逆向工程技术；
- 培训和使用基本的车间技术；
- 训练和使用数字制造方法。

### **目标理论与思维能力**

- 了解数字工具的种类和用途；
- 了解实物工具、手工制作方法的种类和用途；
- 了解工具对结果的影响。

### **目标科学技能**

- 评估和评价方法的选择和局限性；
- 评估特定工具对结果的影响；
- 获得工作流程方法的科学专业知识。

### **子课程考核方式**

课程项目

## 单元 1 SISD 实验室和工作坊的基本课程设计演讲与展示

(单元编号: BA FC 8.1)

### 师资配备

SISD 实验室和车间工作人员

### 内容

- SISD 实验室和车间设备概览;
- SISD 实验室和工作坊的使用规则;
- 健康和法规;
- SISD 实验室可用的生产方法、工具和流程的基本类别;
- 不同工具、机械和方法的培训;
- 实验室的工作流程;
- 可用材料、交付程序;
- 可用的数字制作工具和方法;
- 快速原型制作方法。

### 教学模式

- 讲座
- 实践

### 学习目标和能力培养

- 设备的安全使用;
- 开始实验项目前的准备和计划;
- 手工艺技能;
- 培训使用不同的机器和方法;
- 为给定的任务选择正确的方法和材料;
- 使用数字方法;
- 使用模拟方法;
- 独立工作。

### 单元总结和考核方式

制作不同的 CAD 训练作品

## 参考书目/文献

待定

## 必要的基础设施和设备

笔记本电脑

## 参考资料和网页链接

待定

## 子课程 2: 设计与建筑史 2

学分: ECTS:3 哈工大学分:1.5

必修或选修: 必修

### 课程培养目标与能力

设计和建筑史课程的第二部分，连接并延续第一部分。

### 单元

1 设计与建筑史 2

### 教学模式与方法

- 讲座
- 研讨会

### 课程先决要求

设计与建筑史第 1 部分

### 目标实践技能

无

### 目标理论与思维能力

- 对设计、建筑史的基本知识和理解，以及以下不同影响：
  - 历史；
  - 政治；
  - 技术；
  - 文化；
  - 社会；
  - 全球/本地。
- 解释基本理论和方法。从今天和未来的历史中汲取见解。了解历史发展，当前和未来的结果和理论。重要的文化转向和运动，如工艺美术、现代主义、后现代主义、解构主义、功能设计。
- 重要的研究所、人员和办公室/机构，学科历史上重要的里程碑。

## 目标科学技能

阅读和理解有关设计和建筑历史的资料，并进行总结。

## 子课程考核方式

撰写历史主题的论文

## 子课程 3: 跨专业基础课程设计

学分: ECTS:1 哈工大学分:0.5

必修或选修: 必修

### 课程培养目标与能力

- 在基础课程结束时, 学生会展示自己的个人项目。项目反映和总结的不是跨学科基础课程的全部, 而是部分内容;
- 教师事先定义实践领域和理论知识的主题, 并将预期结果报告给学生;
- 项目展示了学生利用个人技能、工具、方法和技术掌握设计或建筑任务的能力;
- 能够反映学生的学习成果和他们的学习成就。
- 成功的跨专业基础课程设计可使学生获得进入硕士课程学习的资格。

### 单元

1 跨专业基础课程设计

### 教学模式与方法

- 在信息/视觉设计、工业设计或建筑/城市规划领域的学生个人项目;
- 整合从跨学科基础课程中学到的所有能力。

### 课程先决要求

完成所有基础课程。

### 目标实践技能

无

### 目标理论与思维能力

无

### 目标科学技能

无

### 子课程考核方式

- 项目课程设计演讲与展示;

- 项目文件;
- 自我评估和反思。



# Studio Architectural Design I

**Course Code:** SDAT2003

**Course Name:** Studio Architectural Design I

**Credit points:** ECTS:7 Chinese: 5

**Subjects related:** Architecture

**Pre-requirement for the Course:** Interdisciplinary Foundation Course III

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description

The course is the beginning of a series of core design courses for architecture majors. Students will learn and master basic design methods and understand the logic and fundamentals of architectural design based on theoretical study, starting with small space design. On top of this, students will develop their ability to handle space and lay the foundation for more complex architectural designs in their senior year. As a design course, this course also enables students to master basic hands-on skills and the ability to feel the space through model making and drawing.

## Main teaching materials

[1] 周立军等.建筑设计基础[M].哈尔滨工业大学出版社.2008.

## Reference

- [1] (日) 芦原义信著 《街道的美学》尹培桐译百花文艺出版社 2006.6 第一版;
- [2] [美]罗伯特·文丘里《建筑的复杂性与矛盾性》(Complexity and Contradiction in Architecture), Museum of Modern Art, 1965年; 周卜颐译, 中国水利电力出版社知识产权出版社 2006.1 第一版
- [3] Christopher Alexander, A Pattern Language, Oxford University Press, 1977;
- [4] Christian Norberg-Schulz, Existence, Space and Architecture, Praeger, US, 1971;
- [5] 彭一刚。建筑空间组合论[M], 中国建筑工业出版社, 1998;
- [6] 弗莱德里克[筑], 张育南,陈虹徽, 101 Things I Learned in Architecture School, 1998, 机械工业出版社;

## **Learning objectives/aims and competencies**

- Understanding the architectural design process
- Researching the context of a design task
- Experimenting with tools and techniques
- Application of design methods and tools for design project.

## **Units**

1 Studio I-A

2 Studio I-B

## **Teaching and learning methods and formats**

Design studio with regular desk crits

## **Envisaged practical skills**

- The application of techniques like sketching and model making to explore design solutions
- Understanding the complexity and multiple scales of architectural design
- Explore the influence of various techniques for the design process
- Test visual and communication skills for the development of architectural projects at a small scale

## **Envisaged theoretical and reflective skills**

- Gain understanding for the development of a framework for the design process
- Defining topics and themes for research related to design process
- Understand complexity and interdependency of design process and design decision makings

## **Envisaged scientific skills**

None

## **Course conclusion and proof of performance**

Presentation of project at the end of the semester

# Unit 1: Architectural Design Studio I A

(code: BA AR 1.1)

## Profile of lecturer(s)

- Practising Architect with experience in teaching 2nd year

## Content

- Basic introduction to architectural design
- Understanding of the complex interrelationships that determine architecture on the basis of works on form and space, topography, structure and form, light and colour and their relationships to material and construction, as well as the analysis and description of them
- Function and spatial organization in an elementary way, such as the suitability of objects, of spaces and spatial structures for certain purposes and their reaction to environmental conditions
- Development of two short design concepts of 2 weeks each
- Design of smaller scale architectural objects
- Suitable Design objects are: Microspaces, mobile Spaces, hut in specific context (climate, culture), own living space
- Project is developed by Students as their own client

## Teaching and learning methods and formats

- Project with Design studio desk crits
- Lectures

## Learning objectives/aims and competencies

- Understanding the architectural design process
- Researching the context of a design task
- Experimenting with tools and techniques
- Application of design methods and tools for design project
- Management and communication skills
- Negotiating ideas in group work

## Unit conclusion and proof of performance

-Full attendance

- Final project presentation
- Documentation of design process

### **Bibliography / literature**

[1] 周立军等.建筑设计基础[M].哈尔滨工业大学出版社.2008.

### **Necessary infrastructure and equipment**

- Student work space

### **Necessary student equipment**

- Laptop

### **References and web links**

- [1] (日) 芦原义信著 《街道的美学》尹培桐译百花文艺出版社 2006.6 第一版;
- [2] Christopher Alexander, A Pattern Language, Oxford University Press, 1977;
- [3] 彭一刚。建筑空间组合论[M], 中国建筑工业出版社, 1998.

## Unit 2: Architectural Design Studio I B

(code: BA AR 1.2)

### Profile of lecturer(s)

Practising Architect with experience in teaching 2nd year

### Content

- Basic introduction to architectural design
- Understanding of the complex interrelationships that determine architecture on the basis of works on form and space, topography, structure and form, light and colour and their relationships to material and construction, as well as the analysis and description of them
- Function and spatial organization in an elementary way, such as the suitability of objects, of spaces and spatial structures for certain purposes and their reaction to environmental conditions
- Develop individual living architectural design solutions
- Development of two short design concepts of 3 weeks each
- Design of small-scale architectural objects larger than in Studio I A continue the explorations
- Briefing of monofunctional building typology to focus on spatial and structural exploration based on fictional client
- Architectural objects are houses for a fictional client based on geometrical, functional or contextual requirements given – i.e a 9 square-grid with additional constraints by context – ref. to the briefs developed by O.M. Ungers

### Teaching and learning methods and formats

- Project with Design studio desk crits
- Lectures

### Learning objectives/aims and competencies

- Understanding the architectural design process
- Researching the context of a design task
- Experimenting with tools and techniques
- Application of design methods and tools for design project.

### Unit conclusion and proof of performance

-Full attendance

- Final project presentation
- Documentation of design process

### **Bibliography / literature**

[1] 周立军等.建筑设计基础[M].哈尔滨工业大学出版社.2008.

### **Necessary infrastructure and equipment**

- Student work space

### **Necessary student equipment**

- Laptop

### **References and web links**

[1] [美]罗伯特-文丘里,周卜颐译. 建筑的复杂性与矛盾性[M]. 中国水利电力出版社知识产权出版社 2006

[2] Christian Norberg-Schulz, Existence, Space and Architecture, Praeger, US, 1971;

[3] 弗莱德里克[筑], 张育南,陈虹徽, 101 Things I Learned in Architecture School, 1998, 机械工业出版社.

# 工作坊：建筑设计 I

课程代码: SDAT2003

课程名: 建筑设计工作坊 I

学分: 欧方 7 学分 中方 3 学分

开设专业: 建筑学

先修课程: 跨专业基础课 III

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程为建筑学专业的核心设计课程系列的开端。学生将基于理论学习,从小型空间设计开始,学习并掌握基本设计方法,理解建筑设计的逻辑和基本知识。在此基础之上,培养学生对于空间的处理能力,为高年级进行更加复杂的建筑设计打下基础。本课程作为设计课程,也让学生通过模型制作、图纸绘制掌握基本的动手能力和感受空间的能力。

## 主要参考教材

[1] 周立军等.建筑设计基础[M].哈尔滨工业大学出版社.2008.

## 参考文献

- [1] (日) 芦原义信著 《街道的美学》尹培桐译百花文艺出版社 2006.6 第一版;
- [2] [美] 罗伯特·文丘里《建筑的复杂性与矛盾性》(Complexity and Contradiction in Architecture), Museum of Modern Art, 1965 年; 周卜颐译, 中国水利电力出版社知识产权出版社 2006.1 第一版
- [3] Christopher Alexander, A Pattern Language, Oxford University Press, 1977;
- [4] Christian Norberg-Schulz, Existence, Space and Architecture, Praeger, US, 1971;
- [5] 彭一刚。建筑空间组合论[M], 中国建筑工业出版社, 1998;
- [6] 弗莱德里克[筑], 张育南,陈虹徽, 101 Things I Learned in Architecture School, 1998, 机械工业出版社;

## 课程培养目标与能力

- 了解建筑设计的流程。
- 研究设计任务的背景。
- 使用工具和技术。
- 在设计项目中应用设计方法和工具。

## 单元

1 工作坊 I-A

2 工作坊 I-B

## 教学模式与方法

- 具有固定办公桌的设计工作坊。

## 目标实践技能

- 应用如草图和模型制作等技术来探索设计解决方案。
- 理解建筑设计的复杂性和多重尺度。
- 探讨各种技术对设计过程的影响。
- 小规模建筑项目开发时的视觉和沟通技能。

## 目标理论与思维能力

- 了解开发设计过程的框架
- 定义与设计过程相关的研究主题
- 了解设计过程和设计决策的复杂性和相互依赖性。

## 目标科学技能

- 仔细检查和整理各种来源的信息。
- 建立科学框架的能力。
- 了解科学成果和报告。
- 具有产生科学成果的能力。
- 定量和定性的数据评估。
- 根据确定的方案和标准评估项目。

## 考核方式

本学期结束时进行项目汇报。



## 单元 1 建筑设计工作坊 I-A

(单元编号: BA AR 1.1)

### 师资配备

有教学经验的执业建筑师在第二年进行讲授:

### 内容

- 建筑设计的基本介绍
- 理解基于形式和空间、地形、结构以及形式、光、颜色与材料和建筑之间的相互关系分析与具体描述。
- 功能和基本方式的空间组织，如物体的适用性、空间和空间结构的适用性以及它们对环境条件的反应
- 开发两个简短的设计概念，每个耗时 2 周
- 小型建筑对象的设计
- 合适的设计对象：微空间、移动空间、特定的环境下（气候、文化）的小屋、自己的生活空间
- 由学生作为自身客户开发的项目

### 教学模式

- 与设计工作坊的项目（设计评图）。
- 讲座。

### 学习目标和能力培养

- 了解建筑设计的流程。
- 研究设计任务的背景。
- 使用工具和技术。
- 在设计项目中应用设计方法和工具。
- 管理与沟通技巧。
- 组内协商能力。

### 单元总结和考核方式

- 课堂出勤
- 项目成果展示

- 设计过程涉及的文件

### **参考书目/文献**

[1] 周立军等.建筑设计基础[M].哈尔滨工业大学出版社.2008.

### **必要的基础设施和设备**

- 学生工作空间

### **参考资料和网页链接**

[1] (日) 芦原义信著 《街道的美学》尹培桐译百花文艺出版社 2006.6 第一版;

[2] Christopher Alexander, A Pattern Language, Oxford University Press, 1977;

[3] 彭一刚。建筑空间组合论[M], 中国建筑工业出版社, 1998.

## 单元 2 建筑设计工作坊 I-B

(单元编号: BA AR 1.2)

### 师资配备

- 有教学经验的执业建筑师在第二年进行讲授。

### 内容

- 建筑设计的基本介绍
- 理解基于形式和空间、地形、结构以及形式、光、颜色与材料和建筑之间的相互关系分析与具体描述。
- 功能和基本方式的空间组织，如物体的适用性、空间和空间结构的适用性以及它们对环境条件的反应
- 开发个人生活建筑设计解决方案
- 开发两个简短的设计概念，每个耗时 3 周
- 继续探索及设计比工作室 I A 中更大的小型建筑对象
- 单功能建筑类型学简介，重点关注基于虚构客户的空间和结构探索
- 建筑对象是基于几何、功能或给定上下文需求的虚构客户房屋——可参考 O.M.Ungers 所提出的带附加约束的九宫网格。

### 教学模式

- 与设计工作坊项目（设计评图）。
- 讲座

### 学习目标和能力培养

- 了解建筑设计的流程。
- 研究设计任务的背景。
- 使用工具和技术。
- 在设计项目中应用设计方法和工具。

### 单元总结和考核方式

- 课堂出勤
- 项目成果展示
- 设计过程涉及的文件

## 参考书目/文献

[1] 周立军等.建筑设计基础[M].哈尔滨工业大学出版社.2008.

## 必要的基础设施和设备

学生工作空间

## 参考资料和网页链接

[1] [美]罗伯特-文丘里,周卜颐译. 建筑的复杂性与矛盾性[M]. 中国水利电力出版社知识出版社 2006

[2] Christian Norberg-Schulz, Existence, Space and Architecture, Praeger, US, 1971;

[3] 弗莱德里克[筑], 张育南,陈虹徽, 101 Things I Learned in Architecture School, 1998, 机械工业出版社.

# Architecture Culture I

**Course Code:** SDAT2004

**Course Name:** Architecture Culture I

**Credit points:** ECTS:4 Chinese: 2

**Subjects related:** Design

**Pre-requirement for the Course:** Foundation course

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description

The course aims to develop students' understanding of architectural culture and the spatial expression of key elements through the study of architectural history and digital technology. The course expands the field of study of architectural culture through expertise in digital simulation and typology. On top of this, the course incorporates new design thinking such as new technologies and methods to improve the overall quality of undergraduate students, improve their knowledge structure, and broaden their international perspective.

## *Main teaching materials*

郑时龄, 建筑批评学[M], 中国建筑工业出版社, 2001.

## Reference

[1] (意) 塔夫里 (Manfredo Tafuri), 《建筑学的理论和历史》(Theories and History of Architecture), Harper, 纽约, 1980 年, 郑时龄译, 建筑工业出版社, 北京, 1991 年 9 月。

[2] (英) 勃罗德彭特 (Geoffrey Broadbent)、理查德·本特 (Richard Bunt)、查尔斯·詹克斯 (Charles Jencks) 合著, 《符号·象征与建筑》(Signs, Symbols and Architecture), John Wiley & Sons Inc, 纽约-伦敦, 1980 年; 乐民成等译, 建筑工业出版社, 北京, 1991 年 5 月。

[3] [美] 保罗·拉索, 图解思考, 中国建筑工业出版社, 2002,

[4] 沈福煦, 中国古代建筑文化史, 上海古籍出版社出版, 2001。

[5] 钟训正. 《建筑画环境表现与技法》[M]. 中国建筑工业出版社. 2006.

[6] (美) 凯文·林奇 (Kevin Lynch), 《城市的印象》(The Image of the City), MIT Press, 麻省剑桥 (Cambridge, MA), 1960 年, 项秉仁译, 建筑工业出版社, 北京, 1990 年 7 月; 《城市意象》, 方益萍、何晓军译 (译自英文版第 25 版), 华夏出版社, 北京, 2001 年 4 月。

[7] (美) C·亚历山大 (Christopher Alexander)、H·奈斯、A·安尼诺、I·金, 《城市设计新理论》(A New Theory Urban Design), Oxford University Press, 1987 年, 陈治业、童丽萍译, 汤昱川审校, 知识产权出版社, 北京, 2002 年 5 月第一版。(英)

## **Learning objectives/aims and competencies**

- Understanding the value and concept of Architecture in historic context
- Overview of architectural presentation techniques related to historic context
- Understanding the relationship between techniques and design process
  - Overview of spatial, material and technical evolution of architecture
  - Overview of architectural presentation techniques related to historic context

## **Units**

1 History of Architecture 1

2 Media / Architectural presentation 1

## **Teaching and learning methods and formats**

- Lectures
- Workshop

## **Envisaged practical skills**

- Ability to define suitable presentation techniques based on task and references

## **Envisaged theoretical and reflective skills**

- Understanding the correlation between art, society and architecture

## **Envisaged scientific skills**

- Introduction to research

## **Course conclusion and proof of performance**

Test

# Unit 1: History of Architecture 1

(code: BA AR 2.1)

## Profile of lecturer(s)

- Expert in theory and history of architecture and broader cultural context
- Familiar with the development of architectural representation techniques throughout history
- Interdisciplinary Research & Theory background

## Content

- Architecture and Meaning
- Students will become familiar with architectural and urban design solutions and their historical, societal and technological backgrounds
- Insights into broader historical developments and the relationship between societies and technology
- This seminar offers views on both Western and Non-Western approaches to design
- Methodological introduction to topics of architectural history in context to arts and design
- Introduction to critical thinking and reflection about texts related to architecture
- General overview of history of architecture

## Teaching and learning methods and formats

- Lectures & Inputs,
- Guest lectures
- Mentoring
- Desk based research and field studies

## Learning objectives/aims and competencies

- Introduction into topics of architectural history / Terminology of architectural history
- Critical reflection on architectural design solutions
- Articulation of thoughts, discussing architectural concepts
- Management and communication skills
- Negotiating ideas in group work
- Research capabilities
- Analysing architecture and objects



- First introduction to scientific working methods

### **Unit conclusion and proof of performance**

- -Written exam
- -Presentation of paper
- -Oral contribution to discussion

### **Bibliography / literature**

郑时龄, 建筑批评学[M], 中国建筑工业出版社, 2001.

### **Necessary infrastructure and equipment**

- Access to library / international archives

### **References and web links**

[1] (意) 塔夫里 (Manfredo Tafuri), 《建筑学的理论和历史》(Theories and History of Architecture), Harper, 纽约, 1980 年, 郑时龄译, 建筑工业出版社, 北京, 1991 年 9 月。

[2] John Wiley & Sons Inc, 纽约-伦敦, 1980 年; 乐民成等译, 建筑工业出版社, 北京, 1991 年 5 月。

[3] [美] 保罗·拉索, 图解思考, 中国建筑工业出版社, 2002,

[4] 沈福煦, 中国古代建筑文化史, 上海古籍出版社出版, 2001。

## **Unit 2: Media / Architectural Presentation 1**

(code: BA AR 2.2)

### **Profile of lecturer(s)**

- Expert in sketching and architectural drawing
- Expert in CAD
- Expert in physical Modelmaking / Prototyping
- Expert in Film & Photography
- All familiar with Specificities and Requirements of Architectural Design Processes
- Familiar with History & Theory of artistic Representation

### **Outstanding Ability and Interest of incorporating and including new**

#### **technologies Content**

- Architectural Representation 1
- architectural drawing projection
- 2D and 3D CAD
- physical model making
- Time-based Media
- architectural photography and filming
- cinematic language and image composition
- narrative and storyboard
- editing environments

#### **Teaching and learning methods and formats**

- Lectures & guest lectures, mentoring
- Desk based research, field studies,
- Prototyping, Testing

#### **Learning objectives/aims and competencies**

- become familiar with representational techniques and language used in architectural design processes, contemporary presentation and practice
- formulate and apply a coherent representational strategy

## Unit conclusion and proof of performance

- Full attendance
- In class assignments
- Documentation of assignment results

## Bibliography / literature

郑时龄, 建筑批评学[M], 中国建筑工业出版社, 2001.

<https://www.drawingmatter.org/>

The Complete Papers Hardcover – 18 May 2018 by Thomas Demand, Mack

Alex Prager: Silver Lake Drive Hardcover – 14 Jun 2018 by Alex Prager, Thames & Hudson Ltd

## Necessary infrastructure and equipment

- Hardware:
- Modelmaking tools
- Printer
- Foam cutter
- Laser cutter
- Video-Editing Workstations
- Camera/Smartphone/Stabilizers
- Macro Lenses
- Software
- CAD Software
- Video and Photo Editing Software

## References and web links

[1] (英) 勃罗德彭特 (Geoffrey Broadbent)、理查德·本特 (Richard Bunt)、查尔斯·詹克斯 (Charles Jencks) 合著,《符号·象征与建筑》(Signs, Symbols and Architecture), John Wiley & Sons Inc, 纽约-伦敦, 1980 年; 乐民成等译, 建筑工业出版社, 北京, 1991 年 5 月。

[2] 钟训正.《建筑画环境表现与技法》[M].中国建筑工业出版社.2006.

[3] (美) 凯文·林奇 (Kevin Lynch),《城市的印象》(The Image of the City), MIT Press, 麻省剑桥 (Cambridge, MA), 1960 年, 项秉仁译, 建筑工业出版社, 北京, 1990 年 7 月;《城市意象》, 方益萍、何晓军译 (译自英文版第 25 版), 华夏出版社, 北京, 2001

年4月。

[4] (美) C·亚历山大 (Christopher Alexander)、H·奈斯、A·安尼诺、I·金,《城市设计新理论》(A New Theory Urban Design), Oxford University Press, 1987年,陈治业、童丽萍译,汤昱川审校,知识产权出版社,北京,2002年5月第一版。(英)

# 建筑文化 I

课程代码: SDAT2004

课程名: 建筑文化 I

学分: 欧方 4 学分 中方 2 学分

开设专业: 建筑学

先修课程: 基础课

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程旨在通过对建筑历史和数字技术的研究, 培养学生对建筑文化和关键元素的空间表达的理解。课程通过数字模拟和类型学的专业知识, 拓展建筑文化的研究领域。在此基础上, 课程结合新的技术和方法等新的设计思维, 提高本科生的综合素质, 完善知识结构, 拓宽国际视野。

## 主要参考教材

郑时龄, 建筑批评学[M], 中国建筑工业出版社, 2001.

## 参考文献

[1] (意) 塔夫里 (Manfredo Tafuri), 《建筑学的理论和历史》(Theories and History of Architecture), Harper, 纽约, 1980 年, 郑时龄译, 建筑工业出版社, 北京, 1991 年 9 月。

[2] (英) 勃罗德彭特 (Geoffrey Broadbent)、理查德·本特 (Richard Bunt)、查尔斯·詹克斯 (Charles Jencks) 合著, 《符号·象征与建筑》(Signs, Symbols and Architecture), John Wiley & Sons Inc, 纽约-伦敦, 1980 年; 乐民成等译, 建筑工业出版社, 北京, 1991 年 5 月。

[3] [美] 保罗·拉索, 图解思考, 中国建筑工业出版社, 2002,

[4] 沈福煦, 中国古代建筑文化史, 上海古籍出版社出版, 2001。

[5] 钟训正. 《建筑画环境表现与技法》[M]. 中国建筑工业出版社. 2006.

[6] (美) 凯文·林奇 (Kevin Lynch), 《城市的印象》(The Image of the City), MIT Press, 麻省剑桥 (Cambridge, MA), 1960 年, 项秉仁译, 建筑工业出版社, 北京, 1990 年 7 月; 《城市意象》, 方益萍、何晓军译 (译自英文版第 25 版), 华夏出版社, 北京, 2001 年 4 月。

[7] (美) C·亚历山大 (Christopher Alexander)、H·奈斯、A·安尼诺、I·金,《城市设计新理论》(A New Theory Urban Design), Oxford University Press, 1987 年, 陈治业、童丽萍译, 汤昱川审校, 知识产权出版社, 北京, 2002 年 5 月第一版。(英)

## 课程培养目标与能力

- 在历史背景下理解建筑的价值和概念
- 与历史背景相关的建筑展示技术概述
- 理解技术和设计过程之间的关系
- 建筑的空间、材料和技术演变概述
- 与历史背景相关的建筑展示技术概述

## 单元

1 建筑历史 1

2 媒体/建筑展示 1

## 教学模式与方法

- 讲座
- 工作坊

## 目标实践技能

- 能够根据任务和参考文献定义合适的表达技巧

## 目标理论与思维能力

- 理解艺术、社会和建筑之间的相互关系

## 目标科学技能

- 研究简介

## 考核方式

课程项目为主导的考核方式（评分包括出勤率、课堂作业、期末项目）

## 单元 1 建筑历史 1

(单元编号: BA AR 2.1)

### 师资配备

- 精通建筑的理论和历史，以及更广泛的文化背景
- 熟悉整个历史上的建筑展现技术发展
- 跨学科研究与理论背景

### 内容

- 建筑和意义
- 学生们将会熟悉建筑和城市设计的解决方案，以及它们的历史、社会和技术背景
- 洞察更广泛的历史发展以及社会和技术之间的关系
- 研讨会提供了对西方和非西方的设计方法观点
- 在艺术和设计的背景下，建筑历史主题的方法论介绍
- 关于建筑相关文本的批判性思考和反思
- 建筑学历史概况

### 教学模式

- 讲座和理论灌输，
- 客座讲座
- 指导
- 案头研究和实地研究

### 学习目标和能力培养

- 介绍建筑历史主题/建筑历史术语
- 对建筑设计解决方案的批判性反思
- 表达思想，讨论建筑学概念
- 管理和沟通技巧
- 在小组工作中协商想法
- 研究能力
- 分析建筑和对象
- 首次介绍科学的工作方法。

### 单元总结和考核方式

- 笔试



- 论文的展示
- 口头讨论的参与度

### **参考书目/文献**

郑时龄, 建筑批评学[M], 中国建筑工业出版社, 2001.

### **必要的基础设施和设备**

- 可以访问图书馆/国际档案

### **参考资料和网页链接**

[1] (意) 塔夫里 (Manfredo Tafuri), 《建筑学的理论和历史》(Theories and History of Architecture), Harper, 纽约, 1980 年, 郑时龄译, 建筑工业出版社, 北京, 1991 年 9 月。

[2] John Wiley & Sons Inc, 纽约-伦敦, 1980 年; 乐民成等译, 建筑工业出版社, 北京, 1991 年 5 月。

[3] [美] 保罗·拉索, 图解思考, 中国建筑工业出版社, 2002,

[4] 沈福煦, 中国古代建筑文化史, 上海古籍出版社出版, 2001。

## 单元 2 媒体/建筑展示 1

(单元编号: BA AR 2.2)

### 师资配备

- 在素描和建筑绘画方面的专家
- CAD 专家
- 在物理建模/原型设计方面的专家
- 在电影和摄影方面的专家
- 所有熟悉建筑设计流程的特点和要求的人
- 熟悉艺术表现的历史和理论
- 对整合和新技术具有杰出能力和兴趣的人

### 内容

- 建筑表现 1
- 建筑图纸投影
- 二维和三维 CAD
- 物理模型制作
- 基于时间的媒体形式
- 建筑摄影与拍摄
- 电影语言和图像构成
- 叙事和脚本
- 编辑环境

### 教学模式

- 讲座和客座讲座, 指导
- 案头研究, 实地研究,
- 原型、测试

### 学习目标和能力培养

- 熟悉在建筑设计过程、当代展示和实践中使用的表现手法和语言。
- 制定和应用一个连贯的代表性策略。

### 单元总结和考核方式

- 课堂出勤
- 课堂任务

- 课程任务的文件

## 参考书目/文献

郑时龄, 建筑批评学[M], 中国建筑工业出版社, 2001.

<https://www.drawingmatter.org/>

完整论文精装-2018年5月18日, 托马斯·迪姆德, 麦克

亚历克斯·普拉格: 银湖大道精装版-2018年6月14日, 作者: 亚历克斯·普拉格, 泰晤士和哈德逊有限公司

## 必要的基础设施和设备

硬件:

- 模型制作工具
- 打印机
- 泡沫切割机
- 激光切割机
- 视频编辑工作站
- 相机/智能手机/稳定器
- 广角镜头

软件:

- CAD 软件
- 视频和照片编辑软件

## 参考资料和网页链接

[1] (英) 勃罗德彭特 (Geoffrey Broadbent)、理查德·本特 (Richard Bunt)、查尔斯·詹克斯 (Charles Jencks) 合著, 《符号·象征与建筑》(Signs, Symbols and Architecture), John Wiley & Sons Inc, 纽约-伦敦, 1980年; 乐民成等译, 建筑工业出版社, 北京, 1991年5月。

[2] 钟训正. 《建筑画环境表现与技法》[M]. 中国建筑工业出版社. 2006.

[3] (美) 凯文·林奇 (Kevin Lynch), 《城市的印象》(The Image of the City), MIT Press, 麻省剑桥 (Cambridge, MA), 1960年, 项秉仁译, 建筑工业出版社, 北京, 1990年7月; 《城市意象》, 方益萍、何晓军译 (译自英文版第25版), 华夏出版社, 北京, 2001年4月。

[4] (美) C·亚历山大 (Christopher Alexander)、H·奈斯、A·安尼诺、I·金, 《城市设计新理论》(A New Theory Urban Design), Oxford University Press, 1987年, 陈治业、童丽萍译, 汤昱川审校, 知识产权出版社, 北京, 2002年5月第一版。(英)

# Building Technologies I

**Course Code:** SDAT2005

**Course Name:** BUILDING TECHNOLOGIES I

**Credit points:** ECTS:6 Chinese: 4

**Subjects related:** Architecture

**Pre-requirement for the Course:** Foundation course

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description

The course combines basic knowledge of architecture with knowledge related to building construction, building structure, and ecological engineering to develop architectural and engineering skills and equip students with basic architectural design technical fundamentals. The course relies on a series of lectures and workshops to teach the principles of architectural design and construction, structure, and ecology, and to lay the foundation for the upper level courses. The class combines theoretical courses and workshops to provide students with an understanding of basic principles while having the awareness to apply relevant knowledge in design.

## Main teaching materials

[1] 西尔弗 (钟冠球, 肖明慧 译).《建筑技术概论——给建筑师的建筑技术设计指南》. [2] 中国建筑工业出版社. 2011-10. ISBN: 9787112133970.

[3] 可持续设计[M]. 华中科技大学出版社, 威廉姆斯, 2015

[4] 可持续建筑的理论与技术[M]. 大连理工大学出版社, 郭飞, 2016

[5] 建筑节能技术与建筑设计[M]. 中国电力出版社, 曲翠松, 2015

[6] 中国建筑节能年度发展研究报告[M]. 中国建筑工业出版社, 清华大学建筑节能研究中心, 2019

[7] 环境生态学[M]. 清华大学出版社, 曲向荣, 2012

[8] 吴良镛 著《人居环境科学导论》中国建筑工业出版社

[9] Dejan Mumovic, Mat Santamouris, A Handbook of Sustainable Building Design and Engineering [M], Taylor & Francis, 2018.

[10] Chistian Norberg-Schulz, Architecture : Presence, Language Place, Press: Skira Editore, 2000.

- [11] Brian Edwards. Sustainable architecture [M]. Architectural Press.1996.
- [12] Herman Hertzberger. Lessons for students in Architecture [M]. Uitgeverij 010 Publishers, Rotterdam . 1991.
- [13] Chris Abel, Architecture & Identity: Response to Culture and Technological Change, Butterworth-Heinemann, 2nd Edition, London, 2000
- [14] Ken Yeang, Ecodesign: A manual for ecological design [M], John Wiley & Sons , 2008
- [15] Aberley, D(ed.), 1994. Futures by Design, The Practice of Ecological Planning [M]. New Society Publishers, Canada,

## **Reference**

None

## **Learning objectives/aims and competencies**

- Introduction to technical aspects of architectural design
- Understanding of influence of basic principles of physics for architectural design.
- While using structural engineering tools, students gain knowledge on how to design based on concepts and typologies of structural optimisation.

## **Units**

1 Building Construction

2 Structural Systems 1

3 Ecology 1

## **Teaching and learning methods and formats**

- Lectures & Guest lectures,
- Field studies, visits to existing buildings
- Prototyping, Testing

## **Envisaged practical skills**

- design ability to deal with technical parameters
- Combine architectural design with computer science techniques

## **Envisaged theoretical and reflective skills**

- ability to describe technical requirements and include into
- architectural design concept

## **Envisaged scientific skills**

- Combine architectural design with computer science techniques

## **Course conclusion and proof of performance**

-Written exams

-Presentations

# Unit 1: Structural Systems 1

(code: BA AR 3.1)

## Profile of lecturer(s)

- Structural Engineer with architectural knowledge experienced in integral design solutions on many scale and typologies and various materials

## Content

- Introduction to the basics of structural systems and the corresponding structural performance.
- Lectures on topics such as basics and concepts, effects, equilibrium, support forces, cutting forces, single-field and multi-field beams, building stiffening, stress determination, strength theory, design, stability, trusses, rope structures, arch structures, frame structures

## Teaching and learning methods and formats

- Lectures & Guest lectures,
- field studies, visits to existing buildings
- Prototyping, Testing

## Learning objectives/aims and competencies

- basics of structural engineering, overview of common flat and spatial support systems,
- reduction of complex load-bearing systems to simple static models,
- understanding of the load-path and deformation behaviour of load-bearing structures,
- determination of internal forces and approximate design
- Calculation and dimensioning of simple examples in the exercises
- Focus on perception and practical application across materials

## Unit conclusion and proof of performance

-Written exam

## **-Documentation of course assignments**

### **Bibliography / literature**

- [1] 西尔弗 (钟冠球, 肖明慧 译).《建筑技术概论——给建筑师的建筑技术设计指南》. 中国建筑工业出版社. 2011-10. ISBN: 9787112133970.
- [2] 可持续设计[M]. 华中科技大学出版社 , 威廉姆斯, 2015
- [3] Dejan Mumovic,Mat Santamouris, A Handbook of Sustainable Building Design and Engineering [M], Taylor & Francis, 2018.
- [4] Chistian Norberg-Schulz , Architecture : Presence, Language Place, Press: Skira Editore,2000.

### **Necessary infrastructure and equipment**

Simulation software and demonstration models

### **Necessary student equipment**

Laptop

### **References and web links**

None



## Unit 2: Building Construction 1

(code: BA AR 3.2)

### Profile of lecturer(s)

- Practising architect with practical experience of execution phases.
- Familiar with application of Digital and Parametric Architecture

### Content

- Introduction to the basics of building construction related to structural design
- material properties,
- manufacturing techniques,
- joining technologies,
- construction principles and load-bearing behaviour.
- Learning about performative aspects of material systems
- technical and legal requirements and construction methods for the design of buildings

### Teaching and learning methods and formats

- Lecture
- Workshop

### Learning objectives/aims and competencies

- Architectural notation related to material and structural systems
- Application of theoretical knowledge for architectural design
- practical skills in the design of load-bearing structures
- Acquire the ability to intuitively record and analytically assess the power flow of different load-bearing systems
- Evaluation of the static-constructive aspects in a functional, economic and design context
- Ability to creatively integrate the supporting structure into the architectural design process
- Understanding different construction using different materials like brick, steel, concrete, plastics and textiles

## **Unit conclusion and proof of performance**

- -Full attendance
- -In class assignments
- -Documentation of small design exercises

## **Bibliography / literature**

- [1] 可持续建筑的理论与技术[M]. 大连理工大学出版社 , 郭飞, 2016
- [2] 建筑节能技术与建筑设计[M]. 中国电力出版社 , 曲翠松, 2015
- [3] 中国建筑节能年度发展研究报告[M]. 中国建筑工业出版社 , 清华大学建筑节能研究中心, 2019
- [4] Brian Edwards. Sustainable architecture [M]. Architectural Press.1996.
- [5] Herman Hertzberger. Lessons for students in Architecture [M]. Uitgeverij 010 Publishers, Rotterdam . 1991.

## **Necessary infrastructure and equipment**

- Digital simulation software and model making equipment
- Workshop space for practical demonstration of material systems

## **Necessary student equipment**

Laptop

## **References and web links**

None

## Unit 3: Ecology 1

(code: BA AR 3.3)

### Profile of lecturer(s)

- Understanding of Permaculture
- Experts in environmental practises and ecology
- Experts in social sciences and architecture
- Familiar with application of Ecological, zero carbon, self-sufficient, passive Architecture
- Interdisciplinary Research & Theory background

### Content

- The course focuses on studying the relationship between architecture and ecology and the societal aspects of this relationship along the last decades.
- Introduction to ecological topics
- Holistic thinking, i.e., the principles of permaculture
- Natural systems / Regenerative systems
- Different architectural solutions to restore nature and environment will be studied in order to understand their possibilities and limitations

### Teaching and learning methods and formats

- Lectures & Inputs, Guest lectures,
- Mentoring
- Desk based research,
- field studies

### Learning objectives/aims and competencies

- Exploring architectural solutions based on an understanding of ecosystems
- Ability to produce Informed Design and building processes following environmental and biological data
- Understand Humans as part of the natural ecosystem
- Combine architectural design with living systems and biology integration

### Unit conclusion and proof of performance

- Full attendance

- In class assignments
- Documentation of course work

### **Bibliography / literature**

[1] 环境生态学[M]. 清华大学出版社 , 曲向荣, 2012

[2] 吴良镛 著《人居环境科学导论》中国建筑工业出版社

[3] Chris Abel, Architecture & Identity: Response to Culture and Technological Change, Butterworth-Heinemann, 2nd Edition, London, 2000

[4] Ken Yeang, Ecodesign: A manual for ecological design [M], John Wiley & Sons , 2008

[5] Aberley, D(ed.), 1994. Futures by Design, The Practice of Ecological Planning [M]. New Society Publishers, Canada,

### **Necessary infrastructure and equipment**

- Library access

### **Necessary student equipment**

Laptop

### **References and web links**

None

# 建筑技术 I

课程代码: SDAT2005

课程名: 建筑技术 I

学分: 欧方 6 学分 中方 4 学分

开设专业: 建筑学

先修课程: 基础课

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述

课程结合建筑学的基本知识和建筑施工、建筑结构、生态工程相关知识, 培养学生建筑和工程技能, 使学生具备基本建筑设计技术基础知识。本课程依托系列讲座和工作坊, 讲授建筑设计施工、结构、生态学原理, 为高年级的课程打下基础。本课通过理论课程与工作坊结合的形式, 使学生了解基本原理的同时, 具有在设计中运用相关知识的意识。

## 主要参考教材

- [1] 西尔弗 (钟冠球, 肖明慧 译).《建筑技术概论——给建筑师的建筑技术设计指南》. [2] 中国建筑工业出版社. 2011-10. ISBN: 9787112133970.
- [3] 可持续设计[M]. 华中科技大学出版社, 威廉姆斯, 2015
- [4] 可持续建筑的理论与技术[M]. 大连理工大学出版社, 郭飞, 2016
- [5] 建筑节能技术与建筑设计[M]. 中国电力出版社, 曲翠松, 2015
- [6] 中国建筑节能年度发展研究报告[M]. 中国建筑工业出版社, 清华大学建筑节能研究中心, 2019
- [7] 环境生态学[M]. 清华大学出版社, 曲向荣, 2012
- [8] 吴良镛 著《人居环境科学导论》中国建筑工业出版社
- [9] Dejan Mumovic, Mat Santamouris, A Handbook of Sustainable Building Design and Engineering [M], Taylor & Francis, 2018.
- [10] Chistian Norberg-Schulz, Architecture : Presence, Language Place, Press: Skira Editore, 2000.
- [11] Brian Edwards. Sustainable architecture [M]. Architectural Press. 1996.
- [12] Herman Hertzberger. Lessons for students in Architecture [M]. Uitgeverij 010 Publishers, Rotterdam . 1991.

[13] Chris Abel, Architecture & Identity: Response to Culture and Technological Change, Butterworth-Heinemann, 2nd Edition, London, 2000

[14] Ken Yeang, Ecodesign: A manual for ecological design [M], John Wiley & Sons , 2008

[15] Aberley, D(ed.), 1994. Futures by Design, The Practice of Ecological Planning [M]. New Society Publishers, Canada,

## 参考文献

无

## 课程培养目标与能力

- 对建筑设计技术方面的介绍。
- 了解物理学基本原理对建筑设计的影响。
- 在使用结构工程工具时，学生们获得了如何基于结构优化的概念和类型学进行设计的知识。

## 单元

- 1 建筑施工
- 2 结构系统 1
- 3 生态学 1

## 教学模式与方法

- 讲座和客座讲座
- 实地研究，参观现有建筑
- 原型、测试

## 目标实践技能

- 具有处理技术参数的设计能力。
- 结合建筑设计与计算机科学技术

## 目标理论与思维能力

- 了解技术要求并将其纳入建筑设计概念。

## 目标科学技能

- 理解建筑设计技术相关理论原理。
- 具备在设计中应用先进建筑技术的意识。

## 考核方式

笔试；

成果展示

## 单元 1 结构系统 1

(单元编号: BA AR 3.1)

### 师资配备

- 结构工程师，在各种规模、类型和材料的整体设计解决方案方面有丰富的建筑经验内容
- 介绍结构系统的基础知识和相应的结构性能。
- 讲座的主题包括基础和概念、效果、平衡、支撑力、切割力、单场和多场梁、建筑加筋、应力确定、强度理论、设计、稳定性、桁架、绳索结构、拱形结构、框架结构

### 教学模式

- 讲座和客座讲座
- 实地研究，参观现有建筑
- 原型、测试

### 学习目标和能力培养

- 结构工程的基础知识，通用的平面和空间支撑系统的概述，
- 将复杂的承重系统简化为简单的静态模型，
- 了解承重结构的载荷路径和变形行为，
- 内力的确定和近似设计
- 练习中简单示例的计算和尺寸确定
- 关注跨材料的感知和实际应用

### 单元总结和考核方式

- 笔试
- 课堂任务的文件

### 参考书目/文献

[1] 西尔弗 (钟冠球, 肖明慧 译). 《建筑技术概论——给建筑师的建筑技术设计指南》. 中国建筑工业出版社. 2011-10. ISBN: 9787112133970.

[2] 可持续设计[M]. 华中科技大学出版社, 威廉姆斯, 2015

[3] Dejan Mumovic, Mat Santamouris, A Handbook of Sustainable Building Design and Engineering [M], Taylor & Francis, 2018.

[4] Chistian Norberg-Schulz, Architecture : Presence, Language Place, Press: Skira



Editore,2000.

### **必要的基础设施和设备**

- 仿真软件和演示模型
- 便携式电脑

### **参考资料和网页链接**

无

## 单元 2 建筑施工 1

(单元编号: BA AR 3.2)

### 师资配备

- 具有施工阶段实践经验的从业建筑师。
- 熟悉数字和参数化建筑的应用

### 内容

- 与结构设计相关的建筑施工基础知识介绍
- 物料性质
- 制造技术
- 连接技术
- 施工原理和承载性能。
- 学习材料系统的表现方面
- 建筑设计的技术、法律要求和施工方法

### 教学模式

- 讲座
- 工作坊

### 学习目标和能力培养

- 与材料和结构系统相关的建筑符号
- 建筑设计理论知识的应用。
- 在承重结构设计方面的实用技能
- 具备直观记录和分析评估不同承重系统潮流的能力
- 在功能、经济和设计背景下的静态
- 建设性方面的评估
- 能够创造性地将支撑结构融入到建筑设计过程中
- 了解不同的结构，使用不同的材料，如砖、钢、混凝土、装饰材料和纺织品。

### 单元总结和考核方式

- 课堂出勤
- 课堂任务
- 小型设计练习的文档

## 参考书目/文献

- [1] 可持续建筑的理论与技术[M]. 大连理工大学出版社，郭飞, 2016
- [2] 建筑节能技术与建筑设计[M]. 中国电力出版社，曲翠松, 2015
- [3] 中国建筑节能年度发展研究报告[M]. 中国建筑工业出版社，清华大学建筑节能研究中心, 2019
- [4] Brian Edwards. Sustainable architecture [M]. Architectural Press.1996.
- [5] Herman Hertzberger. Lessons for students in Architecture [M]. Uitgeverij 010 Publishers, Rotterdam . 1991.

## 必要的基础设施和设备

- 数字仿真软件及模型制作设备
- 材料系统实际演示的工作坊空间

## 参考资料和网页链接

无

## 单元 3 生态学 1

(单元编号: BA AR 3.3)

### 师资配备

- 对朴门永续设计的理解
- 环境实践和生态学方面的专家
- 社会科学和建筑学方面的专家
- 熟悉生态型、零碳、自给自足、被动式建筑的应用
- 跨学科研究与理论背景

### 内容

- 本课程的重点研究建筑和生态学之间的关系，以及过去几十年这种关系的社会方面。
- 生态学主题简介
- 整体思维，即朴门永续设计的原则
- 自然系统/再生系统
- 我们将研究恢复自然和环境的不同建筑解决方案，以了解它们的可能性和局限性

### 教学模式

- 讲座与理论灌输，客座讲座，
- 指导
- 案头研究，
- 实地研究

### 学习目标和能力培养

- 基于对生态系统的理解，探索架构解决方案
- 能够根据环境和生物数据产生知情设计和建筑过程
- 理解人类作为自然生态系统的一部分
- 将建筑设计 with 生命系统和生物整合相结合

### 单元总结和考核方式

- 课堂出勤
- 课堂任务
- 小型设计练习的文档

## 参考书目/文献

- [1] 环境生态学[M]. 清华大学出版社 , 曲向荣, 2012
- [2] 吴良镛 著《人居环境科学导论》中国建筑工业出版社
- [3] Chris Abel, Architecture & Identity: Response to Culture and Technological Change, Butterworth-Heinemann, 2nd Edition, London, 2000
- [4] Ken Yeang, Ecodesign: A manual for ecological design [M], John Wiley & Sons , 2008
- [5] Aberley, D(ed.), 1994. Futures by Design, The Practice of Ecological Planning [M]. New Society Publishers, Canada,

## 必要的基础设施和设备

- 图书馆资源
- 便携式电脑。

## 参考资料和网页链接

无

# Architectural Design Studio II

**Course Code:** SDAT2006

**Course Name:** Architectural Design Studio II

**Credit points:** ECTS:7 Chinese: 5

**Subjects related:** Architecture

**Pre-requirement for the Course:** Foundation course

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

The purpose of the course is to improve students' understanding of design and comprehensive design ability, and deepen design conception and expression ability on the premise of understanding architectural design process, mastering design tasks and using tools and technology. Exploratory topics in a specific environment would be selected and students would take their efforts to put forward scheme design with certain novelty and complexity through investigation and analysis, combined with new design concepts and tool technology. The completion of the architectural scheme would be taken through visual, oral and written communication. Teachers organize seminars and students use collective discussion, guiding students to give full play to their subjective initiative and complete the design scheme independently.

## Main teaching materials

Precedents in Architecture: Analytic Diagrams, Formative Ideas, and Partis

Lessons for Students in Architecture

Lessons in Architecture 2: Space and the Architect

Design principles of public buildings

Livet mellem husene, udeaktiviteter og

## Reference

Betts, M., Luck, R., & McGeorge, D. (1999). Long-term IT research priorities. Strategic management of I.T. In Construction. M. Betts (pp. 331e362). Oxford: Blackwell Science Ltd.

- Biggs, M., & Karlsson, H. (Eds.). (2011). *Routledge companion to research in the arts*. Abingdon: Routledge.
- Cross, N. (2019). Editing Design Studies - and how to improve the likelihood of your paper being published. *Design Studies*, 63(July), A1eA9.
- Forlizzi, J., & Zimmerman, J. (2008). The role of design artifacts in design theory construction. *Artifact*, 2(1), 41e45.

## **Learning objectives/aims and competencies**

- Understanding the architectural design process
- Develop novel architectural design solutions
- Research capabilities to integrate context into design tasks
- Experimenting with tools and techniques
- Exploring architectural design solutions by using creative and scientific methods
- Computational design capabilities
- Understanding complex problems and translating these in a solvable architectural design process
- Ability to speak in public
- Ability to analyse and synthesize
- Ability to generate new ideas (creativity)

## **Units**

1 Studio II-A

2 Studio II-B

## **Teaching and learning methods and formats**

- Project with Design studio desk crits
- Lectures

## **Envisaged practical skills**

- Create architectural design that satisfies both aesthetic and technical requirements
- Understanding the complexity and multiple scales of architectural design

## **Envisaged theoretical and reflective skills**

- Analysis and awareness of a physical context

## **Envisaged scientific skills**

- Exploring architectural solutions by using creative and scientific methods

## **Course conclusion and proof of performance**

Presentation



# Unit 1: Architectural Design Studio II A

(code: BA AR 4.1)

## Profile of lecturer(s)

- Practising Architect with experience in teaching 2nd year
- Familiar with contemporary Architectural Design Methodologies & History of Architectural Typology
- Strong Sense of Context-Awareness in Architectural Design
- Familiar with a wide range of contemporary representational strategies of architectural design and its process

## Content

- 4-week architectural design project in a specific context
- Using a range of media
- and in response to a design brief; design brief is evolving in complexity compared to Design Studio I
- Subject: short term individual housing project exploring the principles of housing typologies

## Teaching and learning methods and formats

- Work in groups and individually
- Regular interaction with tutors and external collaborators
- Tutorials, seminars and workshops

## Learning objectives/aims and competencies

- Understanding, analysis and interpretation of a design brief
- Analysis and awareness of a physical context
- Create architectural design that satisfies both aesthetic and technical requirements
- Understanding the complexity and multiple scales of architectural design
- Demonstration of visual and verbal communication skills

## Unit conclusion and proof of performance

- Full attendance
- In class assignments
- Final project presentation
- Documentation

## **Bibliography / literature**

Will be provided

## **Necessary infrastructure and equipment**

Studio space for working

Model-making workshop

Presentation Space for pin-ups and juries

Exhibition space for public presentation and discourse

## **Necessary student equipment**

Laptop

## **References and web links**

Will be provided

## Unit 2: Architectural Design Studio II B

(code: BA AR 4.2)

### Profile of lecturer(s)

- Practising Architect with experience in teaching 2nd year.
- Familiar with contemporary Architectural Design Methodologies & History of Architectural Typology
- Familiar with a wide range of analytical Strategies in the fields of theoretical, cultural, socio-political, or physical context
- Familiar with a wide range of contemporary of visual, verbal and written representational strategies of architectural design and its process

### Content

- History of residential construction, urban dimensions of housing construction, housing typologies and access systems, living environment, spatiality, living standard and change in quality expectations, architectural solutions in residential construction, socio-political components, paradigm shift through social change,
- 2 architectural design projects of 6 week each in a specific context
- Using a range of media
- and in response to a design brief; design brief continues the level of Studio II A
- Subject: housing projects with increased density, complexity i.e. modular arrangements, compositions of smaller unit into larger scale

### Teaching and learning methods and formats

- Work in groups and individually
- Regular interaction with tutors and external collaborators
- Tutorials, seminars and workshops

### Learning objectives/aims and competencies

- Understanding, analysis and interpretation of a design brief.
- analysis and awareness of a given context (theoretical, cultural, socio-political, or physical context).
- create architectural design that questions and satisfies both aesthetic and technical requirements.
- Demonstration of visual, verbal and written communication skills
- Adequate knowledge of interdisciplinary processes in the satellite modules as an influence on the quality of architectural design.

## **Unit conclusion and proof of performance**

- Full attendance
- In class assignments
- Final project presentation
- Documentation

## **Bibliography / literature**

Will be provided

## **Necessary infrastructure and equipment**

- Studio space for working
- Model-making workshop
- Presentation Space for pin-ups and juries
- Exhibition space for public presentation and discourse

## **References and web links**

Will be provided

# 工作坊：建筑设计 II

课程代码: SDAT2006

课程名: 工作坊: 建筑设计 II

学分: 欧方 7 学分 中方 5 学分

开设专业: 建筑学

先修课程: 无

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程目的在于提高学生对于设计的理解程度与综合设计能力, 在了解建筑设计流程、掌握设计任务、了解使用工具与技术的前提下, 深化设计构思与表达能力。课程选择特定环境下具有探索性的题目, 要求学生通过调研分析, 结合新的设计理念与工具技术, 提出具有新意与复杂性的方案设计, 并通过视觉、口头与书面沟通等多种方式完成建筑方案的表达。教师组织研讨会, 学生采用集体讨论等方式, 引导学生发挥主观能动性, 独立完成设计方案。

## 主要参考教材

《世界建筑大师名作图析》(罗杰·H·克拉克、迈克尔·波斯)

《建筑学教程: 设计原理》(赫茨伯格)

《建筑学教程 2: 空间与设计师》(赫茨伯格)

《公共建筑设计原理》(张文忠)

《交往与空间》(杨·盖尔)

## 参考文献

Betts, M., Luck, R., & McGeorge, D. (1999). Long-term IT research priorities. Strategic management of I.T. In Construction. M. Betts (pp. 331e362). Oxford: Blackwell Science Ltd.

Biggs, M., & Karlsson, H. (Eds.). (2011). Routledge companion to research in the arts. Abingdon: Routledge.

Cross, N. (2019). Editing Design Studies - and how to improve the likelihood of your paper being published. Design Studies, 63(July), A1eA9.

Forlizzi, J., & Zimmerman, J. (2008). The role of design artifacts in design theory construction. Artifact, 2(1), 41e45.

## 课程培养目标与能力

- 了解建筑设计的过程
- 开发新的建筑设计解决方案
- 将环境融入到设计任务中的研究能力
- 试验工具和技术
- 利用创造性和科学的方法探索建筑设计解决方案
- 计算设计能力
- 理解复杂的问题，并在一个可解决的建筑设计过程中转换这些问题
- 在公共场合发言的能力
- 分析和综合的能力
- 产生新想法的能力（创造力）

## 单元

- 1 工作坊 II-A
- 2 工作坊 II-B

## 教学模式与方法

- 小组和个人工作
- 定期与导师和外部合作者互动
- 辅导、研讨会和研讨会

## 目标实践技能

- 创造出同时满足美学和技术要求的建筑设计
- 理解建筑设计的复杂性和多重尺度

## 目标理论与思维能力

- 对物理环境的分析和意识

## 目标科学技能

- 通过使用创造性和科学的方法来探索建筑解决方案

## 考核方式

汇报

## 单元 1 工作坊：建筑设计 II-A

(单元编号: BA AR 4.1)

### 师资配备

- 具有二年教学经验的执业建筑师
- 熟悉当代建筑设计方法和建筑类型学的历史
- 建筑设计中有强烈的情景感知
- 熟悉广泛的当代建筑设计及其过程的代表性策略

### 内容

- 在特定的背景下进行为期 4 周的建筑设计项目
- 使用一系列的媒体
- 回应设计摘要；与设计工作室 I 相比，设计简介在复杂性上不断发展
- 主题：短期的个人住房项目，探索住房类型学的原则

### 教学模式

- 小组和个人工作
- 定期与导师和外部合作者互动
- 研讨会

### 学习目标和能力培养

- 对设计概要的理解、分析和解释
- 对物理环境的分析和感知
- 创造满足美学和技术要求的建筑设计
- 理解建筑设计的复杂性和多重尺度
- 展示视觉和语言沟通技能

### 单元总结和考核方式

- 课堂出勤
- 课堂任务
- 最终成果展示
- 文档

### 参考书目/文献

待定

### **必要的基础设施和设备**

- 工作室工作空间
- 模型制作车间
- 展示空间
- 用于公共展示和讨论的展览空间
- 笔记本电脑

### **参考资料和网页链接**

待定



## 单元 2 工作坊：建筑设计 II-B

(单元编号: BA AR 4.2)

### 师资配备

- 具有二年教学经验的执业建筑师。
- 熟悉当代建筑设计方法和建筑类型学的历史
- 熟悉在理论、文化、社会政治或物理背景等领域的广泛分析策略
- 熟悉建筑设计及其过程的各种当代视觉、语言和书面代表性策略

### 内容

- 住宅建设的历史，住房建设的城市维度，住房类型和接入系统，生活环境、空间性、生活水平和质量期望的变化，住宅建筑的建筑解决方案，社会政治组成部分，通过社会变化的范式转变
- 2 个建筑设计项目，每个项目为期 6 周
- 在特定的背景下使用一系列的媒体
- 回应设计摘要；设计简介继续工作室 II A 的水平
- 主题：密度增加的住宅项目，复杂性即模块化安排，更小单元到更大规模的组成

### 教学模式

- 小组和个人工作
- 定期与导师和外部合作者互动
- 研讨会

### 学习目标和能力培养

- 理解、分析和解释设计概要
- 对给定环境（理论、文化、社会政治或物理环境）的分析和认识
- 创建质疑并满足美学和技术要求的建筑设计
- 视觉、口头和书面沟通技能展示
- 充分了解模块中的跨学科过程对建筑设计品质的影响

### 单元总结和考核方式

- 课堂出勤
- 课堂任务
- 最终成果展示
- 文档

## 参考书目/文献

待定

## 必要的基础设施和设备

- 工作室工作空间
- 模型制作车间
- 展示空间
- 用于公共展示和讨论的展览空间
- 笔记本电脑

## 参考资料和网页链接

待定

# Architecture Culture II

**Course Code:** SDAT2007

**Course Name:** Architecture Culture II

**Credit points:** ECTS:4 Chinese: 2

**Subjects related:** Architecture

**Pre-requirement for the Course:** Architecture Culture I

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

The course aims to enable students to learn about the history of architecture in the development of architecture, and knowledge related to the presentation of architectural media. In terms of architectural history, students will learn the initial development of domestic and international architectural history, understand the impact and influence of external cultural, political and economic factors on architecture, and explain the historical, cultural and aesthetic values of architecture. In the area of architectural media presentation, students will gain a deeper understanding of architecture and better realize conceptual expression through new workflows such as architectural visualization that combine 2D, 3D and 360° panoramic views.

## Main teaching materials

China modern architecture overview

The modern transformation and pattern analysis of Harbin's modern architecture

Learning from Las Vegas

Genius Loci, Towards a Phenomenology of Architect

Modern Architecture: A critical History

## Reference

Frayling, C. (1993). Research in art and design. Royal College of Art Papers, 1(1), 1e5.

Friedman, K. (2000). Creating design knowledge: From research into practice. IDATER. Loughborough University.

Blythe, R., & Schaik, L. (2013). What if design practice matters? Design research in

architecture: An overview. In M. Fraser (Ed.). London: Ashgate

Hillier, B., & Leaman, A. (1976). Architecture as a discipline. *Journal of Architectural Research* 28e32.

Rendell, J. (2013). A way with words: Feminists writing architectural design research.

Design research in architecture: An overview. In M. Fraser (Ed.) (pp. 117e136). London: Ashgate.

## **Learning objectives/aims and competencies**

- Provide Insights into broader historical developments
- Methodological introduction to topics of architectural history in context to arts and design
- Overview of presentation techniques

## **Units**

1 History of Architecture 2

2 Media / Architectural presentation 2

## **Teaching and learning methods and formats**

- Lectures
- Workshop

## **Envisaged practical skills**

- Ability to choose suitable technique for representation of own designs

## **Envisaged theoretical and reflective skills**

- Ability to understand historical impact on architectural design

## **Envisaged scientific skills**

- Understanding of methods applied for historical research
- Ability to write about architectural design

## **Course conclusion and proof of performance**

Presentation

## Unit 1: History of Architecture 2

(code: BA AR 5.1)

### Profile of lecturer(s)

- Expert in theory and history of architecture and broader cultural context
- Familiar with the development of architectural representation techniques throughout history
- Interdisciplinary Research & Theory background

### Content

- Students will become familiar with architectural and urban design solutions and their historical, societal and technological backgrounds
- Insights into broader historical developments and the relationship between societies and technology
- This seminar offers views on both Western and Non-Western approaches to design
- Methodological introduction to topics of architectural history in context to arts and design
- Introduction to critical thinking and reflection about texts related to architecture

### Teaching and learning methods and formats

- Lectures & Inputs
- Guest lectures
- Mentoring
- Desk based research and field studies

### Learning objectives/aims and competencies

- Introduction into topics of architectural history
- Analysing architecture and objects
- Discussion of texts
- Management and communication skills
- Negotiating ideas in group work
- Research capabilities
- Recognition of diversity and multiculturalism
- Ability to analyse and synthesize
- Ability to be critical and self-critical
- Ability to adapt to new situations

- Continuation of the application of scientific working methods

### **Unit conclusion and proof of performance**

-Written exam

-Presentation of paper

**-Oral contribution to discussion**

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

Laptop

### **References and web links**

Will be provided

## Unit 2: Media / Architectural presentation 2

(code: BA AR 5.2)

### Profile of lecturer(s)

- Senior 3D Artist, preferably with architectural background and competition experience
- Art Director with Expertise in Campaigning and Storytelling in contemporary media
- Expert in state-of-the-art industrial standards in 3D and 4D Visualization
- Familiar with History & Theory of Digital Arts and Representation
- Outstanding Ability and Interest of incorporating and including new technologies

### Content

- Architectural Representation 2
- Architectural Visualization and digital Workflows (Rhino, Vray, Photoshop)
- Contextual Photogrammetry, LiDAR Data and 3D Modelling
- Digital Space
- History and architectural use of VR
- 360° narratives and storyboards
- Creating and editing of VR applications (Unity)

### Teaching and learning methods and formats

- Lectures
- Workshops
- Project
- Desk Crits

### Learning objectives/aims and competencies

- Become familiar with contemporary architectural visualization and workflows in 2D, 3D and 360°
- Formulate and apply a coherent representational strategy
- Create immersive digital representations of architectural projects and ideas .

### Unit conclusion and proof of performance

- Full attendance
- Final project presentation



-Documentation

## **Bibliography / literature**

Will be provided

## **Necessary infrastructure and equipment**

- Rendering workstation
- Render farm / render cluster
- Laser cameras and scanners
- VR headset
- Virtual reality space
- Rhinoceros
- V-Ray
- Adobe Package
- Photogrammetry Software
- Unity
- Laptop

## **References and web links**

Sites dedicated to architectural Visualization:

<http://www.cgarchitect.com/>

<https://www.ronenbekerman.com/>

<https://visualizingarchitecture.com/>

<https://flyingarchitecture.com/>

Video Tutorials:

V-Ray for Rhino — Webinar: Project from Start to Finish:

<https://www.youtube.com/watch?v=0uGEOtgaEug>

V-Ray for Rhino – Quick Start: Intro for Architects:

<https://www.youtube.com/watch?v=fRWANWkTouY>

V-Ray for Rhino – Quick Start: Interior Lighting:

<https://www.youtube.com/watch?v=k1c0Sy0UyqQ&t>

V-Ray for Rhino – Quick Start: Exterior Lighting:

<https://www.youtube.com/watch?v=EkK5FhEwcAU&t>

<https://www.textures.com/>

<https://3dwarehouse.sketchup.com/>

<https://3dsky.org/>

# 建筑文化 II

课程代码: SDAT2007

课程名: 建筑文化 II

学分: 欧方 4 学分 中方 2 学分

开设专业: 建筑学

先修课程: 建筑文化 I

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程旨在使学生通过学习了解建筑发展过程中有关建筑历史、与建筑媒体展示的相关知识。在建筑历史方面,学习国内外建筑历史的初步发展脉络,了解外在文化、政治、经济等因素对于建筑的冲击与影响,阐释建筑的历史价值、文化价值与审美价值。在建筑媒体展示方面,通过结合二维、三维和 360°全景的建筑可视化等新的工作流程,使学生对建筑有更深入了解,并更好地实现概念表达。

## 主要参考教材

- 《中国近代建筑总览》的各城市篇
- 《哈尔滨近代建筑的现代转型与模式探析》(刘松茯)
- 《向拉斯维加斯学习》(文丘里)
- 《场所精神—迈向建筑现象学》(诺伯舒兹)
- 《现代建筑——一部批判的历史》(弗兰姆普敦)

## 参考文献

- Frayling, C. (1993). Research in art and design. Royal College of Art Papers, 1(1), 1e5.
- Friedman, K. (2000). Creating design knowledge: From research into practice. IDATER. Loughborough University.
- Blythe, R., & Schaik, L. (2013). What if design practice matters? Design research in architecture: An overview. In M. Fraser (Ed.). London: Ashgate
- Hillier, B., & Leaman, A. (1976). Architecture as a discipline. Journal of Architectural Research 28e32.
- Rendell, J. (2013). A way with words: Feminists writing architectural design research. Design research in architecture: An overview. In M. Fraser (Ed.) . London: Ashgate.

## 课程培养目标与能力

- 深入了解更广泛的历史发展。
- 方法论上介绍艺术和设计背景下的建筑史主题。
- 演示技巧概述。

## 单元

- 1 建筑史 2
- 2 媒体/建筑展示 2

## 教学模式与方法

- 讲座
- 工作坊

## 目标实践技能

- 能够选择合适的技术来表现自己的设计

## 目标理论与思维能力

- 能够理解历史对建筑设计的影响

## 目标科学技能

- 了解用于历史研究的方法。
- 能够撰写建筑设计方面的文章。

## 考核方式

汇报。

## 单元 1 建筑历史 2

(单元编号: BA AR 5.1)

### 师资配备

- 精通建筑的理论和历史，以及更广泛的文化背景
- 熟悉整个历史上的建筑表示技术的发展
- 跨学科研究与理论背景

### 内容

- 学生们将会熟悉建筑和城市设计的解决方案，以及它们的历史、社会和技术背景
- 洞察更广泛的历史发展以及社会和技术之间的关系
- 本研讨会提供了关于西方和非西方设计方法的观点
- 在艺术和设计的背景下，建筑历史主题方法论的介绍
- 介绍对与建筑相关的文本的批判性思考和反思

### 教学模式

- 讲座和理论灌输
- 客座讲座
- 指导
- 案头研究和实地研究

### 学习目标和能力培养

- 建筑史专题介绍
- 分析架构和对象
- 文本讨论
- 管理和沟通技巧
- 在小组工作中的协商能力
- 研究能力
- 对多样性和多元文化主义的认识
- 分析和整合的能力
- 具有批判性和自我批判性的能力
- 适应新情况的能力
- 科学工作方法的继续应用

### **单元总结和考核方式**

- 笔试
- 论文展示
- 口头讨论的参与度

### **参考书目/文献**

待定

### **必要的基础设施和设备**

- 笔记本电脑

### **参考资料和网页链接**

待定

## 单元 2 媒体/建筑演示 2

(单元编号: BA AR 5.2)

### 师资配备

- 高级 3D 艺术家，有建筑背景和竞赛经验者优先
- 擅长于当代媒体宣传活动和故事叙述的艺术总监
- 精通最先进的三维和四维可视化工业标准
- 熟悉数字艺术和表现的历史与理论
- 具有整合和涉猎新技术的杰出能力和兴趣

### 内容

#### 建筑表现 2

- 建筑可视化和数字工作流程 (Rhino、Vray、Photoshop)
- 摄影测量，激光雷达数据和三维建模

#### 数字空间

- VR 的历史和建筑使用
- 360°叙事和脚本
- 创建和编辑 VR 应用程序(Unity)

### 教学模式

- 讲座
- 研讨会
- 项目
- 设计评图

### 学习目标和能力培养

- 熟悉二维、三维和 360°中的当代建筑可视化和工作流程
- 制定和应用连贯的代表性策略
- 为建筑项目和想法创建沉浸式数字表示

### 单元总结和考核方式

- 课堂出勤
- 项目的最终展示
- 文件记录

## 参考书目/文献

待定

## 必要的基础设施和设备

- 渲染工作站
- 渲染场/渲染集群
- 激光相机和扫描仪
- VR 耳机
- 虚拟现实空间
- Rhinoceros
- V-Ray
- Adobe Package
- 摄量软件
- Unity
- 笔记本电脑

## 参考资料和网页链接

待定



# Building Technologies II

**Course Code:** SDAT2008

**Course Name:** Building Technologies II

**Credit points:** ECTS: 6 Chinese: 4

**Subjects related:** Architecture

**Pre-requirement for the Course:** Building Technologies I

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

The course mainly teaches the basic knowledge of building technology theory, including a series of contents such as building structure, materials, performance, relationship between building and environment and biological design. At the same time, it introduces the architectural design standards and typical cases in national and typical climate areas. The purpose of the course is to enable students to understand the development overview and latest progress related to architectural technology, master relevant basic knowledge and basic theories, and correctly use the knowledge learned to carry out reasonable design for different buildings.

## Main teaching materials

Building Physics

Energy saving building design and technology

Complete collection of current architectural design codes

## Reference

Lawson, B., & Loke, S. M. (1997). Computers, words and pictures. *Design Studies*, 18(2), 171e183.

Lloyd, P. (2003). Designing in context. *Design Studies*, 24(3), 195e197.

## Learning objectives/aims and competencies

- Deepening of understanding of technical aspects of architectural design
- Understanding of influence of basic principles of physics for architectural design

## **Units**

1 Building Construction 2

2 Structural Systems 2

3 Ecology 2

## **Teaching and learning methods and formats**

- Lectures
- Workshop

## **Envisaged practical skills**

- Ability to incorporate technical aspects into design concept
- Application of theoretical knowledge for architectural design

## **Envisaged theoretical and reflective skills**

- Ability to reflect on suitability of technical solutions

## **Envisaged scientific skills**

- Understanding design as a scientific and artistic discipline
- Exploring design solutions by using creative and scientific methods
- Scrutinise and collate information from a variety of sources
- Understanding scientific results and reports

## **Course conclusion and proof of performance**

Project presentation

## Unit 1: Building Construction 2

(code: BA AR 6.1)

### Profile of lecturer(s)

- Practising architect with practical experience of execution phases
- Familiar with application of Digital and Parametric Architecture

### Content

- Computational design and construction methods for buildings
- Parameters of building construction related to structural design
- material properties,
- manufacturing techniques and digital options
- joining technologies,
- construction principles and load-bearing behaviour.
- Learning about performative aspects of material systems
- technical and legal requirements and construction methods for the design of buildings

### Teaching and learning methods and formats

- Lectures & Guest lectures,
- Field studies,
- Prototyping, Testing

### Learning objectives/aims and competencies

- Understanding different construction using different materials like brick, steel, concrete, plastics and textiles
- Architectural notation related to material and structural systems
- Application of theoretical knowledge for architectural design

### Unit conclusion and proof of performance

–Full attendance

–In class assignments

## **–Documentation of small design exercises**

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

- Digital simulation software and model making equipment
- Workshop space for practical demonstration of material systems
- Laptop

### **References and web links**

Will be provided

## Unit 2: Structural Systems 2

(code: BA AR 6.2)

### Profile of lecturer(s)

Structural Engineer with architectural knowledge experienced in integral design solutions on many scales and typologies and various materials

### Content

- Structural systems and corresponding structural performance
- Lectures on topics such as basics and concepts, effects, equilibrium, support forces, cutting forces, single-field and multi-field beams, building stiffening, stress determination, strength theory, design, stability, trusses, rope structures, arch structures, frame structures

### Teaching and learning methods and formats

- Lectures & Guest lectures,
- Field studies, visits to existing buildings

### Learning objectives/aims and competencies

- Basics of structural engineering, overview of common flat and spatial support systems,
- Reduction of complex load-bearing systems to simple static models,
- Understanding of the load-path and deformation behaviour of load-bearing structures,
- Determination of internal forces and approximate design
- Calculation and dimensioning of simple examples in the exercises
- Focus on perception and practical application across materials

### Unit conclusion and proof of performance

- Full attendance
- In class assignments

## **-Documentation of small design exercises**

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

- Digital simulation software and model making equipment
- Workshop space for practical demonstration of material systems
- Laptop

### **References and web links**

Will be provided

## Unit 3: Ecology 2

(code: BA AR 6.3)

### Profile of lecturer(s)

- Understanding of Permaculture
- Experts in environmental practises and ecology
- Experts in social sciences and architecture
- Familiar with application of Ecological, zero carbon, self-sufficient, passive Architecture
- Interdisciplinary Research & Theory background

### Content

- Deeper understanding of ecological principles
- Holistic thinking, i.e., the principles of permaculture
- Natural systems / Regenerative systems
- Different architectural solutions to restore nature and environment will be studied in order to understand their possibilities and limitations
- Natural systems / Regenerative systems
- Introduction to sustainability principles
- Cradle to Cradle principles
- Sustainability and construction

### Teaching and learning methods and formats

- Lectures & Inputs, Guest lectures,
- Mentoring
- Desk based research,
- Field studies

### Learning objectives/aims and competencies

- Exploring architectural solutions based on an understanding of ecosystems
- Ability to produce Informed Design and building processes following environmental and biological data
- Understand Humans as part of the natural ecosystem
- Combine architectural design with living systems and biology integration
- Understanding the impact of architecture onto the environment
- Humans as part of the natural ecosystem

- Biophilic design

### **Unit conclusion and proof of performance**

- Full attendance
- In class assignments
- Documentation of course work

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

- Library access
- Laptop

### **References and web links**

Will be provided



# 建筑技术 II

课程代码: SDAT2008

课程名: 建筑技术 II

学分: 欧方 6 学分 中方 4 学分

开设专业: 建筑学

先修课程: 建筑技术 I

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程主要讲授有关建筑技术理论的基础知识, 包括建筑结构、材料、建筑性能、建筑与环境关系以及亲生物设计等一系列内容。在此基础之上, 课程介绍不同国家与典型气候区的建筑设计标准与典型案例。课程的目的是使学生了解到建筑技术相关的发展概况与最新进展, 掌握相关基础知识与基本理论, 并能正确运用所学知识, 在此基础之上针对不同建筑进行合理设计。

## 主要参考教材

《建筑物理》(柳孝图)

《节能建筑设计和技术》(宋德萱)

《现行建筑设计规范大全》

## 参考文献

Lawson, B., & Loke, S. M. (1997). Computers, words and pictures. *Design Studies*, 18(2), 171e183.

Lloyd, P. (2003). Designing in context. *Design Studies*, 24(3), 195e197.

## 课程培养目标与能力

- 深化对建筑设计技术方面的理解
- 了解物理基本原理对建筑设计的影响

## 单元

- 1 建筑施工 2
- 2 结构系统 2
- 3 生态学 2

## 教学模式与方法

- 讲座
- 工作坊

## 目标实践技能

- 将技术方面融入设计概念的能力
- 理论知识在建筑设计中的应用

## 目标理论与思维能力

- 能够思考技术解决方案的适当性

## 目标科学技能

- 将设计理解为一门科学性、艺术性的学科
- 利用创造性和科学的方法探索设计解决方案
- 仔细检查和整理各种信息的来源
- 了解科学成果和报告

## 考核方式

项目展示

## 单元 1 建筑施工 2

(单元编号: BA AR 6.1)

### 师资配备

具有施工阶段实践经验的执业建筑师;  
熟悉数字和参数化架构的应用

### 内容

- 建筑的计算设计及施工方法
- 与结构设计相关的建筑施工参数
- 物料性质
- 制造技术和数字选择
- 连接技术
- 施工原理和承载性能
- 学习物质系统的表现方面
- 建筑设计的技术、法律要求和施工方法

### 教学模式

- 讲座和客座讲座
- 实地研究
- 原型、测试

### 学习目标和能力培养

- 了解不同的结构, 使用不同的材料, 如砖、钢、混凝土、装饰材料和纺织品
- 与材料和结构系统有关的建筑符号
- 建筑设计理论知识的应用

### 单元总结和考核方式

- 课堂出勤
- 课堂任务
- 小型设计练习的文件记录

### 参考书目/文献

待定

### **必要的基础设施和设备**

- 数字仿真软件及模型制作设备
- 材料系统实际演示的工作坊空间
- 笔记本电脑

### **参考资料和网页链接**

待定

## 单元 2 结构系统 2

(单元编号: BA AR 6.2)

### 师资配备

在多种规模、类型和各种材料的整体设计解决方案方面, 有丰富建筑经验的结构工程师

### 内容

- 结构系统及相应的结构性能
- 讲座的主题包括基础和概念、效果、平衡、支撑力、切割力、单场和多场梁、建筑加筋、应力确定、强度理论、设计、稳定性、桁架、绳索结构、拱形结构、框架结构

### 教学模式

- 讲座及客座讲座
- 实地研究, 参观现有建筑

### 学习目标和能力培养

- 结构工程基础知识, 普通平面和空间支撑系统概述
- 将复杂的承载系统简化为简单的静态模型
- 了解承重结构的载荷路径和变形行为
- 内力的确定和近似设计
- 练习中简单示例的计算和尺寸确定
- 关注跨材料的感知和实际应用

### 单元总结和考核方式

- 课堂出勤
- 课堂任务
- 小型设计练习的文件记录

### 参考书目/文献

待定

### 必要的基础设施和设备

- 数字仿真软件及模型制作设备
- 材料系统实际演示的工作坊空间

- 笔记本电脑

## 参考资料和网页链接

待定

## 单元 3 生态学 2

(单元编号: BA AR 6.3)

### 师资配备

- 对朴门永续设计理念的理解
- 环境实践和生态学方面的专家
- 社会科学和建筑学专家
- 熟悉生态学、零碳、自给自足、被动式建筑的应用
- 跨学科的研究与理论背景

### 内容

- 更深入地了解生态学原理
- 整体思维，即朴门永续设计的原则
- 自然系统/再生系统
- 我们将研究恢复自然和环境的不同建筑解决方案，以了解它们的可能性和局限性
- 自然系统/再生系统
- 可持续性原则介绍
- 从摇篮到摇篮的则
- 可持续发展和建设

### 教学模式

- 讲座与理论灌输，客座讲座
- 指导
- 案头研究
- 实地研究

### 学习目标和能力培养

- 基于对生态系统的理解，探索架构解决方案
- 能够根据环境和生物数据产生知情设计和建筑过程
- 理解人类作为自然生态系统的一部分
- 将建筑设计与生命系统和生物集成相结合
- 了解体系结构对环境的影响
- 人类是自然生态系统的一部分
- 亲生物设计

### **单元总结和考核方式**

- 课堂考勤
- 课堂任务
- 课堂作业的文件记录

### **参考书目/文献**

待定

### **必要的基础设施和设备**

- 图书馆资源
- 笔记本电脑

### **参考资料和网页链接**

待定



# Studio Living

**Course Code:** SDAT3001

**Course Name:** Studio Living

**Credit points:** ECTS:7 Chinese: 5

**Subjects related:** Architecture

**Pre-requirement for the Course:** Foundation course

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

The course aims to cultivate students' in-depth understanding of residential system design related to daily living through teaching, and deepen their conception ability and expression ability on the basis of mastering the basic theories and skills of residential projects. The course requires students to put forward the scheme design to meet the design requirements through in-depth investigation and analysis, combined with new design concepts and means, and complete the results through various expression methods such as models and drawings. By organizing special lectures, seminars and project sharing, the classroom guides students to participate in interactive discussions, improves students' subjective initiative, and completes the design scheme independently.

## Main teaching materials

Residence Architecture Design

Urban Design as Public Policy

Introduction to Urban Design

## Reference

Luck, R. (2018). Participatory design in architectural practice: Changing practices in future making in uncertain times. *Design Studies*, 58, 139e157.

Megahed, Y. (2017). On research by design. *Arq: Architectural Research Quarterly*, 21(4), 338e343.

Rendell, J. (2004). Architectural research and disciplinarity. *Arq: Architectural Research*

Quarterly, 8(2), 141e147.

### **Learning objectives/aims and competencies**

- Overview of systems for housing
- Understanding the Socio-cultural context of buildings for living
- Understanding the impact of regulations, climate and culture
- Understanding the historical development of architecture related to living

### **Units**

1 Research Living

2 Design Project Sustainable Living

### **Teaching and learning methods and formats**

- Lecture
- Individual design project

### **Envisaged practical skills**

- Design skills for larger project with multiple units

### **Envisaged theoretical and reflective skills**

- Ability to understand project in broader context
- Understanding of social, ecological
- Economical influences on the design of structures for living

### **Envisaged scientific skills**

- Ability to formulate concept for project
- Reflection on larger context of design project

### **Course conclusion and proof of performance**

Project presentation

## **Unit 1: Research Living**

(code: BA AR 7.1)

### **Profile of lecturer(s)**

- Architect with experience in housing and sustainable construction
- Familiar with application of Ecological, zero carbon, self-sufficient, passive Architecture

### **Content**

- History of housing
- Urban dimension of housing systems
- Housing typologies and circulation
- Quality and user expectations
- Changes based on social-economic and cultural developments
- Rules and regulations relevant for housing
- Aspects of climate and culture
- living standard and change in quality expectations,
- architectural solutions in residential construction,
- socio-political components, paradigm shift through social change

### **Teaching and learning methods and formats**

- Lectures & Guest lectures,
- Desk based research
- Field studies,

### **Learning objectives/aims and competencies**

- Understanding the context
- Understanding the factors influencing the design of housing projects
- Ability to research relevant information

### **Unit conclusion and proof of performance**

In class assignments

Presentation

## **Bibliography / literature**

Will be provided

## **Necessary infrastructure and equipment**

Access to library

Access to online data bank

Laptop

## **References and web links**

Will be provided

## Unit 2: Design Project Sustainable Living

(code: BA AR 7.2)

### Profile of lecturer(s)

Architect with experience in housing and sustainable construction.

Familiar with application of Ecological, zero carbon, self-sufficient, passive Architecture

### Content

- Using relevant design processes
- Transferring research results into theory
- Transferring theory into concepts
- Understand the Urban dimension of housing systems
- Selection of Housing typologies and circulation
- Typology adequate for quality and user expectations
- Design solution based on social-economic and cultural developments
- Integration of Rules and regulations relevant for housing
- Integration of Aspects of climate and culture
- Exploration of ecological and sustainable building solutions
- Inclusive architectural proposals for living

### Teaching and learning methods and formats

- -Lectures & Guest lectures,
- -Mentoring
- -field studies,
- -Prototyping, Testing

### Learning objectives/aims and competencies

- -Develop novel living architectural design solutions
- -ability to choose adequate systems for housing
- -Understanding the influence of Socio-cultural context for the design of buildings for living
- -Ability to explore ecological and sustainable building solutions
- -ability to reflect the impact of regulations, climate and culture in design project
- -understanding the historical development of architecture related to living

## **Unit conclusion and proof of performance**

–Full attendance

–Presentations: Mid-term and Final

## **–Documentation**

## **Bibliography / literature**

Will be provided

## **Necessary infrastructure and equipment**

- Student work space
- Laptop

## **References and web links**

Will be provided

# 工作坊：生活

课程代码: SDAT3001

课程名: 工作坊：生活

学分: 欧方 7 学分 中方 5 学分

开设专业: 建筑学

先修课程: 基础课

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程旨在通过教学培养学生对于日常居住相关的住宅系统设计的深入认识，在掌握住宅类项目基本理论与技能的基础上，深化构思能力与表达能力。课程要求学生通过深入调查分析，结合新的设计理念与手段，提出适应设计要求的方案设计，并通过模型、图纸等多种表达方式完成成果。教师通过组织专题讲座、研讨会与项目分享等，引导学生参与互动讨论，提升学生的主观能动性，并独立完成设计方案。

## 主要参考教材

《住宅建筑设计》(刘文军, 付瑶)

《Urban Design as Public Policy》(Jonathan Barnett)

《Introduction to Urban Design》(Jonathan Barnett)

## 参考文献

Luck, R. (2018). Participatory design in architectural practice: Changing practices in future making in uncertain times. *Design Studies*, 58, 139e157.

Megahed, Y. (2017). On research by design. *Arq: Architectural Research Quarterly*, 21(4), 338e343.

Rendell, J. (2004). Architectural research and disciplinarity. *Arq: Architectural Research Quarterly*, 8(2), 141e147.

## 课程培养目标与能力

- 住房制度概述
- 了解居住建筑的社会文化背景
- 了解法规、气候和文化的影响
- 了解与生活相关的建筑历史发展

## 单元

- 1 人居研究
- 2 设计工作坊：可持续生活

## 教学模式与方法

- 讲座
- 个人设计项目

## 目标实践技能

- 具有多学科的大型项目的设计技能

## 目标理论与思维能力

- 具有更广泛的背景下理解项目的能力
- 了解社会、生态和经济对生活结构设计的影响

## 目标科学技能

- 制定项目概念的能力
- 对设计项目更大背景的反思

## 考核方式

项目展示



## 单元 1 人居研究

(单元编号: BA AR 7.1)

### 师资配备

有住房和可持续建筑经验的建筑师。

熟悉生态型、零碳、自给自足、被动式建筑的应用

### 内容

- 住房历史
- 住房系统的城市维度
- 房屋类型和流通情况
- 质量和用户期望
- 基于社会经济和文化发展的变化
- 与住房相关的规章制度
- 气候和文化方面
- 生活水平和质量期望的变化,
- 住宅建筑中的建筑解决方案,
- 社会政治成分, 通过社会变革而发生的范式转变

### 教学模式

- 讲座及客座讲座
- 案头研究
- 实地研究

### 学习目标和能力培养

- 了解影响住宅项目设计的背景和因素
- 研究相关信息的能力

### 单元总结和考核方式

- 课堂任务
- 汇报

### 参考书目/文献

待定

## 必要的基础设施和设备

- 图书馆资源
- 线上数据库
- 笔记本电脑

## 参考资料和网页链接

待定

## 单元 2 设计工作坊：可持续生活

(单元编号: BA AR 7.2)

### 师资配备

有住房和可持续建筑经验的建筑师。

熟悉生态型、零碳、自给自足、被动式建筑的应用

### 内容

- 使用相关设计流程
- 将研究成果转化为理论
- 将理论转化为概念
- 了解住房系统的城市维度
- 住房类型和流通方式的选择
- 类型学保证质量和用户的期望
- 基于社会经济和文化发展的设计解决方案
- 住房相关规章制度的整合
- 气候和文化各方面的整合
- 探索生态和可持续发展的建筑解决方案
- 关于生活的建筑方案

### 教学模式

- -讲座和客座讲座,
- -指导
- -实地研究,
- -原型、测试

### 学习目标和能力培养

- -开发新颖的生活建筑设计解决方案
- -能够选择合适的住房系统
- -了解社会文化背景对生活建筑设计的影响
- -能够探索生态和可持续的建筑解决方案
- -能够在设计项目中反映法规、气候和文化的影响
- -了解与生活相关的建筑的历史发展

### **单元总结和考核方式**

- 课堂出勤
- 期中及期末汇报展示
- 文档记录

### **参考书目/文献**

待定

### **必要的基础设施和设备**

- 学生工作空间
- 笔记本电脑

### **参考资料和网页链接**

待定

# Architecture Culture III

**Course Code:** SDAT3002

**Course Name:** Architecture Culture III

**Credit points:** ECTS:6 Chinese: 4

**Subjects related:** Architecture

**Pre-requirement for the Course:** Architecture Culture II

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

The course aims to enhance students' understanding and reflection on the theory, aesthetics, art, politics, culture and other issues related to architecture through teaching, and make a historical critical analysis of architectural concepts. At the same time, combined with computer technology and typological research theories and methods related to architectural functional requirements, spatial organization and form, form an overall understanding of architectural theory, design and application at the macro level. By organizing lectures and workshops, teachers guide students to conduct independent thinking and research practice, and cultivate students' comprehensive quality.

## Main teaching materials

Studies in Tectonic Culture

The Death and Life of Great American Cities

Geschichte Der Architekturtheorie

The Beginning of Design

Complexity and Contradiction in Architecture

## Reference

Weinstock, M. (2008). Can architectural design be research? *AD Architectural Design*, 78(3), 112e115.

Zimmerman, J., Forlizzi, J., & Evenson, S. (2007). Research through design as a method for interaction design. In *Conf. on Human Factors in Computing Systems*. ACM.

Lawson, B. (2004). *What designers know*. Oxford: Architectural Press. Lawson, B., & Loke, S. M. (1997). Computers, words and pictures. *Design Studies*, 18(2), 171e183.

## **Learning objectives/aims and competencies**

- Provide Insights into broader theoretical background
- Overview of computational techniques

## **Units**

- 1 Architecture Theory I
- 2 Digital Design and Digital Production I
- 3 Building Typology I

## **Teaching and learning methods and formats**

- Lectures
- Workshop

## **Envisaged practical skills**

- Ability to choose suitable technique for representation of own designs including computational techniques

## **Envisaged theoretical and reflective skills**

- Ability to understand impact of theoretical reflections on architectural design in more depth

## **Envisaged scientific skills**

- Understanding of methods of typological classification of buildings

## **Course conclusion and proof of performance**

Test

# Unit 1: Architecture Theory I

(code: BA AR 8.1)

## Profile of lecturer(s)

- -Experts in theory and history of architecture
- -Experts in social sciences and architecture

## Content

- Deepening of understanding of theoretical questions based on correlation of theoretical, aesthetical, artistic, political and cultural issues
- Current questions of architectural discourse are addressed. Each semester, a specific topic is focused
- Introduction of the theoretical discipline of aesthetics to arrange experiences and observations in an overview, to make architectural concepts describable and understand-able on the basis of current theories and on the basis of examples of all media artistic productions.

## Teaching and learning methods and formats

- Lectures & Inputs, guest lectures,
- Mentoring
- Desk based research,
- field studies,

## Learning objectives/aims and competencies

- Systematic study of theoretical subjects
- Scientific work
- Practice of critical thinking and the ability of linguistic articulation
- Acquisition of discussion and debating skills
- Ability to analyse and synthesize
- Ability to generate new ideas (creativity)
- Ability to be critical and self-critical
- Articulation of thoughts, discussing architectural concepts
- Research capabilities
- Reflection about historical topics
- Different methods of analysing architecture

- Verbal and written discussions about architectural problems
- Historical critical analysis of architectural concepts

### **Unit conclusion and proof of performance**

Test and written essay

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

Access to Library and digital archives

Laptop

### **References and web links**

Will be provided



## Unit 2: Digital Design and Digital Production I

(code: BA AR 8.2)

### Profile of lecturer(s)

- Experts in Computational Design (parametric, algorithmic software)
- Familiar with theory & history on digital design and manufacturing
- Knowledge of CAD software and working flows.

### Content

- Difference between computerisation and computation
- Overview of computational techniques
- Overview of software packages and their possibilities
- Introduction to the digital process chain
- Digital design methodologies: While using computational tools, students gain knowledge on how to design based on concepts and typologies of structural optimisation.
- Implementation of a digital process chain
- Combination of various techniques into a circular design process
- Knowledge about various Simulation tools

### Teaching and learning methods and formats

- Lectures & Inputs,
- Mentoring
- Prototyping, Testing

### Learning objectives/aims and competencies

- Exploring architectural solutions by using creative and scientific methods
- application of understanding of digital methods for the design process
- application of understanding the use of digital tools for the construction process of a scale model
- Combine architectural design with computational design and computer science
- Ability to produce Informed Design and building processes following material, environmental and structural data

## **Unit conclusion and proof of performance**

- Full attendance
- Documentation of in class assignments
- Presentation

## **Bibliography / literature**

Will be provided

## **Necessary infrastructure and equipment**

Access to Fab Lab

- 3d printer
- Laser cutter for different materials
- CNC milling for wood

Access to Robot Lab

- 2d exercises using robot arms
- 3d styro-cutting using robot arms
- 3d printing using robots

## **References and web links**

Will be provided

## Unit 3: Building Typology I

(code: BA AR 8.3)

### Profile of lecturer(s)

- Practising architects with knowledge about different building typologies,
- Experts in theory of building typology

### Content

- Correlation of complex building requirements and spatial organisation, building form and type
- Introduction to relevant topics for typology:
- Spatial organisation,
- Circulation,
- Lighting,
- Functionality,
- Material and appearance
  - typologically comparative thinking
  - sharpening the design approach
  - The first part of the course is related to small and middle-sized building types

### Teaching and learning methods and formats

- –Lectures & Inputs, guest lectures,
- –mentoring
- –Desk based research,
- –field studies,

### Learning objectives/aims and competencies

- Exploring architectural solutions by using creative and scientific methods
- Introduction to building theory topics
- design of more complex building typologies in an extended context
- application in analysis and design exercises
- articulation in presentation formats
- Produce models and prototypes of building elements

## **Unit conclusion and proof of performance**

- Full attendance
- In class assignments
- Documentation of course work

## **Bibliography / literature**

Will be provided

## **Necessary infrastructure and equipment**

- Model workshop
- Laptop

## **References and web links**

Will be provided

# 建筑文化 III

课程代码: SDAT3002

课程名: 建筑文化 III

学分: 欧方 6 学分 中方 4 学分

开设专业: 建筑学

先修课程: 建筑文化 II

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程旨在通过教学提升学生对于建筑相关的理论、美学、艺术、政治、文化等问题的理解与反思,对建筑概念进行历史批判性分析。同时,结合计算机技术,以及涉及建筑功能需求、空间组织与形式等方面的类型学研究理论与方法,形成对于宏观层面建筑理论、设计与应用的整体认识。教师通过组织讲座、工作坊等方式,引导学生进行独立思考与研究实践,培养学生综合素质。

## 主要参考教材

- 《建构文化研究》(肯尼思·弗兰姆普敦)
- 《美国大城市的死与生》(简·雅各布斯)
- 《建筑理论史——从维特鲁威到现在》(克鲁夫特)
- 《设计的开始》(王澍)
- 《建筑的复杂性与矛盾性》(文丘里)

## 参考文献

- Weinstock, M. (2008). Can architectural design be research? *AD Architectural Design*, 78(3), 112e115.
- Zimmerman, J., Forlizzi, J., & Evenson, S. (2007). Research through design as a method for interaction design. In *Conf. on Human Factors in Computing Systems*. ACM.
- Lawson, B. (2004). *What designers know*. Oxford: Architectural Press.
- Lawson, B., & Loke, S. M. (1997). Computers, words and pictures. *Design Studies*, 18(2), 171e183.

## 课程培养目标与能力

- 深入了解更广泛的理论背景
- 计算机技能概述

## 单元

- 1 建筑理论 I
- 2 数字设计与数字制作 I
- 3 建筑类型学 I

## 教学模式与方法

- 讲座
- 工作坊

## 目标实践技能

- 能够选择合适的技术来表现自己的设计

## 目标理论与思维能力

- 能够理解历史对建筑设计的影响

## 目标科学技能

- 了解用于历史研究的方法
- 能够撰写建筑设计方面的文章

## 考核方式

汇报

## 单元 1 建筑理论 I

(单元编号: BA AR 8.1)

### 师资配备

- 建筑理论和历史方面的专家
- 社会科学和建筑学专家

### 内容

- 深化基于理论、美学、艺术、政治、文化问题相关性的理论问题理解
- 讨论了当前建筑话语的问题。每个学期，都有一个特定集中讨论的主题
- 引入美学的理论学科，将经验和观察安排在同一概述中，使建筑概念在当前的理论和所有媒体艺术作品例子的基础上，更易于描述和理解。

### 教学模式

- 讲座与理论灌输，客座讲座
- 指导
- 案头研究，
- 实地研究

### 学习目标和能力培养

- 理论学科的系统研究
- 科学工作
- 批判性思维的实践与语言表达的能力
- 获得讨论和辩论的技巧
- 有分析和综合的能力
- 产生新想法的能力（创造力）
- 具有批判性和自我批判性的能力
- 表达思想，讨论建筑学的概念
- 研究能力
- 对历史话题的反思
- 分析建筑的不同方法
- 关于建筑问题的口头讨论和书面讨论
- 建筑概念的历史批判性分析

### **单元总结和考核方式**

- 测试
- 论文

### **参考书目/文献**

待定

### **必要的基础设施和设备**

- 图书馆及数码资源
- 笔记本电脑

### **参考资料和网页链接**

待定



## 单元 2 数字设计与生产 I

(单元编号: BA AR 8.2)

### 师资配备

- 计算设计专家（参数化、算法软件）
- 熟悉数字设计和制造的历史和理论
- 了解 CAD 软件和工作流程。

### 内容

- 计算机化和计算的区别
- 计算技术概述
- 软件包及其可能性的概述
- 数字过程链的介绍
- 数字设计方法：在使用计算工具时，学生们获得了如何基于结构优化的概念和类型学进行设计的知识。
- 数字过程链的实现
- 将各种技术组合成一个循环的设计过程
- 了解各种仿真工具

### 教学模式

- 讲座和理论灌输，
- 指导
- 原型、测试

### 学习目标和能力培养

- 通过使用创造性和科学的方法来探索建筑解决方案
- 在设计过程中应用对数字方法的理解
- 理解数字工具在比例模型构建过程中的应用
- 结合建筑设计、计算设计和计算机科学
- 能够根据材料、环境和结构数据产生知情设计和建筑过程

### 单元总结和考核方式

- 课堂出勤
- 课堂任务的文件记录
- 展示

## 参考书目/文献

待定

## 必要的基础设施和设备

- 访问制造实验室
- 3D 打印机
- 不同材料的激光切割器
- 木材数控铣削
- 进入机器人实验室
- 使用机器人手臂的 2D 练习
- 使用机器人手臂进行三维机器人切割
- 使用机器人进行三维打印

## 参考资料和网页链接

待定

## 单元 3 建筑类型学 I

(单元编号: BA AR 8.3)

### 师资配备

- 实践了解不同建筑类型的建筑师,
- 建筑类型学理论方面的专家

### 内容

- 复杂的建筑需求与空间组织、建筑形式和类型的相关性
- 类型学的相关主题简介
- 空间组织
- 流线
- 照明
- 功能
- 材料和外观
- 类型学上的比较思维
- 锐化设计方法
- 本课程的第一部分与中小型建筑类型有关

### 教学模式

- 讲座与理论灌输, 客座讲座,
- 指导
- 案头研究
- 实地研究

### 学习目标和能力培养

- 通过使用创造性和科学的方法来探索建筑解决方案
- 建筑理论主题简介
- 在一个扩展的上下文中设计更复杂的建筑类型
- 在分析和设计练习中的应用
- 展示形式的表达
- 生成建筑元素的模型和原型

### 单元总结和考核方式

- 课堂出勤

- 课堂任务
- 课堂任务的文件记录

### **参考书目/文献**

待定

### **必要的基础设施和设备**

- 模型工作坊
- 笔记本电脑

### **参考资料和网页链接**

待定

# Architecture Technologies III

**Course Code:** SDAT3003

**Course Name:** Architecture Technologies III

**Credit points:** ECTS: 4 Chinese: 2

**Subjects related:** Architecture

**Pre-requirement for the Course:** Building Technologies II

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

This dual course combines the essentials of architecture and a structural engineering degree so you could become an architect or an engineer.

The course develops architectural and engineering skills in an integrated manner.

This course contains a series of lectures on building environment and technology. It introduces the constructional and structural principles of small buildings and the ways in which buildings modify the thermal, aural and visual environments. This course covers all the main classes of materials (ceramics, metals, polymers, natural materials and composites), describing the properties that they show, the root cause of their properties, the structure, and how we can affect this by processing to get the properties we want. The course will also introduce some ways that the best material for a purpose can be selected.

## Main teaching materials

1. Addington, Michelle. 《Smart Materials and Technologies in Architecture》, ISBN: 9780080480954.
2. Emmitt, Stephen. 《Architectural Technology》. 2013-6. ISBN: 9781118292068.
3. Sebestyen, Gyula; Pollington, Christopher; Pollington, Christopher. 《New Architecture and Technology》. ISBN: 9780750651646.
4. 西尔弗 (钟冠球, 肖明慧 译). 《建筑技术概论——给建筑师的建筑技术设计指南》. 中国建筑工业出版社. 2011-10. ISBN: 9787112133970.

Silver, Pete; McLean, Will; Whitsett, Dason (CON) (translated by Zhong Guanqiu ,Xiao

Minghui).《Introduction to Architectural Technology》. China Construction Industry Press. 2011-10. ISBN: 9787112133970. (In Chinese)

5. 克里斯·亚伯(项琳斐, 项瑾斐 译).《建筑.技术与方法》.中国建筑工业出版社. 2009-1. ISBN: 9787112103706.

Chris Abel (translated by Xiang Linfei and Xiang Jinfei). 《Architecture. Technology and methods 》 . China Construction Industry Press. 2009-1. ISBN: 9787112103706. (In Chinese)

6. 王树京.《建筑技术概论》. 中国建筑工业出版社. 2008-10. ISBN: 9787112098101.

Wang Shujing.《Introduction to building technology》. China Construction Industry Press. 2008-10. ISBN: 9787112098101. (In Chinese)

7. 英格伯格·弗拉格. 托马斯赫尔佐格. 《建筑+技术:architecture+technology》. 中国建筑工业出版社, 2003.

Ingelberg Flager Thomas Herzog. 《Architecture + technology 》 . China Construction Industry Press, 2003. (In Chinese)

## Reference

[1] Tilikidou I . "Enterprise Networking Architecture & Technologies".

[2] Abel C . Architecture, Technology and Process[J]. 2004.

[3] Drake S . The Third Skin: Architecture Technology and Environment[J]. 2007.

[4] Yang W . ENERGY SAVING TECHNOLOGY IN FRENCH ARCHITECTURE TECHNOLOGY[J]. WORLD ARCHITECTURE, 2000.

[5] Bilal M . A Review of Internet of Things Architecture, Technologies and Analysis Smartphone-based Attacks Against 3D printers[J]. 2017.

## **Learning objectives/aims and competencies**

- Understanding the relationships of ecology, material use and the wider building industry
- Reflecting the role of architects

## **Units**

- 1 Sustainable Construction I
- 2 Materials I
- 3 Economy I

## **Teaching and learning methods and formats**

- Lecture
- Workshops

## **Envisaged practical skills**

- Exploring design solutions by using creative and scientific methods
- Combine architectural design with ecological principles
- Ability to undertake architectural projects following environmental principles

## **Envisaged theoretical and reflective skills**

- Reflection on impact of architectural design
- Understanding the responsibility of architects to keep the planet habitable

## **Envisaged scientific skills**

- Ability of researching new categories of projects, technologies and solutions
- Ability to articulate theoretical and practical responses to the increasing complexity of contemporary architecture

## **Course conclusion and proof of performance**

Each class has to be passed (grading includes attendance, in-class assignments, final project)

# Unit 1: Sustainable Construction I

(code: BA AR 9.1)

## Profile of lecturer(s)

- Experts in ecology
- Experts in sustainable construction
- Experience with the integration of theoretical knowledge into architectural projects

## Content

- Basics of building physics, and building technology
- Application of knowledge for architectural concepts
- Site specific factors
- Light, sound and heat,
- Building infrastructures,
- Passive Measures to reduce energy consumption
- Energy systems
- Fire protection
- Co2-emissions and embedded carbon
- Integral planning concepts
- System performance evaluation.

## Teaching and learning methods and formats

- Lectures & Guest lectures,
- Mentoring
- Field studies

## Learning objectives/aims and competencies

- Knowledge of building physics and thermal engineering basics
- An intuitive basic understanding of the interactions between climate, architecture, comfort and energy
- Basic knowledge of climate-friendly or passive construction, which can be applied especially in the early design phases.
- Knowledge of today's standard of building technology



- Understanding of the relationships between environmental impacts on humans and buildings, as well as the effect of building technology factors on architecture and people.
- basic understanding of climate adjusted building
- basic knowledge of acoustics of buildings
- understanding environmental criteria for architectural design
- knowledge about building physics
- ability to discuss these aspects with engineers
- Ability to produce Informed Design and building processes following environmental and material data

### **Unit conclusion and proof of performance**

- Presentation
- Documentation of course assignments

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

- Various Simulation software, i.e. Diva, Ladybug
- Laptop

### **References and web links**

Will be provided

## Unit 2: Materials I

(code: BA AR 9.2)

### Profile of lecturer(s)

Practising architect with knowledge about new material development and expertise in the application of new material

### Content

- Introduction to materials used in the building industry
- Embedded carbon
- Lifecycle
- Reuse, recycling
- Material forming techniques.

### Teaching and learning methods and formats

- Lectures & Guest lectures,
- Mentoring
- Field studies

### Learning objectives/aims and competencies

- Understanding the impact of production and application of materials
- Understanding of how material and technology culture impacts design and vice-versa
- Understanding of manufacturing processes related to different materials
- Exploring design solutions by using creative and scientific methods
- Material in-depth knowledge
- Correlation with economies and markets
- Notions of design for immersive and embodiment experience using materials
- Understanding design as a scientific and artistic discipline with market impact

### Unit conclusion and proof of performance

- Presentation
- Documentation of course assignments

## **Bibliography / literature**

Will be provided

## **Necessary infrastructure and equipment**

- Access to material library / samples
- Laptop

## **References and web links**

Will be provided

## Unit 3: Economy I

(code: BA AR 9.3)

### Profile of lecturer(s)

- Familiar with Construction Industry
- Interdisciplinary Research & Practice background

### Content

- Understanding of economic aspects of building construction
- Legal aspects and contracts
- Cost calculations
- Planning and constructions methods
- The second part will focus on developing architectural design strategies and solutions based on “nonlinear” and circular systems aiming to close or limit material and resource loss, while minimizing waste, using this as a resource in itself.

### Teaching and learning methods and formats

- -Lectures & Guest lectures,
- -Mentoring

### Learning objectives/aims and competencies

- Conceptual thinking related to economic tasks
- Research capabilities
- Understanding complex economic relationships and their influence on architectural design
- Understanding design as a scientific and artistic discipline with market impact
- Management and communication skills / Negotiating ideas in group work
- Understanding financial aspects of architectural projects
- Understanding how architectural practices operate,
- Role of architect related to financial aspects

### Unit conclusion and proof of performance

- Full attendance
- In-class assignments
- Documentation of course work

## **Bibliography / literature**

Will be provided

## **Necessary infrastructure and equipment**

- Laptop

## **References and web links**

Will be provided

# 建筑技术 III

课程代码: SDAT3003

课程名: 建筑技术 III

学分: 欧方 4 学分 中方 2 学分

开设专业: 建筑学

先修课程: 建筑技术 II

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程结合了建筑学和结构工程的基本知识,旨在培养学生成为建筑师和结构工程师的复合才。该课程以综合的方式培养建筑和工程技能,包括一系列关于建筑环境和技术的讲座。课程介绍了小型建筑的构造和结构原理,以及建筑改变热环境和视觉环境的方式。本课程涵盖所有主要类别的材料(陶瓷、金属、聚合物、天然材料和复合材料),教授材料性能、材料特性、建筑结构,以及加工方式。本课程还将教授材料和构造的优化组合方法。

## 主要参考教材

1. Addington, Michelle. 《Smart Materials and Technologies in Architecture》, ISBN: 9780080480954
2. Emmitt, Stephen . 《Architectural Technology》. 2013-6. ISBN: 9781118292068.
3. Sebestyen, Gyula; Pollington, Christopher; Pollington, Christopher. 《New Architecture and Technology》. ISBN: 9780750651646.
4. 西尔弗 (钟冠球, 肖明慧 译). 《建筑技术概论——给建筑师的建筑技术设计指南》. 中国建筑工业出版社. 2011-10. ISBN: 9787112133970.
5. 克里斯·亚伯(项琳斐, 项瑾斐 译). 《建筑技术与方法》. 中国建筑工业出版社. 2009-1. ISBN: 9787112103706.
6. 王树京. 《建筑技术概论》. 中国建筑工业出版社. 2008-10. ISBN: 9787112098101.
7. 英格伯格·弗拉格. 托马斯赫尔佐格. 《建筑+技术:architecture+technology》. 中国建筑工业出版社, 2003.

## 参考文献

[1] Tilikidou I . "Enterprise Networking Architecture & Technologies".

[2] Abel C . Architecture, Technology and Process[J]. 2004.

- [3] Drake S . The Third Skin: Architecture Technology and Environment[J]. 2007.
- [4] Yang W . ENERGY SAVING TECHNOLOGY IN FRENCH ARCHITECTURE TECHNOLOGY[J]. WORLD ARCHITECTURE, 2000.
- [5] Bilal M . A Review of Internet of Things Architecture, Technologies and Analysis Smartphone-based Attacks Against 3D printers[J]. 2017.

## 课程培养目标与能力

- 了解生态、材料使用和更广泛的建筑行业之间的关系
- 扩展建筑师的角色

## 单元

- 1 可持续建设 I
- 2 材料 I
- 3 经济 I

## 教学模式与方法

- 讲座
- 研讨会

## 目标实践技能

- 利用创造性和科学的方法探索设计解决方案
- 将建筑设计与生态学原则相结合
- 能够遵循环境原则进行建筑项目

## 目标理论与思维能力

- 对建筑设计影响的思考
- 理解建筑师保持地球适宜居住的责任

## 目标科学技能

- 具有研究新类别的项目、技术和解决方案的能力
- 对日益复杂的当代建筑，能够清晰地表达理论和实践反应的能力

## 考核方式

课程项目为主导的考核方式（评分包括出勤率、课堂作业、期末项目）。



## 单元 1 可持续建设 I

(单元编号: BA AR 9.1)

### 师资配备

- 生态学专家
- 可持续发展建设方面的专家
- 有将理论知识融入建筑项目的经验

### 内容

- 建筑物理和建筑技术基础
- 建筑概念知识的应用
- 现场特定因素
- 光, 声音和热量
- 建筑基础设施
- 减少能源消耗的被动式措施
- 能源系统
- 消防
- 二氧化碳排放量和内含碳
- 整体规划概念
- 系统性能评估

### 教学模式

- 讲座和客座讲座,
- 指导
- 实地研究

### 学习目标和能力培养

- 具备建筑物理知识和热工程基础知识
- 对气候、建筑、舒适和能源之间相互作用的直观理解
- 具备气候友好型或被动型施工的基本知识, 尤其可应用于早期设计阶段。
- 了解当今的建筑技术标准
- 了解环境对人类和建筑物影响之间的关系, 以及建筑技术因素对建筑和人的影响。
- 对气候适应建筑的基本了解
- 掌握建筑声学的基本知识
- 了解建筑设计的环境标准

- 关于建筑物理学的知识
- 能够与工程师讨论
- 能够根据环境和材料数据产生知情设计和建筑过程

### **单元总结和考核方式**

- 展示
- 课堂任务的文件记录

### **参考书目/文献**

待定

### **必要的基础设施和设备**

- 仿真软件
- 便携式电脑

### **参考资料和网页链接**

待定

## 单元 2 材料 I

(单元编号: BA AR 9.2)

### 师资配备

具备新材料开发知识和新材料应用的专业知识

### 内容

- 建筑行业使用的材料简介
- 内含碳
- 生命周期
- 重复使用、回收
- 材料成型技术

### 教学模式

- 讲座和客座讲座,
- 指导
- 实地研究

### 学习目标和能力培养

- 了解材料的生产和应用的影响
- 理解材料和技术文化如何影响设计, 反之亦然
- 了解与不同材料相关的制造工艺
- 利用创造性和科学的方法探索设计解决方案
- 材料深入知识
- 与经济和市场的相关性
- 沉浸式的设计理念和体验材料
- 将设计理解为一门具有市场影响的科学和艺术学科

### 单元总结和考核方式

- 展示
- 课堂任务的文件记录

### 参考书目/文献

待定

## **必要的基础设施和设备**

能够访问材料库/样本

笔记本电脑

## **参考资料和网页链接**

待定

## 单元 3 经济 I

(单元编号: BA AR 9.3)

### 师资配备

- 熟悉的“建筑业”
- 跨学科的研究与实践背景

### 内容

- 了解建筑施工的经济方面
- 法律方面和合同
- 成本计算
- 规划和施工方法
- 第二部分将重点致力于开发基于“非线性”和循环系统的建筑设计策略和解决方案，旨在关闭或限制材料和资源损失，同时最大限度地减少浪费，将其作为一种资源。

### 教学模式

- 讲座和客座讲座
- 指导

### 学习目标和能力培养

- 与经济任务相关的概念性思维
- 研究能力
- 理解复杂的经济关系及其对建筑设计的影响
- 将设计理解为一门具有市场影响的科学和艺术学科
- 管理和沟通技巧
- 在小组工作中的协商能力
- 了解建筑项目的财务方面
- 了解建筑实践是如何运作的
- 与财务方面相关的建筑师角色

### 单元总结和考核方式

- 出勤率
- 课堂作业
- 课堂任务的文件记录

## 参考书目/文献

待定

## 必要的基础设施和设备

笔记本电脑

## 参考资料和网页链接

待定

# Studio Public Building

**Course Code:** SDAT3004

**Course Name:** Studio Public Building

**Credit points:** ECTS: 7 Chinese: 5

**Subjects related:** Architecture

**Pre-requirement for the Course:** Participation in sustainable living project

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

The course aims to expand and mythologize theoretical knowledge of architectural design for undergraduate students. This course is an important part of the basic theories and methods of public architectural design, and is a specialized course with strong theoretical and practical orientation. The main task of the course is to explain design methods for creating pleasant public spaces in architecture and urban design, and to explore the relationship between the social attributes of public buildings and space. This course focuses on the basic types of public spaces and design methods, and develops students' design skills to deal with large public buildings. After the course training, undergraduates will be able to have a preliminary understanding of the basic composition, morphological characteristics, design elements, open engines and technical characteristics of different types of public spaces.

## Main teaching materials

1. 迈尔森(著) (贾珺 / 方晓风 译) . 《新公共建筑》 . 2002-1. ISBN: 9787112048939.  
Melson (translated by Jia Jun / Fang Xiaofeng). 《New public buildings》 . 2002-1.  
ISBN: 9787112048939. (In Chinese)
2. 史立刚, 刘德明. 《大空间公共建筑生态设计》 . 中国建筑工业出版社. 2009-10.  
ISBN: 9787112111602.  
Shi Ligang, Liu Deming. 《Ecological design of large space public buildings》 . China  
Construction Industry Press. 2009-10. ISBN: 9787112111602. (In Chinese)
3. 张文忠. 《公共建筑设计原理》 . 中国建筑工业出版社 . 2005-08-26.  
ISBN: 9787112074143.  
Zhang Wenzhong. 《Principles of public building design》 . China Construction Industry

Press2005-08-26. ISBN: 9787112074143. (In Chinese)

4. 西班牙未来建筑. 《未来建筑 : 公共建筑设计大趋= Future Architecture : Public Building Design Trend》浙江大学出版社, 2010.

Future architecture in Spain. 《Future architecture: public building design trend》, Zhejiang University Press, 2010. (In Chinese)

5. Stanley-Brown, R.; United States Public Works Administrati. 《Public Buildings》. ISBN: 9781172758012.

6. UNITED STATES. CONGR. 《Public Buildings and Grounds》. ISBN: 9781248687895.

7. Brooks, Samuel H. . 《Select Designs for Public Buildings》. ISBN: 9781179473642.

## Reference

1. Milner J . An investigation of contemporary public building design with particular reference to disabled people's design needs and designer awareness. 1992.

2. Wetzel B M . Invitation of the city: Design of a public building in Rotterdam:[J]. 2010.

3. Guan Q . Game Analysis of Principal Parts' Behavior in Large Public Building Design Projects[J]. Construction Economy, 2007.

4. Ren Q , Fang B H . Analysis of the Application of Green Building Concept in Public Building Design[J]. Construction & Design for Engineering, 2019.

5. 赵冠谦. 我国居住建筑和公共建筑设计技术的现状与发展——从 1996 年至今[J]. 住宅科技, 2009(5):4.

6. 翁方军. 公共建筑设计中的绿色建筑设计[J]. 引文版:工程技术, 2015(19):274-274.

7. 邓金山. 公共建筑设计中绿色建筑设计[J]. 建材与装饰, 2016(52):2.



## **Learning objectives/aims and competencies**

- Managing design project with complex mixed-use space programme
- Design ability for large scale buildings combining indoor and outdoor spaces

## **Units**

- 1 Research public buildings
- 2 Studio project

## **Teaching and learning methods and formats**

- Individual project

## **Envisaged practical skills**

- Ability to represent complex typology and mixed used development
- Deriving project organisation from space program

## **Envisaged theoretical and reflective skills**

- Concept development for complex space program
- Understanding of typologies for public project

## **Envisaged scientific skills**

- Exploring architectural solutions by using creative and scientific methods

## **Course conclusion and proof of performance**

- Mid-term
- Final review

# Unit 1: Research Public Buildings

(code: BA AR 10.1)

## Profile of lecturer(s)

- Experts in the planning of public buildings
- Practical experience with the design of public structures

## Content

- Introduction to public building types
- Factors influencing the design of public building
- Public spaces and their social functions
- Introduction to abstract representation of space program
- Organisation of complex mixed-use spaces

## Teaching and learning methods and formats

- Lectures & Guest lectures,
- Desk based research
- field studies

## Learning objectives/aims and competencies

- Understanding of the social qualities architecture can provide
- Definition of complex spatial system

## Unit conclusion and proof of performance

- Full attendance
- Presentation

## Bibliography / literature

Will be provided

## Necessary infrastructure and equipment

- Student workspaces
- Access to library
- Access to online data bank
- Laptop

## References and web links

Will be provided

## **Unit 2: Studio Public Building**

(code: BA AR 10.2)

### **Profile of lecturer(s)**

- Experts in the planning of public buildings
- -Practical experience with the design of public structures

### **Content**

- Development of architectural design for complex public building
- Integration of social aspects into design

### **Teaching and learning methods and formats**

- -Lectures & Guest lectures,
- -Mentoring
- -field studies,
- -Prototyping, Testing

### **Learning objectives/aims and competencies**

- Management and communication skills
- Negotiating ideas in group work
- Mastering complexity
- Exploring architectural solutions by using creative and scientific methods
- Develop novel architectural design solutions for complex buildings
- Ability to choose adequate organizational principle
- Ability to reflect the impact of regulations, climate and culture in design project
- Understanding the historical development of architecture related to public buildings
- Designing for human interaction
- Ability to employ diagrams as design tools

### **Unit conclusion and proof of performance**

- Full attendance
- Presentations: Mid-term and Final
- Documentation

## **Bibliography / literature**

Will be provided

## **Necessary infrastructure and equipment**

- Student workspaces
- Laptop

## **References and web links**

Will be provided

# 工作坊：公共建筑

课程代码: SDAT3004

课程名: 工作坊: 公共建筑

学分: 欧方 7 学分 中方 5 学分

开设专业: 建筑学

先修课程: 参与可持续生活项目

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程旨在拓展和讲述本科生建筑设计理论知识。本门课程是公共建筑设计基本理论和方法的重要组成部分，是一门理论性和实用性很强的专业课。课程的主要任务是解释在建筑和城市设计中创造宜人公共空间的设计方法，并探索公共建筑的社会属性与空间之间的关系。本门课程主要讲授公共空间的基本类型和设计方法，培养学生应对大型公共建筑的设计能力。经过课程训练，本科生能够对不同类型公共空间的基本构成、形态特征、设计元素、开发动机和技术特征有初步了解。

## 主要参考教材

1. 迈尔森(著) (贾珺 / 方晓风 译) .《新公共建筑》. 2002-1. ISBN: 9787112048939.
2. 史立刚, 刘德明.《大空间公共建筑生态设计》. 中国建筑工业出版社. 2009-10. ISBN: 9787112111602.
3. 张文忠. 《公共建筑设计原理》. 中国建筑工业出版社. 2005-08-26. ISBN: 9787112074143.
4. 西班牙未来建筑. 《未来建筑 : 公共建筑设计大趋 = Future Architecture : Public Building Design Trend》浙江大学出版社, 2010.
5. Stanley-Brown, R.; United States Public Works Administrati. 《Public Buildings》. ISBN: 9781172758012.
6. UNITED STATES. CONGR. 《Public Buildings and Grounds》. ISBN: 9781248687895.
7. Brooks, Samuel H. . 《Select Designs for Public Buildings》. ISBN: 9781179473642.

## 参考文献

1. Milner J. An investigation of contemporary public building design with particular

- reference to disabled people's design needs and designer awareness. 1992.
2. Wetzel B M. Invitation of the city: Design of a public building in Rotterdam:[J]. 2010.
  3. Guan Q. Game Analysis of Principal Parts' Behavior in Large Public Building Design Projects[J]. Construction Economy, 2007.
  4. Ren Q, Fang B H . Analysis of the Application of Green Building Concept in Public Building Design[J]. Construction & Design for Engineering, 2019.
  5. 赵冠谦. 我国居住建筑和公共建筑设计技术的现状与发展——从 1996 年至今[J]. 住宅科技, 2009(5):4.
  6. 翁方军. 公共建筑设计中的绿色建筑设计[J]. 引文版:工程技术, 2015(19):274-274.
  7. 邓金山. 公共建筑设计中绿色建筑设计[J]. 建材与装饰, 2016(52):2.

## 课程培养目标与能力

- 利用复杂的混合用途空间项目进行设计项目管理
- 结合室内和室外空间的大型建筑设计能力

## 单元

- 1 公共建筑研究
- 2 工作坊项目

## 教学模式与方法

- 讲座、客座讲座，导师辅导
- 案头研究，实地研究，共同设计
- 原型设计，测试，评估，研讨课

## 目标实践技能

- 复杂类型表达能力和混合使用开发能力
- 从空间规划中衍生出项目结构

## 目标理论与思维能力

- 复杂空间计划的概念开发
- 了解公共项目的类型

## 目标科学技能

- 通过使用创造性和科学的方法来探索建筑解决方案

## 考核方式

- 中期评审
- 期末评审



## 单元 1 公共建筑研究

(单元编号: BA AR 10.1)

### 师资配备

- 公共建筑规划方面的专家
- 有公共建筑设计的实践经验

### 内容

- 公共建筑类型介绍
- 影响公共建筑设计的因素
- 公共空间及其社会功能
- 介绍空间的抽象表示法
- 组织复杂的使用空间

### 教学模式

- 讲座和客座讲座,
- 案头研究
- 实地研究

### 学习目标和能力培养

- 理解建筑可以提供的社会品质
- 复杂空间系统的定义

### 单元总结和考核方式

- 课堂出勤
- 汇报展示

### 参考书目/文献

待定

### 必要的基础设施和设备

- 可获得图书馆及线上数据库资源
- 学生工作区
- 笔记本电脑

## 参考资料和网页链接

待定

## 单元 2 公共建筑工作坊

(单元编号: BA AR 10.2)

### 师资配备

- 在公共建筑规划方面的专家
- 有公共建筑设计的实际经验

### 内容

- 复杂公共建筑的建筑设计发展
- 社会与设计的融合
- 

### 教学模式

- 讲座和客座讲座,
- 指导
- 实地研究,
- 原型、测试

### 学习目标和能力培养

- 管理和沟通技巧
- 在小组工作中协商想法
- 掌握复杂性
- 通过使用创造性和科学的方法来探索建筑解决方案
- 为复杂的建筑开发新建筑设计解决方案
- 能够选择适当的组织原则
- 能够在设计项目中反映法规、气候和文化的影响
- 了解与公共建筑相关的建筑的历史发展
- 人类互动设计
- 能够使用图表作为设计工具

### 单元总结和考核方式

- 课堂出勤
- 展示: 期中和期末
- 文档记录

## 参考书目/文献

待定

## 必要的基础设施和设备

- 学生工作区
- 笔记本电脑

## 参考资料和网页链接

待定

# Architecture Culture IV

**Course Code:** SDAT3005

**Course Name:** Architecture Culture IV

**Credit points:** ECTS: 6 Chinese: 4

**Subjects related:** Architecture

**Pre-requirement for the Course:** Architecture Culture III

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

The course adopts a number of topics to introduce the theory of urban and architectural cultural heritage conservation and restoration, as well as many cases of urban and architectural cultural heritage, including representative cases from Italy, France, Germany, Austria, Poland, Hungary, and Ukraine, in addition to many case studies of European cultural heritage restoration projects, so that students can fully understand the cultural characteristics of urban and architectural heritage, and master the concept of advanced design for conservation and reuse of cultural heritage, as well as relevant design methods for reuse. The course will enable students to fully understand the cultural characteristics of urban and architectural heritage and to master the advanced design concepts of cultural heritage conservation and reuse, as well as the related reuse design methods. On top of this, the course infuses new ideas through digital simulation restoration, typology and other specialties to expand the research field of architectural culture and combine new technologies and methods. The course strives to improve the overall quality, improve the knowledge structure, and broaden the international perspective of undergraduate architecture students.

## Main teaching materials

1. 丁沃沃, 胡恒. 《建筑文化研究》. 中央编译出版社. 2009-8. ISBN: 9787802118799.  
Ding Wowo, Hu Heng. 《Research on architectural culture》. Central Compilation Publishing House. 2009-8. ISBN: 9787802118799. (In Chinese)
2. 萨尔瓦多·比尼亚斯著, 《当代保护理论》, 同济大学出版社.  
Salvador binias, 《Contemporary protection theory》, Tongji University Press. (In Chinese)

3. 切萨雷·布兰迪著.《修复理论》, 同济大学出版社.  
Cesare brandy .《Repair theory》, Tongji University Press. (In Chinese)
4. Jukka Jokilehto.《A History of Architectural Conservation》. Routledge.
5. Joan Ockman.《Architecture Culture》. Rizzoli. 1993. ISBN: 9780847815227.
6. Sharr, Adam.《Reading Architecture & Culture》. 2012. ISBN: 9780415601436.
7. Antoine Picon.《Digital Culture in Architecture》. 2010. Birkhäuser Architecture. ISBN: 9783034602594.

## Reference

1. 赵群, 刘加平. 地域建筑文化的延续和发展--简析传统民居的可持续发展[J]. 新建筑, 2003(2):2.
2. 阮仪三. 中国传统建筑文化的保护与传承[J]. 百年建筑, 2003(Z1):6.
3. 曾坚, 杨晓华. 试论全球化与建筑文化发展的关系[J]. 建筑学报, 1998(8):3.
4. 王永仪, 魏清泉. 工业建筑文化传承与社会节约——旧工业厂房的改造与再利用[J]. 规划师, 2007, 23(7):3.
5. 赵群, 刘加平. 地域建筑文化的延续和发展--简析传统民居的可持续发展[J]. 新建筑, 2003.
6. Zhen Z. The Foundation of Chinese Architecture Culture——The Confucian, Dao, Buddhism and the Chinese Architecture Culture[J]. Huazhong Architecture, 2003.

## **Learning objectives/aims and competencies**

- Provide Insights into broader theoretical background
- Overview of computational techniques

## **Units**

- 1 Architecture Theory II
- 2 Digital Design and Digital Production II
- 3 Building Typology II

## **Teaching and learning methods and formats**

- Lectures
- Workshop

## **Envisaged practical skills**

- Ability to choose suitable techniques for representation of own designs including computational techniques

## **Envisaged theoretical and reflective skills**

- Ability to understand impact of theoretical reflections on architectural design in more depth

## **Envisaged scientific skills**

- Understanding of methods of typological classification of buildings

## **Course conclusion and proof of performance**

- Mid-term
- Final review

## Unit 1: Architecture Theory II

(code: BA AR 11.1)

### Profile of lecturer(s)

- Experts in theory and history of architecture
- Experts in social sciences and architecture

### Content

- Deepening of understanding of theoretical questions based on correlation of theoretical, aesthetical, artistic, political and cultural issues
- Current questions of architectural discourse are addressed. Each semester, a specific topic is focused
- Introduction of the theoretical discipline of aesthetics to arrange experiences and observations in an overview, to make architectural concepts describable and understand-able on the basis of current theories and on the basis of examples of all media artistic productions.

### Teaching and learning methods and formats

- Lectures & Inputs, guest lectures,
- mentoring
- Desk based research,
- field studies,

### Learning objectives/aims and competencies

- Systematic study of theoretical subjects
- Scientific work
- Practice of critical thinking and the ability of linguistic articulation
- Acquisition of discussion and debating skills
- Ability to analyse and synthesize
- Ability to generate new ideas (creativity)
- Ability to be critical and self-critical
- Articulation of thoughts, discussing architectural concepts
- Research capabilities
- Reflection about historical topics
- Different methods of analysing architecture



- Verbal and written discussions about architectural problems
- Historical critical analysis of architectural concepts

### **Unit conclusion and proof of performance**

- Test
- Written essay

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

- Access to Library and digital archives
- Laptop

### **References and web links**

Will be provided

## Unit 2: Digital Design and Digital Production II

(code: BA AR 11.2)

### Profile of lecturer(s)

- Experts in Computational Design (parametric, algorithmic software)
- Familiar with theory & history on digital design and manufacturing
- Knowledge of CAD software and working flows

### Content

- The course links fabrication techniques to form finding, by means of feedback between digital and physical tests.
- Digital design methodologies: While using computational tools, students gain knowledge on how to design based on concepts and typologies of structural optimisation.
- Implementation of a digital process chain
- Combination of various techniques into a circular design process
- Knowledge about various Simulation tools
- Understanding of the concept of creating Digital twins in architecture

### Teaching and learning methods and formats

- Lectures & Inputs,
- Mentoring
- Prototyping, Testing

### Learning objectives/aims and competencies

- Exploring architectural solutions by using creative and scientific methods
- Application of understanding of digital methods for the design process
- Application of understanding the use of digital tools for the construction process of a scale model
- Combine architectural design with computational design and computer science
- Ability to produce Informed Design and building processes following material, environmental and structural data

### Unit conclusion and proof of performance

- Full attendance

- Documentation of in class assignments
- Presentation

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

- 3D printer
- Laser cutter
- Robot arms
- Laptop

### **References and web links**

Will be provided

## Unit 3: Building Typology II

(code: BA AR 11.3)

### Profile of lecturer(s)

- Practising architects with knowledge about different building typologies,
- Experts in theory of building typology

### Content

- Correlation of complex building requirements and spatial organisation, building form and type
- Introduction to relevant topics for typology:
- Spatial organisation,
- Circulation,
- Lighting,
- Functionality,
- Material and appearance
- Typologically comparative thinking
- Sharpening the design approach
- Second part related to large size complex building types

### Teaching and learning methods and formats

- Lectures & Inputs, guest lectures,
- mentoring
- Desk based research,
- field studies

### Learning objectives/aims and competencies

- Exploring architectural solutions by using creative and scientific methods
- Introduction to building theory topics
- Application in analysis and design exercises
- Articulation in presentation formats
- Design of more complex building typologies in an extended context
- Produce models and prototypes of building elements
- Design ability to deal with complex space programme

### **Unit conclusion and proof of performance**

- Full attendance
- In class assignments
- Documentation of course work

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

- Model workshop
- Fab Lab
- Access to library and online research
- Laptop

### **References and web links**

Will be provided

# 建筑文化 IV

课程代码: SDAT3005

课程名: 建筑文化 IV

学分: 欧方 6 学分 中方 4 学分

开设专业: 建筑学

先修课程: 建筑文化 III

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程采用若干专题的形式, 介绍城市与建筑文化遗产保护、修复等方面的相关理论, 以及众多城市与建筑文化遗产案例, 包括意大利、法国、德国、奥地利、波兰、匈牙利、及乌克兰等国家的代表性案例, 此外还包括很多欧洲文化遗产修复工程的案例分析, 使学生充分了解城市和建筑遗产的文化特色, 掌握先进的文化遗产保护和再利用设计理念, 以及相关的再利用设计方法。在此基础之上, 通过数字模拟修复、类型学等专业的知识, 扩展建筑文化的研究领域, 结合新技术和新方法, 注入新的理念。课程着力提高建筑学本科生的综合素质、改善知识结构、拓宽国际视野。

## 主要参考教材

1. 丁沃沃, 胡恒. 《建筑文化研究》. 中央编译出版社. 2009-8. ISBN: 9787802118799.
2. 萨尔瓦多·比尼亚斯著, 《当代保护理论》, 同济大学出版社.
3. 切萨雷·布兰迪著. 《修复理论》, 同济大学出版社.
4. Jukka Jokilehto. 《A History of Architectural Conservation》. Routledge.
5. Joan Ockman. 《Architecture Culture》. Rizzoli. 1993. ISBN: 9780847815227.
6. Sharr, Adam. 《Reading Architecture & Culture》. 2012. ISBN: 9780415601436.
7. Antoine Picon. 《Digital Culture in Architecture》. 2010. Birkhäuser Architecture. ISBN: 9783034602594.

## 参考文献

1. 赵群, 刘加平. 地域建筑文化的延续和发展--简析传统民居的可持续发展[J]. 新建筑, 2003(2):2.
2. 阮仪三. 中国传统建筑文化的保护与传承[J]. 百年建筑, 2003(Z1):6.

3. 曾坚, 杨晓华. 试论全球化与建筑文化发展的关系[J]. 建筑学报, 1998(8):3.
4. 王永仪, 魏清泉. 工业建筑文化传承与社会节约——旧工业厂房的改造与再利用[J]. 规划师, 2007, 23(7):3.
5. 赵群, 刘加平. 地域建筑文化的延续和发展--简析传统民居的可持续发展[J]. 新建筑, 2003.
6. Zhen Z. The Foundation of Chinese Architecture Culture——The Confucian, Dao, Buddhism and the Chinese Architecture Culture[J]. Huazhong Architecture, 2003.

## 课程培养目标与能力

- 深入了解更广泛的理论背景
- 计算技术概述

## 单元

- 1 建筑理论 II
- 2 数字设计与数字制作 II
- 3 建筑类型 II

## 教学模式与方法

- 讲座
- 工作坊

## 目标实践技能

- 能够选择合适的技术来代表自己的设计，包括计算技术

## 目标理论与思维能力

- 能够更深入地理解理论思考对建筑设计的影响

## 目标科学技能

- 了解建筑物的类型分类方法

## 考核方式

- 中期评审
- 期末评审



## 单元 1 建筑理论 II

(单元编号: BA AR 11.1)

### 师资配备

- 建筑理论和历史方面的专家
- 社会科学和建筑学方面的专家

### 内容

- 深化基于理论、美学、艺术、政治、文化问题相关性，深化对理论问题的理解
- 讨论当前建筑话语的问题。每个学期，都有一个特定的主题被集中讨论
- 引入美学的理论学科，将经验和观察安排在同一概述中，使建筑概念在当前的理论和所有媒体艺术作品例子的基础上，易于描述和理解。

### 教学模式

- 讲座和理论灌输，客座讲座
- 指导
- 案头研究
- 实地研究

### 学习目标和能力培养

- 理论学科的系统研究
- 科学工作
- 批判性思维的实践与语言表达的能力
- 获得讨论和辩论的技巧
- 有分析和综合的能力
- 产生新想法的能力（创造力）
- 具有批判性和自我批判性的能力
- 表达思想，讨论建筑学的概念
- 研究能力
- 对历史话题的反思
- 分析架构的不同方法
- 关于建筑问题的口头和书面讨论
- 建筑概念的历史批判性分析

### **单元总结和考核方式**

- 笔试
- 论文

### **参考书目/文献**

待定

### **必要的基础设施和设备**

- 能够查阅图书馆及线上资源
- 笔记本电脑

### **参考资料和网页链接**

待定

## 单元 2 数字设计与数字制作 II

(单元编号: BA AR 11.2)

### 师资配备

- 计算设计专家 (参数化、算法软件)
- 熟悉数字设计和制造的理论 and 历史
- 了解 CAD 软件和工作流程

### 内容

- 本课程通过数字测试和物理测试之间的反馈, 将制造技术与成形分析联系起来。
- 数字设计方法: 在使用计算工具时, 学生可以获得关于如何基于结构优化概念和类型学进行设计的知识。
- 数字过程链的实现
- 将各种技术组合成一个循环的设计过程中
- 了解各种仿真工具
- 理解在建筑学中创造数字孪生的概念

### 教学模式

- 讲座和理论灌输,
- 指导
- 原型、测试

### 学习目标和能力培养

- 通过使用创造性和科学的方法来探索建筑解决方案
- 理解数字方法在设计过程中的应用
- 理解数字工具在比例模型施工过程中的应用
- 结合建筑设计与计算设计、计算机科学
- 能够根据材料、环境和结构数据产生知情设计和建筑过程

### 单元总结和考核方式

- 课堂出勤
- 课堂任务的文件
- 汇报展示

## 参考书目/文献

待定

## 必要的基础设施和设备

- 三维打印机
- 激光切割机
- 机械臂
- 笔记本电脑

## 参考资料和网页链接

待定

## 单元 3 建筑类型 II

(单元编号: BA AR 11.3)

### 师资配备

- 了解不同建筑类型实践的建筑师
- 建筑类型学理论方面的专家

### 内容

- 复杂建筑需求与空间组织、建筑形式和类型的相关性
- 类型的相关主题简介
- 空间组织
- 流线
- 照明
- 功能
- 材料和外观
- 类型学上的比较思维
- 加快设计方法
- 第二部分与大型多功能建筑空间类型有关

### 教学模式

- 讲座和理论灌输, 客座讲座,
- 指导
- 案头研究,
- 实地研究

### 学习目标和能力培养

- 通过使用创造性和科学的方法来探索建筑解决方案
- 建筑理论主题简介
- 在分析和设计练习中的应用
- 展示形式的表达
- 在一个扩展的上下文中设计更复杂的建筑类型
- 生成建筑元素的模型和原型
- 处理复杂空间方案的设计能力

### **单元总结和考核方式**

- 课堂出勤
- 课堂任务
- 文件记录

### **参考书目/文献**

待定

### **必要的基础设施和设备**

- 模型工作坊
- 实验室
- 能够获取图书馆及线上资源
- 笔记本电脑

### **参考资料和网页链接**

待定

# Architecture Technologies IV

**Course Code:** SDAT3006

**Course Name:** Building Technologies IV

**Credit points:** ECTS: 4 Chinese: 2

**Subjects related:** Architecture

**Pre-requirement for the Course:** Building Technologies III

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

This course introduces the technical principles and use of medium and large scale buildings. The course consists of three sub-courses: Sustainable Construction II, Materials II and Economics II. The sub-courses encompass the technical and environmental aspects of medium and large buildings, and the learning process of the sub-courses is integrated with design solutions and case studies that consider technical issues such as acoustics, lighting, environment, services and sustainability in the context of complete building design. The focus of the course is to integrate different aspects of building technology with each other and with architectural and engineering design as a whole, including: environmental impacts in terms of codes, sustainable technologies, infrastructure, structures and comfort.

## Main teaching materials

1. Addington, Michelle. 《Smart Materials and Technologies in Architecture》, ISBN: 9780080480954.
  2. Emmitt, Stephen . 《Architectural Technology》. 2013-6. ISBN: 9781118292068.
  3. Sebestyen, Gyula; Pollington, Christopher; Pollington, Christopher. 《New Architecture and Technology》. ISBN: 9780750651646.
  4. 西尔弗 (钟冠球, 肖明慧 译). 《建筑技术概论——给建筑师的建筑技术设计指南》. 中国建筑工业出版社. 2011-10. ISBN: 9787112133970.
- Silver, Pete; McLean, Will; Whitsett, Dason (CON) (translated by Zhong Guanqiu ,Xiao Minghui).《Introduction to Architectural Technology》. China Construction Industry Press. 2011-10. ISBN: 9787112133970. (In Chinese)

5. 克里斯·亚伯(项琳斐, 项瑾斐 译). 《建筑.技术与方法》.中国建筑业出版社. 2009-1. ISBN: 9787112103706.

Chris Abel (translated by Xiang Linfei and Xiang Jinfei). 《Architecture. Technology and methods 》 . China Construction Industry Press. 2009-1. ISBN: 9787112103706. (In Chinese)

6. 王树京. 《建筑技术概论》 . 中国建筑业出版社. 2008-10. ISBN: 9787112098101.

Wang Shujing.《Introduction to building technology》. China Construction Industry Press. 2008-10. ISBN: 9787112098101. (In Chinese)

7. 英格伯格·弗拉格. 托马斯赫尔佐格. 《建筑+技术:architecture+technology》 . 中国建筑业出版社, 2003.

Ingelberg Flager Thomas Herzog. 《Architecture + technology 》 . China Construction Industry Press, 2003. (In Chinese)

## Reference

[1] Tilikidou I . "Enterprise Networking Architecture & Technologies".

[2] Abel C . Architecture, Technology and Process[J]. 2004.

[3] Drake S . The Third Skin: Architecture Technology and Environment[J]. 2007.

[4] Yang W . ENERGY SAVING TECHNOLOGY IN FRENCH ARCHITECTURE TECHNOLOGY[J]. WORLD ARCHITECTURE, 2000.

[5] Bilal M . A Review of Internet of Things Architecture, Technologies and Analysis Smartphone-based Attacks Against 3D printers[J]. 2017.



## **Learning objectives/aims and competencies**

- Understanding the relationships of ecology, material use and the wider building industry
- Reflecting the role of architects

## **Units**

1 Sustainable Construction II

2 Materials II

3 Economy II

## **Teaching and learning methods and formats**

- Lecture
- Workshops

## **Envisaged practical skills**

- Ability to analyse and synthesize
- Critically reflect on technical requirements
- Ability to speak in public

## **Envisaged theoretical and reflective skills**

- Reflection on impact of architectural design
- Understanding the responsibility of architects to keep the planet habitable

## **Envisaged scientific skills**

- Exploring architectural solutions by using creative and scientific methods

## **Course conclusion and proof of performance**

Each class has to be passed (grading includes attendance, in-class assignments, final project)

## **Unit 1: Sustainable Construction II**

(code: BA AR 12.1)

### **Profile of lecturer(s)**

- Experts in ecology
- Experts in sustainable construction
- Experience with the integration of theoretical knowledge into architectural projects

### **Content**

- Basics of building physics, and building technology
- Application of knowledge for architectural concepts
- Site specific factors
- Light, sound and heat,
- Building infrastructures,
- Passive Measures to reduce energy consumption
- Energy systems
- Fire protection
- Co2-emissions and embedded carbon
- Integral planning concepts
- System performance evaluation.

### **Teaching and learning methods and formats**

- Lectures & Guest lectures,
- mentoring
- field studies

### **Learning objectives/aims and competencies**

- Knowledge of building physics and thermal engineering basics
- An intuitive basic understanding of the interactions between climate, architecture, comfort and energy
- Basic knowledge of climate-friendly or passive construction, which can be applied especially in the early design phases.
- Knowledge of today's standard of building technology

- Understanding of the relationships between environmental impacts on humans and buildings, as well as the effect of building technology factors on architecture and people.
- Basic understanding of climate adjusted building
- Basic knowledge of acoustics of buildings
- Understanding environmental criteria for architectural design
- Knowledge about building physics
- Ability to discuss these aspects with engineers

### **Unit conclusion and proof of performance**

- Presentation
- Documentation of course assignments

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

- Various Simulation softwares, i.e. Diva, Ladybug
- Laptop

### **References and web links**

Will be provided

## Unit 2: Materials II

(code: BA AR 12.2)

### Profile of lecturer(s)

Practising architect with knowledge about new material development and expertise in the application of new material

### Content

- Innovative and recyclable materials
- embedded carbon
- lifecycle
- reuse, recycling
- resource conscious building based on locally available material

### Teaching and learning methods and formats

- Lectures & Guest lectures,
- mentoring
- field studies

### Learning objectives/aims and competencies

- Understanding the possibilities to minimise the negative impact of production and application of materials
- Possibilities to minimise the negative impact of production and application of materials
- Understanding of how material and technology culture impacts design and vice-versa
- Understanding of manufacturing processes related to different materials
- Exploring design solutions by using creative and scientific methods
- Material in-depth knowledge
- Correlation with economies and markets
- Notions of design for immersive and embodiment experience using materials
- Understanding design as a scientific and artistic discipline with market impact

### Unit conclusion and proof of performance

- Documentation of course assignments

- Presentation

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

- Access to material library / samples
- Laptop

### **References and web links**

Will be provided

## Unit 3: Economy II

(code: BA AR 12.3)

### Profile of lecturer(s)

- Familiar with Construction Industry
- Experts on theory and history of circular economy and regenerative design
- Experts on lifecycle assessment of materials and buildings
- Familiar with Material Banks concepts and appropriate tools to calculate embodied energy in materials

### Content

- Understanding of economic aspects of building construction
- Legal aspects and contracts
- Cost calculations
- Planning and constructions methods
- Developing architectural design strategies and solutions based on “nonlinear” and circular systems
- Closing or limiting material and resource loss,
- Minimizing waste
- Waste as a resource
- Local sourcing of materials

### Teaching and learning methods and formats

- Lecture& Guest lectures,
- Mentoring

### Learning objectives/aims and competencies

- Research capabilities
- Conceptual thinking related to economic tasks
- Role of architect related to financial aspects
- Understanding complex economic relationships and their influence on architectural design
- Understanding design as a scientific and artistic discipline with market impact
- Management and communication skills / Negotiating ideas in group work
- Understanding financial aspects of architectural projects

- Understanding how architectural practices operate

### **Unit conclusion and proof of performance**

- Full attendance
- In-class assignments
- Test

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

- Access to library / online research
- Laptop

### **References and web links**

Will be provided

# 建筑技术 IV

课程代码: SDAT3006

课程名: 建筑技术 IV

学分: 欧方 4 学分 中方 2 学分

开设专业: 建筑学

先修课程: 建筑技术 III

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

本课程介绍中型和大型建筑的技术原理及使用。课程包括三门子课程: 可持续建设 II, 材料 II 和经济 II。子课程包含了中型和大型建筑的技术和环境问题, 子课程的学习过程与设计方案、案例研究相结合, 在完整的建筑设计背景下考虑声学、照明、环境、服务和可持续性等技术问题。课程的重点是将建筑技术的不同方面相互结合, 并与建筑和工程设计整体结合, 包括: 规范、可持续技术、基础设施、结构和舒适性方面的环境影响。

## 主要参考教材

1. Addington, Michelle. 《Smart Materials and Technologies in Architecture》, ISBN: 9780080480954.
2. Emmitt, Stephen . 《Architectural Technology》. 2013-6. ISBN: 9781118292068.
3. Sebestyen, Gyula; Pollington, Christopher; Pollington, Christopher. 《New Architecture and Technology》. ISBN: 9780750651646.
4. 西尔弗 (钟冠球, 肖明慧 译). 《建筑技术概论——给建筑师的建筑技术设计指南》. 中国建筑工业出版社. 2011-10. ISBN: 9787112133970.
5. 克里斯·亚伯(项琳斐, 项瑾斐 译). 《建筑技术与方法》. 中国建筑工业出版社. 2009-1. ISBN: 9787112103706.
6. 王树京. 《建筑技术概论》. 中国建筑工业出版社. 2008-10. ISBN: 9787112098101.
7. 英格伯格·弗拉格. 托马斯赫尔佐格. 《建筑+技术:architecture+technology》. 中国建筑工业出版社, 2003.

## 参考文献

[1] Tilikidou I. "Enterprise Networking Architecture & Technologies".



- [2] Abel C . Architecture, Technology and Process[J]. 2004.
- [3] Drake S . The Third Skin: Architecture Technology and Environment[J]. 2007.
- [4] Yang W . ENERGY SAVING TECHNOLOGY IN FRENCH ARCHITECTURE TECHNOLOGY[J]. WORLD ARCHITECTURE, 2000.
- [5] Bilal M . A Review of Internet of Things Architecture, Technologies and Analysis Smartphone-based Attacks Against 3D printers[J]. 2017.

## 课程培养目标与能力

- 了解生态、材料使用和更广泛的建筑行业之间的关系
- 反映建筑师的角色

## 单元

- 1 可持续建设 II
- 2 材料 II
- 3 经济 II

## 教学模式与方法

- 讲座
- 工作坊

## 目标实践技能

- 有分析和综合的能力
- 严格地反映技术要求
- 在公共场合发言的能力

## 目标理论与思维能力

- 对建筑设计影响的思考
- 理解建筑师保持地球适宜居住的责任

## 目标科学技能

- 通过使用创造性和科学的方法来探索建筑解决方案

## 考核方式

课程项目为主导的考核方式（评分包括出勤率、课堂作业、期末项目）。

## 单元 1 可持续建设 II

(单元编号: BA AR 12.1)

### 师资配备

- 生态学专家
- 可持续发展建设方面的专家
- 有将理论知识融入建筑项目的经验

### 内容

- 建筑物理和建筑技术基础
- 建筑概念知识的应用
- 现场特定因素
- 光, 声音和热量
- 建筑基础设施
- 减少能源消耗的被动式措施
- 能源系统
- 消防
- 二氧化碳排放量和内含碳
- 整体规划概念
- 系统性能评估

### 教学模式

- 讲座和客座讲座
- 指导
- 实地研究

### 学习目标和能力培养

- 具备建筑物理知识和热工程基础知识
- 对气候、建筑、舒适和能源之间相互作用的直观的基本理解
- 具备气候友好型或被动型施工的基本知识, 尤其可应用于早期设计阶段。
- 了解当今的建筑技术标准
- 了解环境对人类和建筑物的影响之间的关系, 以及建筑技术因素对建筑 and 人的影响
- 对气候适应建筑的基本了解
- 掌握建筑声学的基本知识
- 了解建筑设计的环境标准

- 建立物理学的知识
- 能够与工程师讨论这些方面

### **单元总结和考核方式**

- 展示
- 课堂任务的文档记录

### **参考书目/文献**

待定

### **必要的基础设施和设备**

- 各种仿真软件：如 Diva, Ladybug
- 便携式电脑

### **参考资料和网页链接**

待定

## 单元 2 材料 II

(单元编号: BA AR 12.2)

### 师资配备

具有新材料与实践知识的建筑师

### 具有新材料应用方面的专业知识

### 内容

- 创新材料介绍
- 内含碳
- 生命周期
- 重复使用、回收
- 基于当地可用材料的资源意识建筑

### 教学模式

- 讲座和客座讲座,
- 指导
- 实地研究

### 学习目标和能力培养

- 了解将材料生产和应用的负面影响降至最低的可能性
- 尽量减少材料生产和应用的负面影响的可能性
- 理解材料和技术文化与设计之间的相互影响
- 了解与不同材料相关的制造工艺
- 利用创造性和科学的方法探索设计解决方案
- 材料深入知识
- 与经济和市场的相关性
- 沉浸式的设计理念和体现体验的材料
- 将设计理解为一门具有市场影响的科学和艺术学科

### 单元总结和考核方式

- 课堂任务的文件记录
- 汇报展示

## **参考书目/文献**

待定

## **必要的基础设施和设备**

能够获取到图书馆资源及样本

笔记本电脑

## **参考资料和网页链接**

待定

## 单元 3 经济 II

(单元编号: BA AR 12.3)

### 师资配备

- 熟悉建筑业
- 循环经济和再生设计的理论和历史专家
- 有关材料和建筑生命周期评估的专家
- 熟悉材料库的概念和计算材料中体现能量的适当工具

### 内容

- 了解建筑建设的经济方面
- 法律方面和合同
- 成本计算
- 规划和施工方法
- 开发基于“非线性”和循环系统的架构设计策略和解决方案
- 关闭或限制材料和资源损失,
- 废物最小化
- 废物作为资源
- 材料本地采购

### 教学模式

- 讲座和客座讲座
- 指导

### 学习目标和能力培养

- 研究能力
- 与经济任务相关的概念性思维
- 与财务方面相关的建筑师角色
- 理解复杂的经济关系及其对建筑设计的影响
- 将设计理解为一门具有市场影响的科学和艺术学科
- 管理和沟通技巧/在小组工作中协商想法
- 了解建筑项目的财务方面
- 了解体系结构实践是如何操作的

### **单元总结和考核方式**

- 出勤率
- 课堂作业
- 笔试

### **参考书目/文献**

待定

### **必要的基础设施和设备**

能够获取图书馆及线上资源

笔记本电脑

### **参考资料和网页链接**

待定



# Studio Urban Project I

**Course Code:** SDAT3007

**Course Name:** Studio Urban Project I

**Credit points:** ECTS: 11 Chinese: 7

**Subjects related:** Architecture

**Pre-requirement for the Course:** Previous modules (year 1-3)

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

This course gives students the opportunity to study the urban and built environment using cutting-edge theories and practices in politics, economics, design, sociology and geography. You'll develop a deep critical awareness of how cities work - and when they don't - and how the fortunes of city dwellers around the world can depend on the actions of global financiers, national politicians, and community activists. The course gives students the key analytical and practical skills to prepare you for the workplace.

From the industrial-era modern cities of the Global North such as Manchester and Chicago to the fragmented, sprawling mega-cities of the contemporary Global South such as Lagos and Delhi, urban theorists have sought to understand the interplay of power, everyday practice, and social, political, economic, and cultural processes that both transform and are transformed by urban space. Pulling together critical social science and humanities-informed perspectives, the course draws from interdisciplinary theory and research to engage with urban transformations in both the Global North and the Global South. Topics may include transformations in urban theory, urban uprisings, urban infrastructure, and the role of film and literature in documenting and anticipating urban change.

This course will provide students with an introduction to planning and policymaking in relation to the provision of transport and other types of infrastructure. The module develops students' ability to think critically about the framing of transport and infrastructure policy using an appreciation of historic developments, current practices and debates, transport and infrastructure planning examples from the China and abroad. It will focus on how planners working at a range of spatial scales can give shape to

effective transport and infrastructure strategies, which balance a range of environmental, social and economic objectives.

### **Main teaching materials**

1. 金广君. 《图解城市设计》. 中国建筑工业出版社. 2010-8. ISBN: 9787112121090.  
Jin Guangjun. 《Graphic urban design》. China Construction Industry Press. 2010-8. ISBN: 9787112121090. (In Chinese)
2. 王建国. 《城市设计》. 中国建筑工业出版社. 2009-9. 高校城市规划专业指导委员会规划推荐教材. ISBN: 9787112106219  
Wang Jianguo. 《Urban design》. China Construction Industry Press 2009-9. The steering committee of urban planning in Colleges and universities recommends teaching materials for urban planning. ISBN: 9787112106219. (In Chinese)
3. 邹德慈. 《城市设计概论》. 中国建筑工业出版社, 2003.  
Zou deci. 《Introduction to urban design》. China Construction Industry Press, 2003. (In Chinese)
4. 王世福. 《面向实施的城市设计》. 中国建筑工业出版社, 2005.  
Wang Shifu. 《Implementation oriented urban design》. China Construction Industry Press, 2005. (In Chinese)
5. [美] 唐纳德·沃特森 / [美] 艾伦·布拉特斯 / [美] 罗伯特·G. 谢卜利. (译者: 刘海龙 / 郭凌云 / 俞孔坚 等). 《城市设计手册(Time-Saver Standards For Urban Design)》. 中国建筑工业出版社. 2006-10. ISBN: 9787112080946  
Donald Watson, Alan Blatter, Robert G. shebli (Translator: Liu Hailong / Guo Lingyun / Yu Kongjian, etc.) . 《Time saver standards for urban design》. China Construction Industry Press. 2006-10. ISBN: 9787112080946. (In Chinese)
6. [美] 马克·戈特迪纳 / [英] 莱斯利·马德. (邵文实 译). 《城市研究核心概念 (Key Concepts in Urban Studies)》. 江苏教育出版社. 2013-12. 丛书: 世界城市研究精品译丛. ISBN: 9787549936397. (In Chinese)  
mark gotdina , Leslie madder. (Translated by Shao Wenshi). 《Key concepts in urban studies》. Jiangsu Education Press. 2013-12. Series: a translation of world urban studies ISBN: 9787549936397. (In Chinese)
7. 《Urban Studies》
8. Dominique Craft. 《Urban Studies: Growth and Development》
9. Hannigan & Greg Richards. 《The Sage Handbook of New Urban Studies》

## Reference

1. 王建国. 生态原则与绿色城市设计[J]. 建筑学报, 1997(7):5.
2. 张杰, 吕杰. 从大尺度城市设计到“日常生活空间”[J]. 城市规划, 2003, 27(9):6.
3. 赵士修. 城市特色与城市设计[J]. 城市规划, 1998.
4. 翁奕城. 论城市滨水区的可持续性城市设计[J]. 同济大学学报:社会科学版, 2000.
5. 马文林. 生态原则与绿色城市设计[J]. 建筑工程技术与设计, 2017, 000(005):1983.
6. Chaolin G U, Song G. THE STUDY ON THE URBAN IMAGE AND ITS APPLICATION IN THE URBAN PLANNING[J]. City Planning Review, 2001.
7. Fischer C S. The Study of Urban Community and Personality[J]. annual review of sociology, 1975, 1(1):67-89.
8. Book K, Eskilsson L . Transport, Built Environment and Development Control - a comparative urban study[J]. 1998.
9. Shi Y A, Zhang X. Study on Urban-Suburbanization[J]. URBAN PLANNING REVIEW, 1997.

## **Learning objectives/aims and competencies**

- Ability to understand urban resource flows and develop strategies for sustainable recirculation of these flows
- Ability to develop practical solutions for regenerative and resilient urban planning

## **Units**

1 Research Infrastructure / Mobility

2 Research Green-Blue Networks

## **Teaching and learning methods and formats**

- Thematic input lectures
- Individual project

## **Envisaged practical skills**

- Presentation of complex urban projects
- Development of a project narrative in different scales (1:5000/ 2000 to 1:500)

## **Envisaged theoretical and reflective skills**

- Understanding of complex urban environments
- Understanding the interrelation between social behaviour and built environment
- Ability to develop and implement imaginative ideas, creative and innovative processes for urban planning that satisfy both aesthetic and technical requirements
- Ability to understand urban resource flows and develop strategies for sustainable recirculation of these flows
- Ability to develop practical solutions for regenerative and resilient urban planning

## **Envisaged scientific skills**

- Understanding and processing of scientific knowledge from other disciplines
- Research capabilities

## **Course conclusion and proof of performance**

- Mid-terms
- Finals

## **Unit 1: Research Infrastructure / Mobility**

(code: BA AR 13.1)

### **Profile of lecturer(s)**

- Architect / urbanist
- Experts in Urbanism and Mobility
- Experts in Urban Infrastructure

### **Content**

- Introduction to Crucial aspects of urbanity including mobility and urban infrastructure
- Understanding of the relation between infrastructure planning, transportation and urban planning
- Understanding the relationship between information technologies and urbanism throughout the last decades, and the different visions and historical traditions that have produced the contemporary discourses of the Digital City, the Smart City and other concepts

### **Teaching and learning methods and formats**

- Lecture & Inputs, guest lectures,
- Desk based research,
- field studies

### **Learning objectives/aims and competencies**

- Ability to develop and implement imaginative ideas, creative and innovative processes for urban planning that satisfy both aesthetic and technical requirements
- Ability to communicate and collaborate with professionals from different disciplines (economists, sociologists, administration and more) and with the industry
- Ability to integrate of mobility, transportation infrastructure and urban design
- Different aspects of mobility (people, goods, and information)
- Implementation of car-free cities and neighbourhoods
- Critically reflect on urban planning solutions
- Negotiating ideas in group work

### **Unit conclusion and proof of performance**

- Full attendance
- In-class assignments
- Documentation
- Final Presentation

### **Bibliography / literature**

Will be provided

### **Necessary infrastructure and equipment**

- Access to Library and digital research
- Laptop

### **References and web links**

Will be provided

## Unit 2: Research Green-Blue Networks

(code: BA AR 13.2)

### Profile of lecturer(s)

- Architect / urbanist
- Experts in Urban Infrastructure / Water / Public Spaces

### Content

- Introduction to crucial aspects of urbanity with the focus on water, parks, public spaces and urban infrastructure
- Understanding of the relation between green space planning and urban planning
- Understanding of green infrastructure
- Understanding of local water infrastructure networks and cycles
- Understanding of landscape urbanism

### Teaching and learning methods and formats

- Lectures & Inputs, guest lectures,
- Desk based research,
- field studies

### Learning objectives/aims and competencies

- Ability to develop and implement imaginative ideas, creative and innovative processes for urban planning that satisfy both aesthetic and technical requirements
- Ability to communicate and collaborate with professionals from different disciplines (economists, sociologists, administration and more) and with the industry
- Ability to integrate urban infrastructure and urban design
- Different aspects of green space networks
- Spatial integration of green infrastructure and urban design
- Implementation of sponge city concepts
- Understanding complex problems and translating these in a solvable urban design process
- Ability to work in interdisciplinary teams
- Recognition of diversity and multiculturalism

## **Unit conclusion and proof of performance**

Grading includes:

- Full attendance
- In-class assignments
- Final project
- Documentation

## **Bibliography / literature**

Will be provided

## **Necessary infrastructure and equipment**

- Studio work space for students suitable for team work
- Laptop

## **References and web links**

Will be provided



# 城市规划工作坊 I

课程代码: SDAT3007

课程名: 城市规划工作坊 I

学分: 欧方 11 学分 中方 7 学分

开设专业: 建筑学

先修课程: 1-3 年的课程

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

本课程让学生有机会利用政治、经济、设计、社会学和地理学的前沿理论和实践研究城市和建筑环境。培养学生深刻的批判性意识,了解城市是如何运作的——以及它们何时不运作——以及世界各地城市居民的命运如何取决于全球金融家、国家政客和社区活动人士的行动。本课程向学生提供关键的分析和实践技能,为学生进入职场做好准备。

从工业化时代的曼彻斯特和芝加哥等全球北部现代城市,到拉各斯和德里等当代全球南部支离破碎、扩张的特大城市,城市理论家试图理解权力、日常实践以及社会、政治、经济、文化和文化的相互作用,以及改变城市空间并被其改变的文化过程。本课程汇集了批判性社会科学和人文科学的观点,从跨学科理论和研究中汲取经验,研究全球北方和全球南方的城市转型。主题可能包括城市理论的转变、城市起义、城市基础设施及预测城市变化中的作用等。

课程还将向学生介绍交通和其他类型基础设施的规划和决策。培养学生批判性地思考交通和基础设施政策框架的能力,利用中国和国外的历史发展,结合当前交通和基础设施规划实例作为教学案例。本课程关注在一系列空间尺度上工作的规划者如何形成有效的交通和基础设施战略,从而平衡城市发展中环境、社会和经济目标。

## 主要参考教材

1. 金广君. 《图解城市设计》. 中国建筑工业出版社. 2010-8. ISBN: 9787112121090
2. 王建国. 《城市设计》. 中国建筑工业出版社. 2009-9. 高校城市规划专业指导委员会规划推荐教材. ISBN: 9787112106219
3. 邹德慈. 《城市设计概论》. 中国建筑工业出版社, 2003.
4. 王世福. 《面向实施的城市设计》. 中国建筑工业出版社, 2005.
5. [美] 唐纳德·沃特森 / [美] 艾伦·布拉特斯 / [美] 罗伯特·G. 谢卜利. (译者: 刘海龙 / 郭凌云 / 俞孔坚 等). 《城市设计手册(Time-Saver Standards For Urban Design)》. 中国建筑工业出版社. 2006-10. ISBN: 9787112080946
6. [美] 马克·戈特迪纳 / [英] 莱斯利·马德. (邵文实 译) 《城市研究核心概念 (Key

Concepts in Urban Studies)》. 江苏教育出版社. 2013-12. 丛书: 世界城市研究精品译丛.  
ISBN: 9787549936397

7. 《Urban Studies》

8. Dominique Craft. 《Urban Studies: Growth and Development》

9. Hannigan & Greg Richards. 《The Sage Handbook of New Urban Studies》

### 参考文献

1. 王建国. 生态原则与绿色城市设计[J]. 建筑学报, 1997(7):5.
2. 张杰, 吕杰. 从大尺度城市设计到“日常生活空间”[J]. 城市规划, 2003, 27(9):6.
3. 赵士修. 城市特色与城市设计[J]. 城市规划, 1998.
4. 翁奕城. 论城市滨水区的可持续性城市设计[J]. 同济大学学报:社会科学版, 2000.
5. 马文林. 生态原则与绿色城市设计[J]. 建筑工程技术与设计, 2017, 000(005):1983.
6. Chaolin G U, Song G. THE STUDY ON THE URBAN IMAGE AND ITS APPLICATION IN THE URBAN PLANNING[J]. City Planning Review, 2001.
7. Fischer C S. The Study of Urban Community and Personality[J]. annual review of sociology, 1975, 1(1):67-89.
8. Book K, Eskilsson L. Transport, Built Environment and Development Control - a comparative urban study[J]. 1998.
9. Shi Y A, Zhang X. Study on Urban-Suburbanization[J]. URBAN PLANNING REVIEW, 1997.

## 课程培养目标与能力

- 能够了解城市资源流动，并制定可持续再循环的战略
- 能够为可再生、有弹性的城市规划开发切实可行的解决方案

## 单元

- 1 研究基础设施/流动性
- 2 研究绿蓝网络

## 教学模式与方法

- 主题讲座
- 独立设计项目

## 目标实践技能

- 清晰介绍复杂的城市设计项目
- 绘制不同比例（1:5000/2000 至 1:500）的设计图纸

## 目标理论与思维能力

- 了解复杂的城市环境
- 理解社会行为和建筑环境之间的相互关系
- 能够开发和实施富有想象力的想法，创造性和创新的城市规划过程，以满足美学和技术要求
- 能够了解城市资源流动，并制定可持续再循环的战略
- 能够为可再生、有弹性的城市规划开发切实可行的解决方案

## 目标科学技能

- 理解和处理来自其他学科的科学知识
- 研究能力

## 考核方式

- 中期评审
- 期末评审

## 单元 1 研究基础设施/可移动性

(单元编号: BA AR 13.1)

### 师资配备

建筑师/城市居民

城市主义和流动性方面的专家

城市基础设施专家

### 内容

- 介绍城市建设的关键方面，包括流动性和城市基础设施
- 了解基础设施规划、交通与城市规划之间的关系
- 理解过去几十年来信息技术和城市主义之间的关系，以及产生当代数字城市和智慧城市等概念的不同愿景和历史传统

### 教学模式

- 讲座和理论灌输，客座讲座，
- 案头研究，
- 实地研究

### 学习目标和能力培养

- 能够开发和实施富有想象力的想法，创造性和创新的城市规划过程，以满足美学和技术要求
- 能够与来自不同学科的（经济学家、社会学家、行政部门等）的专业人员以及与行业进行沟通和合作
- 综合交通、交通基础设施和城市设计的能力
- 流动性的不同方面（人员、货物和信息）
- 实施无车的城市和社区
- 对城市规划解决方案的关键性反思
- 在小组工作中协商想法

### 单元总结和考核方式

- 出勤率
- 课堂作业
- 文件记录

- 期末展示

### **参考书目/文献**

待定

### **必要的基础设施和设备**

- 能够获取图书馆及数码资源
- 笔记本电脑

### **参考资料和网页链接**

待定

## 单元 2 研究绿蓝网络

(单元编号: BA AR 13.2)

### 师资配备

- 建筑师/城市居民
- 城市基础设施/水/公共空间方面的专家

### 内容

- 介绍城市建设的关键方面，重点是水、公园、公共空间和城市基础设施
- 了解绿地规划与城市规划之间的关系
- 了解绿色基础设施
- 了解当地的水基础设施网络和循环系统
- 了解景观城市主义

### 教学模式

- 讲座和理论灌输，客座讲座，
- 案头研究，
- 实地研究

### 学习目标和能力培养

- 能够开发和实施富有想象力的想法，创造性和创新的城市规划过程，以满足美学和技术要求
- 能够与来自不同学科的人（经济学家、社会学家、行政部门等）的专业人员以及与行业进行沟通和合作
- 整合城市基础设施和城市设计的能力
- 绿地网络的不同方面
- 绿色基础设施与城市设计的空间一体化
- 海绵城市概念的实施
- 理解复杂的问题，并在城市设计过程中解决
- 能够在跨学科的团队中工作
- 对多样性和多元文化主义的认识

### 单元总结和考核方式

考核包括以下:

- 出勤率

- 课程项目设计
- 论文

### **参考书目/文献**

待定

### **必要的基础设施和设备**

- 供学生使用，适合团队工作的工作室、工作空间
- 笔记本电脑

### **参考资料和网页链接**

待定

# Architecture Culture V

**Course Code:** SDAT3008

**Course Name:** Architecture Culture V

**Credit points:** ECTS:6 Chinese: 4

**Subjects related:** Architecture

**Pre-requirement for the Course:** Architecture Culture IV

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

This course takes the form of several projects, combined with domestic and international numerous urban architectural culture, introduce cultural studies and the theory of global ecology and economics, etc, to make the students fully understand the cultural characteristics of city and architecture at home and abroad, to understand how social organization and culture affect building design. In addition, through the introduction of the development of global ecology and economics and the trend, make the students understand the global economic cycle and ecological cycle, understand the geopolitical forces how to influence the architectural design, in order to improve the comprehensive quality of building college undergraduates, improving knowledge structure, broaden the international field of vision.

## Main teaching materials

- 1 Architecture: A Very Short Introduction, Andrew Ballantyne, 2007.
- 2 Studies of global ecological Governance and ecological economy, Zhang Weiguo, China Social Sciences Press, 2016.

## Reference

- 1 Studies of architecture & culture (volume 1): Ding Wowo, Hu Heng, Central Compilation & Translation Press, 2009.
- 2 Studies of architecture & culture (volume 9): history and critique, Hu Heng, Tongji University Press, 2019.
- 3 The origins of the modern world: A Global and Environmental Narrative from the



Fifteenth to the Twenty-first Century, Robert B. Marks, Rowman & Littlefield Publishers, 2015.

4 Global political economy: Understanding the International Economic Order, Robert Gilpin, Jean M. Gilpin, Princeton University Press, 2001.

## **Learning objectives/aims and competencies**

- Global influences shaping architectural design;
- Broad understanding of cultural differences

## **Units**

1 Cultural Studies I

2 Global Ecology and Economics I

## **Teaching and learning methods and formats**

- Lectures
- Workshop

## **Envisaged practical skills**

- Negotiating ideas in group work
- Research capabilities
- Ability to work in interdisciplinary teams
- Ability to analyse and synthesize
- Ability to be critical and self-critical
- Ability to speak in public

## **Envisaged theoretical and reflective skills**

- Ability to reflect and explain cultural aspects of architecture
- Understanding of abstract forces shaping buildings
- Recognition of diversity and multiculturalism

## **Envisaged scientific skills**

- Exploring architectural solutions by using creative and scientific methods

## **Course conclusion and proof of performance**

Presentation

## **Unit 1: Cultural Studies I**

(code: BA AR 14.1)

### **Profile of lecturer(s)**

- Expert in social sciences and architecture
- Expert in Gender studies
- Interdisciplinary Research & Theory background

### **Content**

- Introduction to Gender studies
- socio-cultural norms of a society, historic examples
- gender and power in architectural and urban design
- the social effects of the built environment

### **Teaching and learning methods and formats**

- Lectures & Inputs, guest lectures,
- Desk based research

### **Learning objectives/aims and competencies**

- Understanding the influence of ideas about gender on architecture
- Understanding cultural diversity and related different needs
- Develop novel architectural design solutions based on the understanding of their effects on different people

### **Unit conclusion and proof of performance**

- Full attendance
  - In class assignments
  - Documentation
- Final Presentation

### **Bibliography / literature**

Architecture: A Very Short Introduction, Andrew Ballantyne, 2007.

### **Necessary infrastructure and equipment**

Access to library

Internet reserach

Laptop

### **References and web links**

- 1 Studies of architecture & culture (volume 1): Ding Wowo, Hu Heng, Central Compilation & Translation Press, 2009.
- 2 Studies of architecture & culture (volume 9): history and critique, Hu Heng, Tongji University Press, 2019.

## Unit 2: Global Ecology and Economics I

(code: BA AR 14.2)

### Profile of lecturer(s)

- Expert in Economy and Ecology
- Expert in Global political questions
- Interdisciplinary Research & Theory background

### Content

Part 1:

- Local, national, and global economic cycles
- Local, national, and global ecological cycles
- Interdependencies and conflicting factors
- Geo-political forces influencing architecture

### Teaching and learning methods and formats

- Lectures & Inputs, guest lectures,
- Desk based research

### Learning objectives/aims and competencies

- Identification of intervention scales (local, national, global)
- Introduction to fields of activity on global scale
- Understanding of Policy making and its influence
- Develop rigorous and scientific research work
- Critically reflect on the influence of global forces on architectural and urban planning

### Unit conclusion and proof of performance

- Full attendance
- In class assignments
- Documentation
- Final Presentation

### Bibliography / literature

Studies of global ecological Governance and ecological economy, Zhang Weiguo, China

Social Sciences Press, 2016.

### **Necessary infrastructure and equipment**

Library and Access to global information

Laptop

### **References and web links**

1 The origins of the modern world: A Global and Environmental Narrative from the Fifteenth to the Twenty-first Century, Robert B. Marks, Rowman & Littlefield Publishers, 2015.

2 Global political economy: Understanding the International Economic Order, Robert Gilpin, Jean M. Gilpin, Princeton University Press, 2001.

# 建筑文化 V

课程代码: SDAT3008

课程名: 建筑文化 V

学分: 欧方 6 学分 中方 4 学分

开设专业: 建筑学

先修课程: 建筑文化 IV

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程采用若干专题的形式, 结合国内外众多城市的建筑文化案例, 介绍文化研究与全球生态与经济学等方面的相关理论, 使学生充分了解国内外城市和建筑的文化特色, 理解社会组织和传统文化如何影响建筑设计。与此同时, 通过介绍全球生态与经济学的发展脉络与趋势, 使学生了解全球经济周期和生态循环规律, 理解地缘政治力量如何影响建筑设计, 以提高建筑学院本科生的综合素质、改善知识结构、拓宽国际视野。

## 主要参考教材

- 1 建筑与文化, 安德鲁·巴兰坦, 外语教学与研究出版社, 2007.
- 2 全球生态治理与生态经济研究, 张卫国、于法稳, 中国社会科学出版社, 2016.

## 参考文献

- 1 建筑文化研究 (第 1 辑), 丁沃沃, 胡恒, 中央编译出版社, 2009.
- 2 建筑文化研究 (第 9 辑): 历史与批判, 胡恒, 同济大学出版社, 2009.
- 3 The origins of the modern world: A Global and Environmental Narrative from the Fifteenth to the Twenty-first Century, Robert B. Marks, Rowman & Littlefield Publishers, 2015.
- 4 Global political economy: Understanding the International Economic Order, Robert Gilpin, Jean M. Gilpin, Princeton University Press, 2001.

## 课程培养目标与能力

- 塑造建筑设计的全球影响。
- 对文化差异的广泛理解。

## 单元

- 1 文化研究 I
- 2 全球生态与经济学 I

## 教学模式与方法

- 讲座
- 工作坊

## 目标实践技能

- 在小组工作中协商想法
- 研究能力
- 能够在跨学科的团队中工作
- 有分析和综合的能力
- 具有批判性和自我批判性的能力
- 在公共场合发言的能力

## 目标理论与思维能力

- 反映和解释建筑文化的能力
- 理解塑造建筑的抽象力
- 对多样性和多元文化主义的认识

## 目标科学技能

- 通过使用创造性和科学的方法来探索建筑解决方案

## 考核方式

汇报与展示



## 单元 1 文化研究 I

(单元编号: BA AR 14.1)

### 师资配备

- 社会科学和建筑学专家
- 性别研究专家
- 跨学科研究与理论背景

### 内容

- 性别研究简介
- 社会文化规范, 历史上的例子
- 在建筑和城市设计中的性别和权力
- 建筑环境的社会影响

### 教学模式

- 讲座和理论灌输, 客座讲座
- 案头研究

### 学习目标和能力培养

- 理解性别观念对建筑的影响
- 了解文化多样性和相关的不同需求
- 根据对不同人的影响, 开发新的建筑设计解决方案

### 单元总结和考核方式

- 课堂出勤
- 课堂作业
- 文档记录
- 期末展示

### 参考书目/文献

[1] Architecture: A Very Short Introduction, Andrew Ballantyne, 2007.

### 必要的基础设施和设备

- 笔记本电脑
- 图书馆及互联网资源

### 参考资料和网页链接

- 1 建筑文化研究（第 1 辑），丁沃沃，胡恒，中央编译出版社，2009.
- 2 建筑文化研究（第 9 辑）：历史与批判，胡恒，同济大学出版社，2009.

## 单元 2 全球生态与经济学 I

(单元编号: BA AR 14.2)

### 师资配备

- 经济和生态学方面的专家
- 全球政治问题方面的专家
- 跨学科研究与理论背景

### 内容

- 地方、国家和全球的经济周期。
- 地方、国家和全球的生态循环。
- 相互依赖的关系和相互冲突的因素。
- 影响建筑的地缘政治力量。

### 教学模式

- 讲座和理论灌输、客座讲座
- 案头研究

### 学习目标和能力培养

- 确定干预规模（地方、国家、全球）
- 介绍在全球范围内的活动领域
- 了解决策及其影响
- 开展严谨、科学的科研工作
- 批判性地反思全球力量对建筑和城市规划的影响

### 单元总结和考核方式

- 出勤
- 课堂作业
- 文档
- 期末展示

### 参考书目/文献

全球生态治理与生态经济研究，张卫国、于法稳，中国社会科学出版社，2016.

## **必要的基础设施和设备**

笔记本电脑

图书馆及全球资源

## **参考资料和网页链接**

1 The origins of the modern world: A Global and Environmental Narrative from the Fifteenth to the Twenty-first Century, Robert B. Marks, Rowman & Littlefield Publishers, 2015.

2 Global political economy: Understanding the International Economic Order, Robert Gilpin, Jean M. Gilpin, Princeton University Press, 2001.

# Studio Urban Project II

**Course Code:** SDAT3009

**Course Name:** Studio Urban Project II

**Credit points:** ECTS: 11 Chinese: 7

**Subjects related:** Architecture

**Pre-requirement for the Course:** Previous modules (year 1-3)

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

The purpose of the course is to enhance the creativity of undergraduate students. Improve the capability of conception and expressing an urban project based on the understanding of principle and of the mastering of design skills. Students will be encourage to participate urban design competition (domestic or international) under the tuition of professors, and finish all the drawings and documents required as an effective entry. Lectures and discussions may be put in to the process, to lead students finish the design actively studio.

## Main teaching materials

Time-Saver Standards For Urban Design, Donald Watson / Alan Plattus, 2006

## Reference

1. Design of Cities, Edmund N. Bacon, Penguin Books, 1976.
2. Urban Forms, Ivor Samuels / Phillippe Panerai / Jean Castex / Jean Charles Depaule, Routledge, 2004.
3. Urban and Regional Planning, Peter Hall, 2008.

## **Learning objectives/aims and competencies**

- Understanding of the complexity of large-scale urban projects and urban design projects
- Integration of different fields and disciplines
- Integration of different scales in one project (methodology and result)
- Integration of social and spatial aspects

## **Units**

1 Integrated Urban Project A

2 Integrated Urban Project B

## **Teaching and learning methods and formats**

- Thematic input lectures
- Individual project
- Group work

## **Envisaged practical skills**

- Ability to communicate and collaborate with professionals from different disciplines (economists, sociologists, administration and more) and with the industry

## **Envisaged theoretical and reflective skills**

- Understanding of Planning instruments
- Participatory practices in urban design and planning

## **Envisaged scientific skills**

- Critically reflect on urban planning solutions
- Ability to have theoretical and practical responses to the increasing complexity of contemporary urban environments

## **Course conclusion and proof of performance**

- Mid-terms
- Finals

# Unit 1: Integrated Urban Project A

(code: BA AR 15.1)

## Profile of lecturer(s)

- Architect / urbanist
- Experts in Urbanism and Mobility
- Experts in Urban Infrastructure
- Familiar with Shenzhen and surroundings

## Content

- Consideration of regional scale (e.g., Pearl River Delta)
- Strategic planning at city scale (e.g., Shenzhen)
- Urban research project at neighbourhood scale with urban design framework and strategic intervention (no classic master planning)

## Teaching and learning methods and formats

- Thematic input lectures
- Individual project
- Group work

## Learning objectives/aims and competencies

- Understanding of the complexity of large-scale urban projects and urban design projects
- Integration of different fields and disciplines
- Integration of different scales in one project (methodology and result)
- Integration of social and spatial aspects
- Understanding the development of the Shenzhen area as laboratory for future urbanity

## Unit conclusion and proof of performance

- Mid-terms

## Bibliography / literature

1. Design of Cities, Edmund N. Bacon, Penguin Books, 1976.

2. Urban Forms, Ivor Samuels / Phillippe Panerai / Jean Castex / Jean Charles Depaule, Routledge, 2004.
3. Urban and Regional Planning, Peter Hall, 2008.

### **Necessary infrastructure and equipment**

Student workspace

Laptop

### **References and web links**

1 <https://www.goood.cn/>

2 <https://www.archdaily.cn/cn>



## Unit 2: Integrated Urban Project B

(code: BA AR 15.2)

### Profile of lecturer(s)

- Architect / urbanist
- Experts in Urbanism and Mobility
- Experts in Urban Infrastructure
- -Familiar with Shenzhen and surroundings

### Content

- Consideration of regional scale (e.g., Pearl River Delta)
- Strategic planning at city scale (e.g., Shenzhen)
- Urban design project at neighbourhood scale with urban design framework and strategic intervention (no classic master planning)

### Teaching and learning methods and formats

- Thematic input lectures
- Individual project
- Group work

### Learning objectives/aims and competencies

- Understanding of the complexity of large-scale urban projects and urban design projects
- Integration of different fields and disciplines
- Integration of different scales in one project (methodology and result)
- Integration of social and spatial aspects
- Understanding the development of the Shenzhen area as laboratory for future urbanity

### Unit conclusion and proof of performance

Final presentation

### Bibliography / literature

1. Design of Cities, Edmund N. Bacon, Penguin Books, 1976.

2. Urban Forms, Ivor Samuels / Phillippe Panerai / Jean Castex / Jean Charles Depaule, Routledge, 2004.
3. Urban and Regional Planning, Peter Hall, 2008.

### **Necessary infrastructure and equipment**

- Student workspace
- Laptop

### **References and web links**

1 <https://www.goood.cn/>

2 <https://www.archdaily.cn/cn>

# 城市规划工作坊 II

课程代码: SDAT3009

课程名: 城市规划工作坊 II

学分: 欧方 11 学分 中方 7 学分

开设专业: 建筑学

先修课程: 1-3 年级的课程

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程的目的是提高学生的研究型城市设计能力, 在掌握设计基本理论和技能的基础上, 深化构思能力和表达能力。课程选择具有研究性、探索性的题目, 要求学生通过深入调研分析, 结合新的设计理念和手段, 提出具有新意的方案设计, 通过图纸、模型等方式完成城市规划设计方案的表达。鼓励学生结合课程设计参加全国或国际竞赛。教师组织专题讲座, 学生采用集体讨论的方式等, 引导学生发挥主观能动性, 独立完成设计方案。

## 主要参考教材

城市设计手册, [美] 唐纳德·沃特森 / [美] 艾伦·布拉特斯 / [美] 罗伯特·G. 谢卜利, 中国建筑工业出版社, 2006.

## 参考文献

1. 城市设计, [美]埃德蒙·N.培根, 中国建筑工业出版社, 2003.
2. Urban Forms, Ivor Samuels / Phillippe Panerai / Jean Castex / Jean Charles Depaule, Routledge, 2004.
3. 城市和区域规划, [英]彼得·霍尔, 中国建筑工业出版社, 2008.

## 课程培养目标与能力

- 了解大型城市项目和城市设计项目的复杂性。
- 不同领域和学科的综合。
- 在一个项目中集成不同的规模（方法和结果）。
- 社会和空间方面的整合。

## 单元

1 综合城市项目 A

2 综合城市项目 B

## 教学模式与方法

- 主题讲座
- 个人设计项目
- 小组合作

## 目标实践技能

- 能够与来自不同学科的人（经济学家、社会学家、行政部门等）的专业人员以及与行业进行沟通和协作

## 目标理论与思维能力

- 了解复杂的城市环境。
- 理解社会行为和建筑环境之间的相互关系。
- 了解规划工具。
- 在城市设计和规划中的参与性实践。

## 目标科学技能

- 对城市规划解决方案的关键性反思
- 能够对日益复杂的当代城市环境做出理论和实践上的反应

## 考核方式

中期评审

期末评审

## 单元 1 综合城市项目 A

(单元编号: BA AR 15.1)

### 师资配备

- 建筑师/城市居民
- 城市主义和流动性方面的专家
- 城市基础设施专家
- 熟悉深圳和周围的环境

### 内容

- 考虑区域规模(例如珠江三角洲)
- 在城市规模上的战略规划(例如深圳)
- 具有城市设计框架和战略干预的社区规模城市研究项目 (无经典总体规划)

### 教学模式

- 主题讲座
- 个人设计项目
- 小组合作

### 学习目标和能力培养

- 了解大型城市项目和城市设计项目的复杂性
- 不同领域和学科的整合
- 在一个项目中集成不同的规模 (方法和结果)
- 社会和空间方面的整合
- 了解深圳地区作为未来城市化的实验室的发展

### 单元总结和考核方式

中期评审

### 参考书目/文献

1. 城市设计, [美]埃德蒙.N.培根, 中国建筑工业出版社, 2003.
2. Urban Forms, Ivor Samuels / Phillippe Panerai / Jean Castex / Jean Charles Depaule, Routledge, 2004.
3. 城市和区域规划, [英]彼得·霍尔, 中国建筑工业出版社, 2008.

## 必要的基础设施和设备

- 学生工作空间
- 笔记本电脑

## 参考资料和网页链接

1 谷德设计网 <https://www.gooood.cn/>

2 <https://www.archdaily.cn/cn>

## 单元 2 综合城市项目 B

(单元编号: BA AR 15.2)

### 师资配备

- 建筑师/城市规划师
- 城市主义和流动性方面的专家
- 城市基础设施专家
- 熟悉深圳和周围环境

### 内容

- 考虑区域规模（例如，珠江三角洲）
- 在城市规模上的战略规划（例如，深圳）
- 具有城市设计框架和战略干预的社区尺度上的城市设计项目（无经典的总体规划）

### 教学模式

- 主题讲座
- 个人设计项目
- 小组合作

### 学习目标和能力培养

- 了解大型城市项目和城市设计项目的复杂性
- 不同领域和学科的整合
- 在一个项目中集成不同的规模（方法和结果）
- 社会和空间方面的整合
- 了解深圳地区作为未来城市化的实验室的发展

### 单元总结和考核方式

期末展示

### 参考书目/文献

1. 城市设计, [美]埃德蒙.N.培根, 中国建筑工业出版社, 2003.
2. Urban Forms, Ivor Samuels / Phillippe Panerai / Jean Castex / Jean Charles Depaule, Routledge, 2004.
3. 城市和区域规划, [英]彼得·霍尔, 中国建筑工业出版社, 2008.

## 必要的基础设施和设备

- 学生工作区
- 笔记本电脑
- 软件：图形、音频、视觉、文本、编程制作

## 参考资料和网页链接

1 谷德设计网 <https://www.gooood.cn/>

2 <https://www.archdaily.cn/cn>



# Architecture Culture VI

**Course Code:** SDAT3010

**Course Name:** Architecture Culture VI

**Credit points:** ECTS: 6 Chinese: 4

**Subjects related:** Architecture

**Pre-requirement for the Course:** Architecture Culture V

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

This course takes the form of several projects, combined with domestic and international numerous urban architectural culture, introduce cultural studies and the theory of global ecology and economics, etc, to make the students fully understand the cultural characteristics of city and architecture at home and abroad, to understand how social organization and culture affect building design. In addition, through the introduction of the development of global ecology and economics and the trend, make the students understand the global economic cycle and ecological cycle, understand the geopolitical forces how to influence the architectural design, in order to improve the comprehensive quality of building college undergraduates, improving knowledge structure, broaden the international field of vision.

## Main teaching materials

- 1 Architecture: A Very Short Introduction, Andrew Ballantyne, 2007.
- 2 Studies of global ecological Governance and ecological economy, Zhang Weiguo, China Social Sciences Press, 2016.

## Reference

- 1 Studies of architecture & culture (volume 1): Ding Wowo, Hu Heng, Central Compilation & Translation Press, 2009.
- 2 Studies of architecture & culture (volume 9): history and critique, Hu Heng, Tongji University Press, 2019.
- 3 The origins of the modern world: A Global and Environmental Narrative from the

Fifteenth to the Twenty-first Century, Robert B. Marks, Rowman & Littlefield Publishers, 2015.

4 Global political economy: Understanding the International Economic Order, Robert Gilpin, Jean M. Gilpin, Princeton University Press, 2001.

## **Learning objectives/aims and competencies**

- Global influences shaping architectural design
- Broad understanding of cultural differences

## **Units**

- 1 Cultural Studies II
- 2 Global Ecology and Economics II

## **Teaching and learning methods and formats**

- Lectures
- Workshop

## **Envisaged practical skills**

- Ability to define suitable presentation techniques based on task and references

## **Envisaged theoretical and reflective skills**

- Ability to reflect and explain cultural aspects of architecture
- Understanding of abstract cultural codes shaping buildings

## **Envisaged scientific skills**

- Understanding and processing of scientific knowledge from other disciplines
- Writing following scientific rules

## **Course conclusion and proof of performance**

Presentation

## **Unit 1: Cultural Studies II**

(code: BA AR 16.1)

### **Profile of lecturer(s)**

- Expert in social sciences and cultural studies
- Expert in architectural history and theory
- Interdisciplinary Research & Theory background

### **Content**

This course examines how the organisation of society influences architectural design. The scale of research ranges from studies drawn from vernacular forms in so-called primitive societies as well as from advanced civilisations from all parts of the world. The comparison of vernacular forms and so-called high cultures is strongly emphasised. Cases can be drawn on a micro or a macro scale of architecture, on design related behaviour, ethnological, social or cultural studies related to space, urban and village planning and the like.

### **Teaching and learning methods and formats**

- Lectures & Inputs, guest lectures,
- Desk based research

### **Learning objectives/aims and competencies**

- Understanding the influence of ideas about politics on architecture
- Understanding different approaches around the world

### **Unit conclusion and proof of performance**

- Full attendance
- In class assignments
- Documentation
- Final Presentation

### **Bibliography / literature**

Architecture: A Very Short Introduction, Andrew Ballantyne, 2007.

## **Necessary infrastructure and equipment**

Access to library and international web data base

Laptop

## **References and web links**

1 Studies of architecture & culture (volume 1): Ding Wowo, Hu Heng, Central Compilation & Translation Press, 2009.

2 Studies of architecture & culture (volume 9): history and critique, Hu Heng, Tongji University Press, 2019.

## Unit 2: Global Ecology and Economics II

(code: BA AR 16.2)

### Profile of lecturer(s)

- Expert in Economy and Ecology
- Expert in Global political questions
- Interdisciplinary Research & Theory background

### Content

Part 2

- Local, national, and global economic cycles
- Local, national, and global ecological cycles
- Interdependencies and conflicting factors
- Geo-political forces influencing architecture

### Teaching and learning methods and formats

- Lectures & Inputs, guest lectures,
- Desk based research

### Learning objectives/aims and competencies

- Identification of intervention scales (local, national, global)
- Introduction to fields of activity on global scale
- Develop rigorous and scientific research work
- Understanding of Policy making and its influence
- Critically reflect on the influence of global forces on architectural and urban planning

### Unit conclusion and proof of performance

- Full attendance
- In class assignments
- Documentation
- Final Presentation

### Bibliography / literature

Studies of global ecological Governance and ecological economy, Zhang Weiguo, China

Social Sciences Press, 2016.

### **Necessary infrastructure and equipment**

Library and Access to global information

Laptop

### **References and web links**

1 The origins of the modern world: A Global and Environmental Narrative from the Fifteenth to the Twenty-first Century, Robert B. Marks, Rowman & Littlefield Publishers, 2015.

2 Global political economy: Understanding the International Economic Order, Robert Gilpin, Jean M. Gilpin, Princeton University Press, 2001.

# 建筑文化 VI

课程代码: SDAT3010

课程名: 建筑文化 VI

学分: 欧方 6 学分 中方 4 学分

开设专业: 建筑学

先修课程: 建筑文化 V

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程采用若干专题的形式, 结合国内外众多城市的建筑文化案例, 介绍文化研究与全球生态与经济学等方面的相关理论, 使学生充分了解国内外城市和建筑的文化特色, 理解社会组织和文化传统如何影响建筑设计。与此同时, 通过介绍全球生态与经济学的发展脉络与趋势, 使学生了解全球经济周期和生态循环规律, 理解地缘政治力量如何影响建筑设计, 提高建筑学院本科生的综合素质、改善知识结构、拓宽国际视野。

## 主要参考教材

- 1 建筑与文化, 安德鲁·巴兰坦, 外语教学与研究出版社, 2007.
- 2 全球生态治理与生态经济研究, 张卫国、于法稳, 中国社会科学出版社, 2016.

## 参考文献

- 1 建筑文化研究 (第 1 辑), 丁沃沃, 胡恒, 中央编译出版社, 2009.
- 2 建筑文化研究 (第 9 辑): 历史与批判, 胡恒, 同济大学出版社, 2009.
- 3 现代世界的起源: 全球的、生态的述说, 罗伯特·B.马克思, 商务印书馆, 2006.
- 4 全球政治经济学, [美] 罗伯特·吉尔平, 上海人民出版社, 2006.



## 课程培养目标与能力

- 塑造建筑设计的全球影响。
- 对文化差异的广泛理解。

## 单元

1 文化研究 II

2 全球生态与经济学 II

## 教学模式与方法

- 讲座
- 工作坊

## 目标实践技能

根据任务和参考材料进行汇报展示

## 目标理论与思维能力

- 能够反映和解释建筑文化的能力。
- 理解塑造建筑的抽象文化规范。

## 目标科学技能

- 理解和运用其他学科的科学知识
- 掌握科学写作规则

## 考核方式

展示汇报。

## 单元 1 文化研究 II

(单元编号: BA AR 16.1)

### 师资配备

- 社会科学和文化研究方面的专家
- 建筑历史和理论专家
- 跨学科研究与理论背景

### 内容

- 本课程探讨社会组织如何影响建筑设计。
- 研究的范围包括从所谓的原始社会方言形式以及来自世界各地的先进文明中获得的研究。人们强烈强调了对方言形式和所谓的高雅文化的比较。案例可以基于建筑的微观或宏观尺度，包括与设计相关的行为、空间、城市和乡村规划等相关的民族学、社会或文化研究。

### 教学模式

- 讲座和理论灌输、客座讲座
- 案头研究

### 学习目标和能力培养

- 理解政治观念对建筑的影响
- 了解世界各地的不同方法

### 单元总结和考核方式

- 课堂出勤
- 课堂任务
- 文档记录
- 期末展示

### 参考书目/文献

建筑与文化, 安德鲁·巴兰坦, 外语教学与研究出版社, 2007.

### 必要的基础设施和设备

- 图书馆及国际网络资源
- 笔记本电脑

### 参考资料和网页链接

- 1 建筑文化研究（第 1 辑），丁沃沃，胡恒，中央编译出版社，2009.
- 2 建筑文化研究（第 9 辑）：历史与批判，胡恒，同济大学出版社，2009.

## 单元 2 全球生态学与经济学 II

(单元编号: BA AR 16.2)

### 师资配备

- 经济和生态学方面的专家
- 全球政治问题方面的专家
- 跨学科研究与理论背景

### 内容

- 地方、国家和全球经济周期。
- 地方、国家和全球生态循环。
- 相互依赖和冲突因素。
- 影响建筑的地缘政治力量。

### 教学模式

- 讲座和理论灌输、客座讲座
- 案头研究

### 学习目标和能力培养

- 确定干预规模（地方、国家、全球）。
- 介绍在全球范围内的活动领域
- 开展严谨、科学的科研工作
- 了解决策及其影响
- 批判性地反思了全球力量对建筑和城市规划的影响

### 单元总结和考核方式

- 课堂出勤
- 课堂任务
- 文档记录
- 期末展示

### 参考书目/文献

全球生态治理与生态经济研究，张卫国、于法稳，中国社会科学出版社，2016.

## **必要的基础设施和设备**

图书馆及国际资源

笔记本电脑

## **参考资料和网页链接**

- 1 现代世界的起源：全球的、生态的述说，罗伯特·B·马克斯，商务印书馆，2006.
- 2 The origins of the modern world: A Global and Environmental Narrative from the Fifteenth to the Twenty-first Century, Robert B. Marks, Rowman & Littlefield Publishers, 2015.
- 3 Global political economy: Understanding the International Economic Order, Robert Gilpin, Jean M. Gilpin, Princeton University Press, 2001.

# BA Project Preparation

## Learning objectives/aims and competencies

Ability to analyse, describe and to produce a thesis as a briefing for the final BA project

## Units

- 1 Research
- 2 Project Definition

## Teaching and learning methods and formats

- Workshop

## Envisaged practical skills

Formulation and illustration of a design thesis

## Envisaged theoretical and reflective skills

Definition of briefing for architectural design project based on research of a self-given topic

## Envisaged scientific skills

In-depth research of information

## Course conclusion and proof of performance

- Presentation and report

## Unit 1: Research

(code: BA AR 17.1)

### Profile of lecturer(s)

Thesis advisor – expert for topic or method chosen

### Content

- At the beginning on the year, the student and their mentors establish a 'roadmap' with milestones and checkpoints with clear objectives that include a literature review, background research and field studies. The research will become the foundation for the final BA project and will provide the necessary insights into the topic chosen.
- research of a self-given topic
- application of scientific methods
- accessing information

### Teaching and learning methods and formats

- Theoretical project

### Learning objectives/aims and competencies

- conduct of Scientific research
- Production of report
- Application of research for formulation of design briefing
- Illustration of briefing with diagrammatic illustrations

### Unit conclusion and proof of performance

- Documentation
- Final Presentation

### Bibliography / literature

Depending on topic

### Necessary infrastructure and equipment

Laptop

## **Unit 2: Project Definition**

(code: BA AR 17.2)

### **Profile of lecturer(s)**

- Thesis advisor – expert for topic or method chosen

### **Content**

Definition of an independent research topic as foundation for the brief of the final architectural design project

### **Teaching and learning methods and formats**

- Personal feedback, mentoring at regular intervals (suggested every 2 weeks)

### **Learning objectives/aims and competencies**

- Ability to present a research topic in writing and graphically
- Documentation of research with a research paper / report as finalisation of a written section for the Master Thesis project

### **Unit conclusion and proof of performance**

Report

### **Bibliography / literature**

Provided by mentor

### **Necessary infrastructure and equipment**

Laptop



# 本科项目准备

## 课程培养目标与能力

能够分析、描述和撰写论文，作为最终文学学士项目的简报

## 单元

1 研究

2 项目定义

## 教学模式与方法

工作坊

## 目标实践技能

一篇设计论文的制定和说明

## 目标理论与思维能力

基于自给课题研究的建筑设计项目简报定义

## 目标科学技能

信息深入研究

## 考核方式

展示及报告

## 单元 1 研究

(单元编号: BA AR 17.1)

### 师资配备

论文顾问-针对所选择的主题或方法的专家

### 内容

- 在一年开始，学生和他们的导师建立了一个有里程碑和检查点的“路线图”，有明确的目标，包括文献综述、背景研究和实地研究。该研究将成为最终的文学学士项目的基础，并将为所选择的主题提供必要见解。
- 研究一个自我给定的主题
- 科学方法的应用
- 访问信息

### 教学模式

- 理论项目

### 学习目标和能力培养

- 科学研究行为
- 报告的制作
- 研究在设计简报制定中的应用
- 用图解说明的简报说明

### 单元总结和考核方式

文档记录

期末展示

### 参考书目/文献

取决于主题

### 必要的基础设施和设备

- 笔记本电脑

## 单元 2 项目定义

(单元编号: BA AR 17.2)

### 师资配备

- 论文顾问-针对所选择的主题或方法的专家

### 内容

定义一个独立的研究课题，作为最终建筑设计项目简介的基础

### 教学模式

- 个人反馈，定期指导（建议每两周进行一次）

### 学习目标和能力培养

- 以写作和图形化的方式呈现一个研究主题的能力
- 带有研究论文/报告的研究文档，作为硕士论文项目的书面部分定稿

### • 单元总结和考核方式

- 报告

### 参考书目/文献

由导师提供

### 必要的基础设施和设备

笔记本电脑

# Architecture Culture VII

**Course Code:** SDAT3012

**Course Name:** Architecture Culture VII

**Credit points:** ECTS: 4 Chinese: 2

**Subjects related:** Architecture

**Pre-requirement for the Course:** Architecture Culture VI

**Faculty or Department:** SISD

**Mandatory or elective:** Mandatory

**Teachers in charge of the Course:**

## Course Description (about 200 words)

The course consists of two main units, advanced media and science writing. The high-end media unit mainly introduces the basic principles of virtual space system design and film production, so that students can understand the technical process of presenting architectural space through VR and AR models, and get familiar with the software and related skills of game development and film production. By guiding graduate students to understand the technicality, creativity and scientificity of architectural scientific paper writing, the scientific writing unit enables graduate students to understand the writing process of scientific paper and learn the abstract, introduction, research method, research content, conclusion, specific writing method of reference and problems needing attention of scientific paper.

## Main teaching materials

- 1 Rossiter. Advanced Media Planning[M]. Springer US, 1998.
- 2 Wallis F . Scientific Writing[M]. American Cancer Society, 2017.

## Reference

- 1 Zyda M . From visual simulation to virtual reality to games[J]. Computer, 2005, 38(9):25-32.
- 2 Zyda M, Games T. Simulation to Virtual Reality. 2013.

- 3 Zhu N, Yue Z. Appliance of Virtual Reality in Architecture Design[J]. Journal of Beijing University of Civil Engineering and Architecture, 2008.
- 4 Peat J K, Ebrary I. Scientific Writing: Easy When You Know How[J]. Australasian Journal of Dermatology, 2010, 49(1):63-63.
- 5 Phadtare A, Bahmani A, Shah A, et al. Scientific writing: a randomized controlled trial comparing standard and on-line instruction[J]. BMC Medical Education, 2009, 9(1):1-9.

## **Learning objectives/aims and competencies**

- Techniques supporting the presentation of final BA project:
- Basic principles of scientific writing
- Introduction to VR / AR / movie making to present projects

## **Units**

1 Advanced Media

2 Scientific Writing

## **Teaching and learning methods and formats**

- Lectures
- Workshop

## **Envisaged practical skills**

ability to represent a project using cinematographic or VR techniques

## **Envisaged theoretical and reflective skills**

ability to combine scientific and multi-media skills to represent an architectural design

## **Envisaged scientific skills**

- Develop rigorous and scientific research work
- writing following scientific rules i.e.correct scientific citation

## **Course conclusion and proof of performance**

- Presentations
- Design exercises

## Unit 1: Advanced Media

(code: BA AR 18.1)

### Profile of lecturer(s)

- Experts in theory and history of architecture and digital technologies
- Familiar with application of Digital, Parametric or Artificially Intelligent Architecture
- Experience in film making and VR/AR

### Content

- Design of virtual spatial systems
- Introduction to 4-dimensional digital design techniques
- Developing VR and AR models to present an architectural space
- Techniques to present projects in movies
- Introduction to Software used to develop games (Unity or Unreal Engine)
- Introduction to AI / Self-learning systems and their application in architecture

### Teaching and learning methods and formats

- Lectures
- Workshop

### Learning objectives/aims and competencies

- Develop novel architectural complex design solutions
- Ability to design using advanced computer aided design (CAD) tools
- ability to represent a design concept with the use of VR-technology
- ability to import 3d design models into VR environment
- coding

### Unit conclusion and proof of performance

- Full attendance
- In class assignments
- Documentation
- Final Presentation

### Bibliography / literature

Rossiter. Advanced Media Planning[M]. Springer US, 1998.

## **Necessary infrastructure and equipment**

- -Presentation space
- -Computer Lab with VR glasses, AR glasses (i.e., HoloLens II)
- -Software Unity / Unrea

## **References and web links**

- 1 Zyda M . From visual simulation to virtual reality to games[J]. Computer, 2005, 38(9):25-32.
- 2 Zyda M, Games T. Simulation to Virtual Reality. 2013.
- 3 Zhu N, Yue Z. Appliance of Virtual Reality in Architecture Design[J]. Journal of Beijing University of Civil Engineering and Architecture, 2008.



## **Unit 2: Scientific Writing**

(code: BA AR 18.2)

### **Profile of lecturer(s)**

- Experts in theory and history of architecture
- Interdisciplinary Research & Theory background

### **Content**

This course continues the architecture Theory courses with special attention to the quality of scientific writing suitable for publications and research papers.

Introduction to scientific writing

using creative and scientific methods to write about architecture

Transferring research results into theory

Evaluation of concepts on a theoretical basis

### **Teaching and learning methods and formats**

- Lectures
- Workshop

### **Learning objectives/aims and competencies**

- Ability to plan, direct and disseminate research, and the ability to write documents, articles or other, for presentations at conferences or publications.
- ability to summarise research in a document
- formulation of scientific questions
- scientific working methods
- Ability to analyse and synthesize
- Ability to generate new ideas (creativity)
- Ability to be critical and self-critical

### **Unit conclusion and proof of performance**

-Documentation

-Presentation

-Written Paper on architectural topic

## **Bibliography / literature**

Wallis F . Scientific Writing[M]. American Cancer Society, 2017.

## **Necessary infrastructure and equipment**

Access to library and internet archives

Laptop

## **References and web links**

1 Peat J K, Ebrary I. Scientific Writing: Easy When You Know How[J]. Australasian Journal of Dermatology, 2010, 49(1):63-63.

2 Phadtare A, Bahmani A, Shah A, et al. Scientific writing: a randomized controlled trial comparing standard and on-line instruction[J]. BMC Medical Education, 2009, 9(1):1-9.

# 建筑文化 VII

课程代码: SDAT3012

课程名: 建筑文化 VII

学分: 欧方 6 学分 中方 3 学分

开设专业: 建筑学

先修课程: 建筑文化 VI

负责院系: SISD

必修或选修: 必修

负责教师:

## 课程描述 (约 200 字)

课程包括先进媒体技术和科学写作两个主要单元。新媒体单元主要通过介绍虚拟空间系统设计和电影制作的基本原理,使学生了解通过 VR 和 AR 模型来呈现建筑空间的技术流程,熟悉游戏开发和电影制作的软件和相关技巧。科学写作单元通过引导学生认识建筑学科技论文写作的学术性、创造性和科学性,让学生了解科技论文的写作过程,学习科技论文摘要、引言、研究方法、研究内容、结论、参考文献的具体写作方法和需要注意的问题。

## 主要参考教材

- 1 Rossiter. Advanced Media Planning[M]. Springer US, 1998.
- 2 Wallis F . Scientific Writing[M]. American Cancer Society, 2017.
- 3 [美]黛博拉·布卢姆等编;李红林,刘曙辉译. 科学写作指南[M]. 科学出版社. 2021

## 参考文献

- 1 Zyda M . From visual simulation to virtual reality to games[J]. Computer, 2005, 38(9):25-32.
- 2 Zyda M, Games T. Simulation to Virtual Reality. 2013.
- 3 Zhu N, Yue Z. Appliance of Virtual Reality in Architecture Design[J]. Journal of Beijing University of Civil Engineering and Architecture, 2008.
- 4 Peat J K, Ebrary I. Scientific Writing: Easy When You Know How[J]. Australasian Journal of Dermatology, 2010, 49(1):63-63.
- 5 Phadtare A, Bahmani A, Shah A, et al. Scientific writing: a randomized controlled trial comparing standard and on-line instruction[J]. BMC Medical Education, 2009, 9(1):1-9.

## 课程培养目标与能力

支持最终毕业设计演示的技术：

- 科学写作的基本原则。
- 介绍虚拟现实/增强现实技术/电影制作。

## 单元

1 先进媒体技术

2 科学写作

## 教学模式与方法

- 讲座
- 研讨会

## 目标实践技能

使用电影或 VR 技术表达项目的能力。

## 目标理论与思维能力

能够结合科学和多媒体技能来代表建筑设计的能力。

## 目标科学技能

- 开展严谨和科学的研究工作
- 遵循科学规则即正确的科学引用

## 考核方式

- 课程设计演讲与展示
- 设计实践

## 单元 1 先进媒体技术

(单元编号: BA AR 18.1)

### 师资配备

- 建筑 and 数字技术的理论和历史专家
- 熟悉数字、参数化或人工智能架构的应用
- 有电影制作和虚拟现实/增强现实技术方面的经验

### 内容

- 虚拟空间系统的设计
- 四维数字设计技术介绍
- 开发 VR 和 AR 模型来呈现一个建筑空间
- 在电影中呈现项目的技巧
- 介绍用于开发游戏的软件（统一或虚幻引擎）
- 人工智能/自学系统及其在架构中的应用

### 教学模式

- 讲座
- 专题讨论会

### 学习目标和能力培养

- 开发新的建筑复杂设计解决方案
- 能够使用先进的计算机辅助设计(CAD)工具进行设计
- 能够通过使用虚拟现实技术来代表一个设计概念
- 能够将三维设计模型导入到 VR 环境中
- 编码

### 单元总结和考核方式

- 课堂出勤
- 课堂任务
- 文档记录
- 期末展示

### 参考书目/文献

1 宋晓宇, 颜勤. VR 虚拟现实 建筑设计空间认知迭代. 机械工业出版社. 2019.

2 Rossiter. Advanced Media Planning[M]. Springer US, 1998.

### **必要的基础设施和设备**

- 演示空间
- 电脑实验室，配备虚拟现实眼镜、增强现实眼镜(即全息透镜 II)
- 软件 Unity/Unrea

### **参考资料和网页链接**

1 Zyda M . From visual simulation to virtual reality to games[J]. Computer, 2005, 38(9):25-32.

2 Zyda M, Games T. Simulation to Virtual Reality. 2013.

3 Zhu N, Yue Z. Appliance of Virtual Reality in Architecture Design[J]. Journal of Beijing University of Civil Engineering and Architecture, 2008.

## 单元 2 科学写作

(单元编号: BA AR 18.2)

### 师资配备

- 建筑理论和历史方面的专家
- 跨学科研究与理论背景

### 内容

- 本课程继续建筑理论课程，特别注意适合发表和研究论文的科学写作质量
- 科学写作导论
- 使用创造性和科学的方法来写建筑学
- 将研究成果转化为理论
- 在理论上评价概念

### 教学模式

- 讲座
- 研讨会

### 学习目标和能力培养

- 有计划、指导和传播研究的能力，以及在会议或出版物上发表演讲而撰写文件、文章或其他内容的能力
- 在文档中总结研究的能力
- 制定科学问题
- 科学工作方法
- 有分析和综合的能力
- 产生新想法的能力（创造力）
- 具有批判性和自我批判性的能力
- **单元总结和考核方式**
- 文档记录
- 展示
- 论文

### 参考书目/文献

1 Wallis F . Scientific Writing[M]. American Cancer Society, 2017.

2 [美]黛博拉·布卢姆等编,李红林,刘曙辉译. 科学写作指南[M]. 科学出版社. 2021

## **必要的基础设施和设备**

图书馆及网络资源

笔记本电脑

## **参考资料和网页链接**

1 Peat J K, Ebrary I. Scientific Writing: Easy When You Know How[J]. Australasian Journal of Dermatology, 2010, 49(1):63-63.

2 Phadtare A, Bahmani A, Shah A, et al. Scientific writing: a randomized controlled trial comparing standard and on-line instruction[J]. BMC Medical Education, 2009, 9(1):1-9.



# BA Project

## Learning objectives/aims and competencies

- Integrating complex challenges and emerging technologies in an architectural project
- Using relevant design processes
- Applying methods and tools learned during seminars and studios from year 1 according to topic chosen
- ability to apply architectural design skills and knowledge in a final project based on the BA thesis
- presentation of project
- definition of a presentation narrative
- selection of presentation material and techniques (i.e., physical model or virtual / digital representation)

## Units

- 1 Design Project
- 2 Project Documentation
- 3 Project Presentation

## Teaching and learning methods and formats

- Individual coaching

## Envisaged practical skills

- Exploring urban design solutions by using creative and scientific methods
- Ability to undertake urban projects that guarantee sustainable development following environmental, social, cultural and economic principles
- High developed practical design skills
- High developed skills for presentation including drafting, rendering, model building techniques
- Management and organization

## Envisaged theoretical and reflective skills

- narrative for presentation

- answers art Q&A session

### **Course conclusion and proof of performance**

- Final presentation to Examining Board

## **Unit 1: Design Project**

(code: BA AR 19.1)

### **Profile of lecturer(s)**

- Group of Experts from the BA teaching staff
- Familiar with BA thesis project and its field

### **Content**

- Development of BA project

### **Teaching and learning methods and formats**

- Individual design crits by mentors

### **Learning objectives/aims and competencies**

- Application of knowledge acquired during entire BA study for architectural design project

### **Necessary infrastructure and equipment**

Use of all university facilities

Work space at university

Laptop

## **Unit 2: Project Documentation**

(code: BA AR 19.2)

### **Content**

- Documentation of design work done for final project

### **Learning objectives/aims and competencies**

- Ability to select documentation method
- Design of presentation materials

### **Unit conclusion and proof of performance**

Documentation of BA design project including written BA thesis

### **Necessary infrastructure and equipment**

Workshops

Laptop

## **Unit 3: Project Presentation**

(code: BA AR 19.3)

### **Content**

- Definition of narrative for final presentation
- Presentation

### **Learning objectives/aims and competencies**

- Ability to present project in front of larger audience
- Development of adequate presentation set up and techniques
- Ability to summarize complex design project

### **Unit conclusion and proof of performance**

Two colloquium Presentations

Final Presentation

### **Necessary infrastructure and equipment**

Laptop

# 本科项目展示

## 课程培养目标与能力

- 在一个体系结构项目中集成复杂的挑战和新兴的技术
- 使用相关设计流程
- 根据选择的主题应用在研讨会和工作室学到的方法和工具
- 在基于文学学士论文的期末项目中运用建筑设计技能和知识的能力
- 项目介绍
- 演示叙述的定义
- 演示材料和技术的选择（即，物理模型或虚拟/数字表示）

## 单元

- 1 设计项目
- 2 项目文件
- 3 项目展示

## 教学模式与方法

个人指导

## 目标实践技能

- 利用创造性和科学的方法探索城市设计解决方案
- 能够按照环境、社会、文化和经济原则开展保证可持续发展的城市项目
- 高发展的实用设计技能
- 高发展的演示技能，包括绘图、渲染、模型构建技术
- 管理和组织

## 目标理论与思维能力

展示中陈述的能力  
回答问题的能力

## 目标科学技能

向审查委员会进行期末展示

## 单元 1 设计项目

(单元编号: BA AR 17.1)

### 师资配备

- 来自文学学士教师的专家组
- 熟悉文学学士论文项目及其领域

### 内容

- 学士项目的发展

### 教学模式

- 导师指导的个人设计

### 学习目标和能力培养

- 在建筑设计项目中的知识应用

### 必要的基础设施和设备

- 使用所有的大学设施
- 大学工作空间
- 笔记本电脑

## 单元 2 项目文件

- (单元编号: BA AR 19.2)

### 内容

最终项目的设计工作文件

### 学习目标和能力培养

- 能够选择文档编制方法
- 演示材料设计
- **单元总结和考核方式**
- 学士设计项目文件，包括论文

### 必要的基础设施和设备

工作坊

笔记本电脑



## 单元 3 项目展示

(单元编号: BA AR 19.3)

### 内容

对最终陈述的叙述的定义  
展示

### 学习目标和能力培养

- 能够在更多的观众面前展示项目
- 发展适当的演示文稿设置和技术
- 能够总结出复杂的设计项目
  
- **单元总结和考核方式**
- 两个讨论会演讲
- 期末展示

### 必要的基础设施和设备

笔记本电脑