西安交通大学《设计实践-1》课程教学大纲

一、课程基本信息

I. Basic Information

课程名称 Course Title	设计实践-1 Project Work -1		
课程编号 Course Number			
课程学分 Credits	2	总学时 Credit Hours	64
学时分配 Assignment of Credit Hours	理论:____ 实验:__64__ 上机:____ 课外:____ （课外学时不计入总学时） Lecture:___ Studio:_64___ Practice in the IT room: Extracurricular:_0___ (Extracurricular hours do not count towards the total number of hours.)		
课程类型	□公共课程 Public Course □通识课程 General Education Course □学科门类基础课 □专业大类基础课 □专业核心课 Specialized Core Course □专业选修课 Specialized Elective Course √集中实践 Intensive Practice		
开课学期	□1-1 □1-2 √2-1 □2-2 □3-1 □3-2 □4-1 □4-2 □5-1 □5-2		
先修课程	Proficiency of English language. Basic		

Prerequisites	knowledge of design practice. Awareness or minimal understanding of collateral disciplines as marketing, economics, art, science, communication, project management, multidisciplinary studies. Attitude for creativity, improvisation, entrepreneurship, critical spirit and happiness.
教材、参考书及其他资料 Materials (Textbook, Bibliography or Referencing and Supplementary Materials)	VERGANTI R, Design-driven innovation. Cambiare le regole della competizione innovando radicalmente il significato dei prodotti e dei servizi. Milano: Rizzoli Libri S.p.a., 2009.

二、课程目标及学生应达到的能力

II. Course Objectives and Expected learning outcomes

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

1. Approach to Design thinking

2. Acquisition of specific methodology and skills

3. Practice of Innovation and Interdisciplinary process

4. Use of verbal and graphic Communication of Ideas

5. Project development team-work

课程目标与专业毕业要求的关联关系

Correlation between course objectives and graduation requirements for the program

毕业要求：

Students of this program should meet the following graduation requirements:

A. Master extensive theories on engineering and technology, humanities, social sciences, natural sciences, etc., demonstrate high scientific literacy, strong humanistic and artistic dispositions, and physical and mental well-being;

B. Have solid theoretical knowledge of industrial design, and master the knowledge related to product and its development, design, aesthetics, engineering, technology, management, planning, teamwork, professional ethics, etc.;

C. Master methods and skills of industrial design and related fields, be able to apply multidisciplinary knowledge into reality, and have strong expression, creation, practical, problem analysis and solving skills in the

field of design;

D. Have good communication skills, teamwork spirit, a strong sense of social responsibility, and international vision, and be capable of applying interdisciplinary knowledge in pioneering work.

毕业要求 / 课程目标	A	B	C	D
1	H	H	M	M
2	L	H	H	H
3	H	H	H	L
4	L	M	H	H
5	L	M	H	H

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

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

三、教学内容简介

III. Description of teaching contents

章节顺序	章节名称	知识点	参考学

	Chapter Title	Teaching Points	时 Credit Hours
1	Introduction	• Design practice overall view, • Lab Mode, • Team work, • Course/project structure	4
2	Data collection	• Research & Analysis • Project requirements • Target definition • Briefing, Concept, GANTT	4
3	Ideas production	• Problem solving • Design thinking • Creativity and tools • Practice in place	4
4	Market	• Business opportunities • Market positioning • SWOT • Historic background	4
5	Product definition	• Product identity, brand values • Cultural background • Briefing	4

		• Moodboard	
6	Concept definition	• Alternative proposals • Evaluation and selection • Potential user, persona • Profitability, Break Even Point • Patents	4
7	Product development	• Ergonomy and antropometry • Product architecture • Strategic design, coherence • Package drawing	4
8	Preliminary engineering	• Setting study • Bill of materials/components • Production technologies • Make or buy, carryover	4
9	Envisioning	• Decisional design process • Progressive approximation • Early sketches • Arm use, perspective, colors	4
10	Sequence of representations	• Project as sequence • Mental configuration • 2D representations • 3D representations	4

		• Virtual representations4	
11	Modelling	• 3D physical models • Virtual models • Model construction accuracy	4
12	Project practice	• Execution of sketches • Orthogonal views	4
13	Moke up	• Moke up building	4
14	Proposal finalization	• Final solution selection • Refinement and details • Examples of final presentation	4
15	Virtual model	• Virtual model execution	4
16	Set-up presentation	• Requirements • Graphics and layout • Verbal support • Psychology of communication	4

四、教学安排详表

IV. Teaching Arrangements

序号	**教学内容** Teaching contents	**学 时分配** Credit Hours	**教学方式** Teaching Methods	**教学要求（知识要求及能力要求）** Learning Objectives (knowledge objective & ability objective)	**对课程目标的支撑关系** Related to which Course Objective

1	1	4	Lecture	**Design practice, project planning**	All
2	2	4	Lecture & Practice	Research methodology, data analysis, Briefing, Concept, GANTT	All
	3	4	Lecture & Practice	Design Thinking procedures, ideas production, creativity tools	All
	4	4	Lecture & Practice	Business opportunity, Market positioning, SWOT	All
	5	4	Lecture & Practice	Product identity, brand values, Briefing, Moodboard	All
	6	4	Lecture & Practice	Definition of final user. Profitability, Break Even Point, Patents	All
	7	4	Lecture & Practice	Elements od Strategic Design, Ergonomy, Design for all, and practice of Package drawing	All
	8	4	Lecture & Practice	Components definition, production technologies, carryover	All
	9	4	Lecture & Practice	Overall Design process, Manual Sketching techniques	All
	10	4	Lecture & Practice	2D, 3D and virtual representations of ideas	All
	11	4	Lecture & Practice	3D physical model construction, virtual model approach	All
	12	4	Lecture & Practice	Sketches and orthogonal views	All
	13	4	Practice	Moke-up building	All
	14	4	Lecture & Practice	Final project presentation	All

	15	4	Practice	Virtual model execution	All
	16	4	Tutorial & Practice	Presentation set up	All

注：对课程目标的支撑关系可填写大纲中第二部分课程目标的相应序号。

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

五、实践环节

V. Studio/Lab

实验编号 No.	实验名称 Subject Name	实验内容 Contents	教学方法 Teaching Methods	**对课程目标的支撑关系** Related to which Course Objective
2	Research methodology, data analysis, Briefing, Concept, GANTT	execution	tutorial	All
3	Design Thinking procedures, ideas production, creativity tools	execution	tutorial	All
4	Business opportunity, Market positioning, SWOT	execution	tutorial	All
5	Product identity, brand values, Briefing, Moodboard	execution	tutorial	All
6	Definition of final user. Profitability, Break Even Point, Patents	execution	tutorial	All
7	Ergonomy, Design for all, and practice of Package drawing	execution	tutorial	All
8	Components definition, production technologies, carryover	execution	tutorial	All
9	Overall Design process, Manual Sketching techniques	execution	tutorial	All
10	2D, 3D and virtual representations of ideas	execution	tutorial	All

11	3D physical model construction, virtual model approach	execution	tutorial	All
12	Sketches and orthogonal views	execution	tutorial	All
13	Moke-up building	execution	tutorial	All
14	Final project presentation	execution	tutorial	All
15	Virtual model execution	execution	tutorial	All
16	Presentation set up	execution	tutorial	All

注：对课程目标的支撑关系可填写大纲中第二部分课程目标的相应序号

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

六、课外学时分配

VI. Extracurricular Practice

章节顺序	内容 Contents	参考学时 Credit Hours	**对课程目标的支撑关系** Related to which Course Objective
1			
2			
…			

注：对课程目标的支撑关系可填写大纲中第二部分课程目标的相应序号。

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

七、考核方式及成绩构成

VII. Evaluation and Composition of Grades

平时：10%，(包含：xxxx)

实验（上机)：40%；(包含：xxx)

期末：50%

e.g. 10% for usual performance (including xxxx),

40% for mid-term examinations (including xxxx)

and 50% for final examinations.

<本部分构成及考试方式可根据具体课程定制> Depending on the course

大纲制定者：× × ×

大纲审核者：× × ×

最后修订时间：_____年___月___日