Product Design

(Grade 2024)

Course code: 130504

I. Cultivation Objectives

1. General cultivation objective

This major emphasizes project training in design thinking, design methods, and design applications. It aims to cultivate innovative, interdisciplinary, and application-oriented design talents who can meet the needs of social development in the new era, as well as the development of manufacturing and creative industries. These talents will systematically master the application of advanced professional theories and methods in product design, grasp manufacturing processes and engineering knowledge, and proficiently use technical tools for product design expression. They will possess an international professional perspective, pioneering spirit, modern aesthetic awareness, keen market insight, and the ability to implement design applications. Graduates can engage in new product planning, design, management and other work in design institutions, enterprise R&D departments and other related fields.

2. Objective of value guidance

Based on its own characteristics, the program takes “constantly meeting the growing needs of the people for a better life” as its mission and promotes the values of “truth”, “goodness” and “beauty”. The program insists on leading professional education with core values of socialism, in order to guide students to be diligent in learning, cultivate morality, distinguish right from wrong, be innovative and pragmatic, and to cultivate socialist builders and successors with a broad international perspective, profound national sentiment, high national humanity, strong social responsibility, excellent professional skills and comprehensive development of moral, intellectual, physical, social and aesthetic skills, and to strive to promote the “transformation from Made in China to Created in China”, “China’s Speed to China’s Quality” and “Large Manufacturing Country to Strong Manufacturing Country”.

3. Five years after graduation, students in this program should achieve the following objectives:

Five years after graduation, students will be able to adapt to the needs of a new era of social development, and will have the ability to apply design thinking to “problem solving” as well as a certain level of aesthetic sophistication.

II. Graduation requirements

1. First-Level and Second-Level Graduation Requirements Indicators

No.	Graduation Requirements	Content of Graduation Indicators
1	Moral Cultivation	1-1 Possess a certain sense of social responsibility and mission, and strive to contribute to “transforming Made in China into Created in China, transforming Chinese speed into Chinese quality, and transforming China from a manufacturing power into a manufacturing strong power”.
		1-2 Possess a certain level of aesthetic accomplishment, establish cultural confidence, and strive to inherit and develop excellent Chinese culture to promote cultural prosperity.
		1-3 Possess a certain spirit of craftsmanship and dedication, adhere to professional ethics, and strengthen awareness of integrity, public safety, environmental protection and intellectual property protection.

No.	Graduation Requirements	Content of Graduation Indicators
		1-4 Fully understand and actively practice core socialist values, and be able to put them into practice through design based on reality.
2	Disciplinary Knowledge	2-1 Establish a systematic understanding of product design and master the general procedures and methods of product design.
		2-2 Master the basic theories and knowledge related to design thinking and design positioning in the product design process.
		2-3 Master the basic theories and knowledge related to design aesthetics and design communication in the product design process.
		2-4 Master the basic theories and knowledge related to the application of ergonomics, materials engineering and structural engineering in the product design process.
3	Innovation Ability	3-1 Be able to master certain design thinking and methods, and have the ability to carry out design innovation using creative thinking.
		3-2 Be able to grasp modeling elements such as form, proportion, color and material, and have a certain ability to innovate modeling styles.
		3-3 Be able to discover real user needs through research and have a certain ability in new product planning.
4	Application Ability	4-1 Under goal orientation, possess a certain ability to apply design research, and be able to discover, analyze, define problems and propose effective design solutions to solve them.
		4-2 Under goal orientation, possess a certain ability to apply digital technology, and be able to use advanced digital technology means to better promote the interactive communication, evaluation and verification, and production realization of design.
		4-3 Under goal orientation, have a certain comprehensive industrialized creative design ability and a systematic implementation and application ability from “creativity to commodity”.
5	Technical Literacy	5-1 Proficiency in 3D modeling and rendering technology for product design, and possess technical literacy in realizing image processing and 3D dynamic presentation.
		5-2 Be able to apply appropriate advanced technical means to realize product mapping, prototype production and comprehensive experience testing.
6	Expression and Communication	6-1 Master rapid expression methods for product design and possess a certain ability in creative expression.
		6-2 Have relatively mature commercial aesthetic expression and information communication capabilities.
7	Interdisciplinary Cooperation	7-1 Have good communication and expression skills and team cooperation ability.
		7-2 Have a good sense of collaborative innovation across disciplines and fields.
8	International Perspective	8-1 Pay attention to the international development trends and research hotspots in the field of design.
		8-2 Have an international perspective and cross-cultural communication ability, and understand and respect the differences and diversity of different cultures in the world.
9	Sustainable Development	9-1 Combine the needs of social development in the new era, and possess basic innovation and entrepreneurship literacy from “creativity” to “innovation” and then to “entrepreneurship”.
		9-2 Develop autonomous learning ability and lifelong learning awareness, and be able to adapt to the development needs of the new era in the field of design and related industries.

2. Service orientation

In order to meet the needs of social development in the new era and to meet the objectives of Shanghai’s “Five Centers” and “Four Brands” construction, the vocational positions for graduates of this major include

(1) Work in Product Design and R&D in various types of companies in China and abroad.

(2) Working in product planning, design or management in a front-line design company or agency.

(3) Interdisciplinary and cross-disciplinary work related to cultural and creative industries, Aesthetic Education, etc.

(4) Become an independent designer or joint venture.

III. Schooling System

Four years.

IV. Length of Study

Flexible study period, generally four years, the minimum length of flexibility is not less than three years, the longest not more than six years.

V. Requirements for Graduation and Degree Conferring

Students must complete the minimum number of credits required for each category of study in accordance with the requirements of the Instructive Cultivation Plan, and complete all the content required for the Extracurricular Class, with a total of 158 credits, in order to graduate; those who meet the requirements for the award of a Bachelor's degree will be awarded a Bachelor of Fine Arts.

VI. Discipline

Design (Design Art), Philosophy (Aesthetics), Psychology (Applied Psychology), Mechanical Engineering (Mechatronics Engineering).

VII. Core Courses

Introduction to Product Design, History of Product Design, Fundamentals of Design Representation, Design Composition (A), Design Composition (B), Creative Thinking in Design, 3D Modelling and Rendering of Products, Design and Production of Product Shapes (A), Design and Production of Product Shapes (B), Product Design Materials and Processes, Ergonomics, Product Design (A), Product Design (B), Product Design (C).

VIII. Course Structure and Course Hours (excluding Extracurricular Class)

Category	Total Credit	%	Total Course Hours	Theory Learning	Practical Training
Public Fundamental Course	39.5	25	768	678	90
General Education	10	6	160	160	0
Professional Fundamental Course	40	26	640	242	398
Professional Course	67.5	43	1280	308	972
Total	157	100	2848	1388	1460
Theory: Practical (%)	49 : 51				

IX. Teaching schedule (1)

Category	Type	Provided by	Course Code	Course Name	Assessment	Credit	Course Hours	Theory Learning	Practical Training	Recommended semester
Public Fundamental Course	required	School of Marxism	b1080001	Basic Principles of Marxism	test	3	48	42	6	Autumn 1
	required	School of Marxism	b1080009	Ethics and the Rule of Law	non-test	3	48	42	6	Autumn 1
	required	School of Marxism	b1080006	Outline of Modern Chinese History	non-test	3	48	42	6	Spring 1
	required	School of Marxism	b1080010	Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics	test	3	48	42	6	Autumn 2
	required	School of Marxism	b1080011	Introduxtion to Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era	test	3	48	42	6	Spring 2
	required	School of Marxism	-----	Situation and Policy (Modules 1 to 4)	non-test	2	32	28	4	Autumn 1 to Spring 2
	required	School of Marxism	b1080008	Labour Education A	non-test	0.5	16	16		Spring 1
	required	School of Foreign Languages and Cultural Communication	b1020018	Academic Chinese	non-test	2	32	32		Autumn 1
	required	College of Physical Education	-----	Physical Education I to VI	non-test	3	160	160		Autumn 1 to Autumn 4
	required	Others	b1110003	Military skills	non-test	0.5	2W			Autumn 1
	required	Others	b1110002	Military theory	non-test	0.5	32	32		Spring 1
	required	Engineering Training	b1090001	Basic Engineering Training	non-test	2	32		32	Autumn 1
	required	Others	b1110004	Mental Health Education for University Students	non-test	2	32	16	16	Spring 1
	required	School of Computer and Information Engineering	b1012001	Applications and Practice of Artificial Intelligence	non-test	1	16	8	8	Spring 1
	required	School of Resources and Environment	b1013002	Low-carbon and Ecological Civilization	non-test	1	16	16		Autumn 1
	★ Academic English(Select 1 Module for 10 Credits)	Module A	b1020003	General English III	test	3	48	48		Autumn 1
			b1020004	General English IV	test	3	48	48		Spring 1
			b1020005	General Academic English A	test	2	32	32		Autumn 2
			---	English Knowledge Expansion	non-test	2	32	32		Spring 2
		Module B	b1020002	General English II	test	3	48	48		Autumn 1
			b1020003	General English III	test	3	48	48		Spring 1
			b1020006	General Academic English B	test	2	32	32		Autumn 2
			---	English Knowledge Expansion	non-test	2	32	32		Spring 2
		Module C	b1020001	General English I	test	4	64	64		Autumn 1
			b1020002	General English II	test	3	48	48		Spring 1
			b1020003	General English III	test	3	48	48		Autumn 2
	★ Academic German	School of Foreign Languages and Cultural Communication	b1020040	Academic German I	test	3	48	48		Autumn 1
		School of Foreign Languages and Cultural Communication	b1020041	Academic German II	test	3	48	48		Spring 1
		School of Foreign Languages and Cultural Communication	b1020042	Academic German III	test	4	64	64		Autumn 2
	★ Academic Japanese	School of Foreign Languages and Cultural Communication	b1020077	Academic Japanese I	test	3	48	48		Autumn 1
		School of Foreign Languages and Cultural Communication	b1020078	Academic Japanese II	test	3	48	48		Spring 1
		School of Foreign Languages and	b1020079	Academic Japanese III	test	4	64	64		Autumn 2

Category	Type	Provided by	Course Code	Course Name	Assessment	Credit	Course Hours	Theory Learning	Practical Training	Recommended semester
		Cultural Communication								
Subtotal (Public Fundamental Course)						**39.5**	**768**	**678**	**90**	
General Education	selective	Art Education Center	b0-----	Aesthetic Education	non-test	2	32	32		Autumn, Spring
	selective	Each College	b0-----	Social Sciences and Humanistic Qualities	non-test	4	64	64		Autumn, Spring
				Natural Sciences and Technology Innovation	non-test	4	64	64		Autumn, Spring
Subtotal (General Education)						**10**	**160**	**160**		

(★Note: The first foreign language is 10 credits in total, including 3 languages: Academic English, Academic German and Academic Japanese, choose the appropriate language as required; When Academic English is chosen, please choose the appropriate module in Module A, B, C)

IX. Teaching schedule (2)

Category	Type	Provided by	Course Code	Ability Modules	Course Name	Assessment	Credit	Course Hours	Theory Learning	Practical Training	Recommended semester
Professional Fundamental Course	required	School of Applied Arts and Design	b2041213	Abilities of Design Theory and Research	Introduction to Product Design	test	1	16	12	4	Autumn 1
	required	School of Applied Arts and Design	b2041224		History of Product Design	test	1	16	12	4	Spring 1
	subtotal						**2**	**32**	**24**	**8**	
	required	School of Applied Arts and Design	b2041225	Abilities to apply digital technology	Product graphic image processing	test	3	48	18	30	Spring 1
	required	School of Applied Arts and Design	b2041226		Product 3D modelling and rendering	test	6	96	36	60	Autumn 2
	subtotal						**9**	**144**	**54**	**90**	
	required	School of Applied Arts and Design	b2041214	Abilities of Styling and Aesthetic	Fundamentals of Design Expression	test	4	64	16	48	Autumn 1
	required	School of Applied Arts and Design	b2041099		Design Composition (A)	test	3	48	12	36	Autumn 1
	required	School of Applied Arts and Design	b2041163		Design Composition (B)	test	3	48	12	36	Spring 1
	required	School of Applied Arts and Design	b2041164		Product Design and Production (A)	test	4	64	24	40	Autumn 2
	required	School of Applied Arts and Design	b2041237		Product Design and Production (B)	test	4	64	24	40	Spring 2
	subtotal						**18**	**288**	**88**	**200**	
	required	School of Applied Arts and Design	b2041257	Abilities of Creative thinking	Design Creative sketches	test	2	32	8	24	Autumn 1
	required	School of Applied Arts and Design	b2041227		Designing innovative thinking	test	3	48	24	24	Spring 1
	subtotal						**5**	**90**	**32**	**48**	
	required	School of Applied Arts and Design	b2041041	Abilities to express design	Product Photography	test	2	32	12	20	Spring 1
	required	School of Applied Arts and Design	b2041228		Layout	test	2	32	16	16	Autumn 2
	required	School of Applied Arts and Design	b2041229		Product visual messaging	test	2	32	16	16	Autumn 2
	Subtotal						**6**	**96**	**44**	**52**	
	Subtotal (Professional Fundamental Course)						**40**	**640**	**242**	**398**	

IX. Teaching schedule (3)

Category	Type	Provided by	Course Code	Ability Modules	Course Name	Assessment	Credit	Course Hours	Theory Learning	Practical Training	Recommended semester
Professional Course	required	School of Applied Arts and Design	b2041234	Abilities of Design Theory and Research	Ergonomics	test	4	64	32	32	Autumn 3
	required	School of Applied Arts and Design	b2041141		User research	test	2	32	16	16	Autumn 3
	required	School of Applied Arts and Design	b2041118		Market Research	test	2	32	16	16	Spring 3
	subtotal						**8**	**128**	**64**	**64**	
	required	School of Applied Arts and Design	b2041230	Abilities of Creative thinking	Design Frontiers and Trends	test	2	32	24	8	Autumn 4
	required	School of Applied Arts and Design	b4000039		the program of Product Design Innovation and Entrepreneurship	non-test	2	32	0	32	Autumn 4
	subtotal						**4**	**64**	**24**	**40**	
	required	School of Applied Arts and Design	b2041281	Abilities to express design	Integrated expression of design	non-test	1	16	0	16	Autumn 4
	subtotal						**1**	**16**	**0**	**16**	
	required	School of Applied Arts and Design	b2041282	Abilities to apply engineering structures	Design Graphics and Product Mapping	test	2	32	16	16	Spring 2
	required	School of Applied Arts and Design	b2041283		Product Design Materials and Processes	test	3	48	32	16	Spring 2
	selective 3 credits	School of Applied Arts and Design	b2041284	Abilities to apply digital technology	Product Digitalization Technology and Reverse	test	3	48	16	32	Spring 3
		School of Applied Arts and Design	b2041232		Dynamic product representation and virtual	test	3	48	16	32	Spring 3
	subtotal						**8**	**128**	**64**	**64**	
	required	School of Applied Arts and Design	b2041034	Comprehensive abilities of product design	Product Design(A)	test	6	96	32	64	Spring 2
	required	School of Applied Arts and Design	b2041035		Product Design(B)	test	6	96	32	64	Autumn 3
	required	School of Applied Arts and Design	b2041036		Product Design(C)	test	6	96	32	64	Spring 3
	required	School of Applied Arts and Design	b2041112		Thematic practice for Designing (A)	test	4	64	0	64	Summer 1
	required	School of Applied Arts and Design	b2041113		Thematic practice for Designing (B)	test	4	64	0	64	Summer 2
	required	School of Applied Arts and Design	b2041114		Thematic practice for Designing (C)	test	4	64	0	64	Summer 3
	subtotal						**30**	**480**	**96**	**384**	
	required	School of Applied Arts and Design	b2041235	Abilities of Cross Fusion Design	Interaction design	test	3	48	18	30	Autumn 3

Category	Type	Provided by	Course Code	Ability Modules	Course Name	Assessment	Credit	Course Hours	Theory Learning	Practical Training	Recommended semester
	selective 4 credits	School of Applied Arts and Design	b2041084		Brand Identity Design	test	4	64	24	40	Spring 3
		School of Applied Arts and Design	b2041233		Service design	test	4	64	24	40	Spring 3
	selective 3 credits	School of Applied Arts and Design	b2041030		Product packaging design	test	3	48	18	30	Autumn 4
		School of Applied Arts and Design	b2041045		Product display design	test	3	48	18	30	Autumn 4
	subtotal						**10**	**160**	**60**	**100**	
	required	School of Applied Arts and Design	b4040014	Labour Education B		non-test	0.5	16	0	16	Spring 3
	required	School of Applied Arts and Design	b4040009	Product Design graduation internship and graduation design (thesis)		non-test	6	288	0	288	Spring 4
	Subtotal						**6.5**	**304**	**0**	**304**	
	Subtotal (Professional Course)						**67.5**	**1280**	**308**	**972**	
Extracurricular Class	required	Others	b5110001	Extracurricular Class		non-test	**1**	-	-	-	Autumn Spring
Total							**158**	**2848**	**1388**	**1460**	

X. Credit of Extracurricular Class

Through taking extracurricular classes, students are encouraged to take part in academic lectures, social practice activities, campus cultural and sports activities, innovative and entrepreneurial activities, voluntary activities, etc. to improve their social adaptability and enhance the competitiveness in the job market. Details are specified in Students' Manual.