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湖南工艺美术职业学院  
HUNAN ARTS AND CRAFTS VOCATIONAL COLLEGE

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Architectural Design Major  
Talent Training Program in 2020

Department of Environmental Art Design

June 2020

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## I. Professional name and code

Professional (direction) Name: Architectural Design

Professional code: 540101

## II. Enrollment object and academic system

Enrollment object: High school graduates, secondary vocational school graduates or the same educational level

Academic system: three years

## III. Employment orientation

Architectural design professional post (group) table

Category	Professional Post
Initial employment post	Architectural design draftsman, architect assistant, project manager
Career development post	Architectural designer, senior designer, design director, project manager, engineering supervisor
Career transfer post	Interior designer, planner, exhibition designer

## IV. Training target

Cultivate and support the CCP's basic line, adapt to the needs of the first line of production, construction, service and management in the architectural design industry, and develop comprehensively in virtue, intelligence, body and beauty, haVE the theoretical knowledge and professional knowledge necessary for the corresponding positions in the architectural design industry, strong design innovation consciousness, independent entrepreneurship spirit, high artistic accomplishment, architectural design ability and certain management knowledge, capable of designing and managing high-quality technical talents in architectural design, real estate development and related engineering companies.

## V. Training specification

### (I) Knowledge requirement

1. Master Marxism Leninism, Mao Zedong thought, Deng Xiaoping theory, three representatives and socialism with Chinese characteristics, and master the relevant philosophy, politics, economics, professional ethics, and legal common sense;
2. Master basic Chinese knowledge, general practical writing knowledge and industry writing knowledge;
3. Master the basic language knowledge and basic English writing knowledge;
4. Master the basic knowledge of computer application and knowledge of aided design;
5. Master the common sense of national defense, safety education and health knowledge;
6. Master basic historical knowledge of Arts and crafts, basic knowledge of architectural industry development and architectural design;
7. Master the way of thinking of architectural design, capable of using modern design concepts, understand the new trend of the development of architectural design, and have strong artistic accomplishment.

## **(II) Ability requirements**

1. Ability of integrating the knowledge of philosophy, law and other disciplines to analyze and solve problems;
2. Ability of using native language, English and combines etiquette knowledge to read, communicate and communicate with people properly;
3. Ability of using computer network to collect and organize information;
4. Ability of learning how to get along with others, and collaboration;
5. Ability of learning how to learn all kinds of knowledge and professional skills, strive to improve the ability of innovation and entrepreneurship, consolidate the ability of personal sustainable development;
6. Architectural design ability: can take comprehensive consideration of the influence of region, nature, humanity and other restrictions on the site planning, to carry out planning design and architectural design;
7. Architectural drawing ability: master the core skills such as AutoCAD, Sketchup, Photoshop, 3DMax and other mapping software, hand-painted performance and model making;
8. Construction engineering management ability: can be engaged in construction engineering construction technology, construction project organization management, project cost and other work, familiar with the construction drawings, construction process, management documents and so on;
9. Field strain and communication skills: can have good communication between the design scheme and the user, and make technical clarification of the project during the construction process, and the coordinate the contradictions between the scheme and the actual construction.

## **(III) Quality requirements**

1. Have high political ideological quality: love the motherland, uphold the leadership of the Communist Party of China, adhere to the four basic principles, abide by the law and rules; have the correct outlook on life, the socialist core values and the world outlook;
2. Have good physical and mental quality: take active physical training, keep good physical health; channel bad mood and forming healthy psychology;
3. Have noble moral quality: develop good personal morality, such as respecting the old and loving the young, kind to people, credibility and integrity, unity, and cultivate correct professional ethics, such as loving post, discipline, dedication, initiative and innovation;
4. Has higher aesthetic interest: distinguish between beauty and ugliness, positive and optimistic attitude towards life and work, enjoy the beauty, be a noble and rich person in life, and with excellent EQ;
5. Be meticulous in all aspects of design, mapping, construction, budgeting, management, auditing and strictly abide by national regulations;
6. Have scientific attitude of emancipating mind and seeking truth from facts;
7. Have the spirit of innovation and entrepreneurship that is daring to challenge and struggle.

## VI. Course development and course system

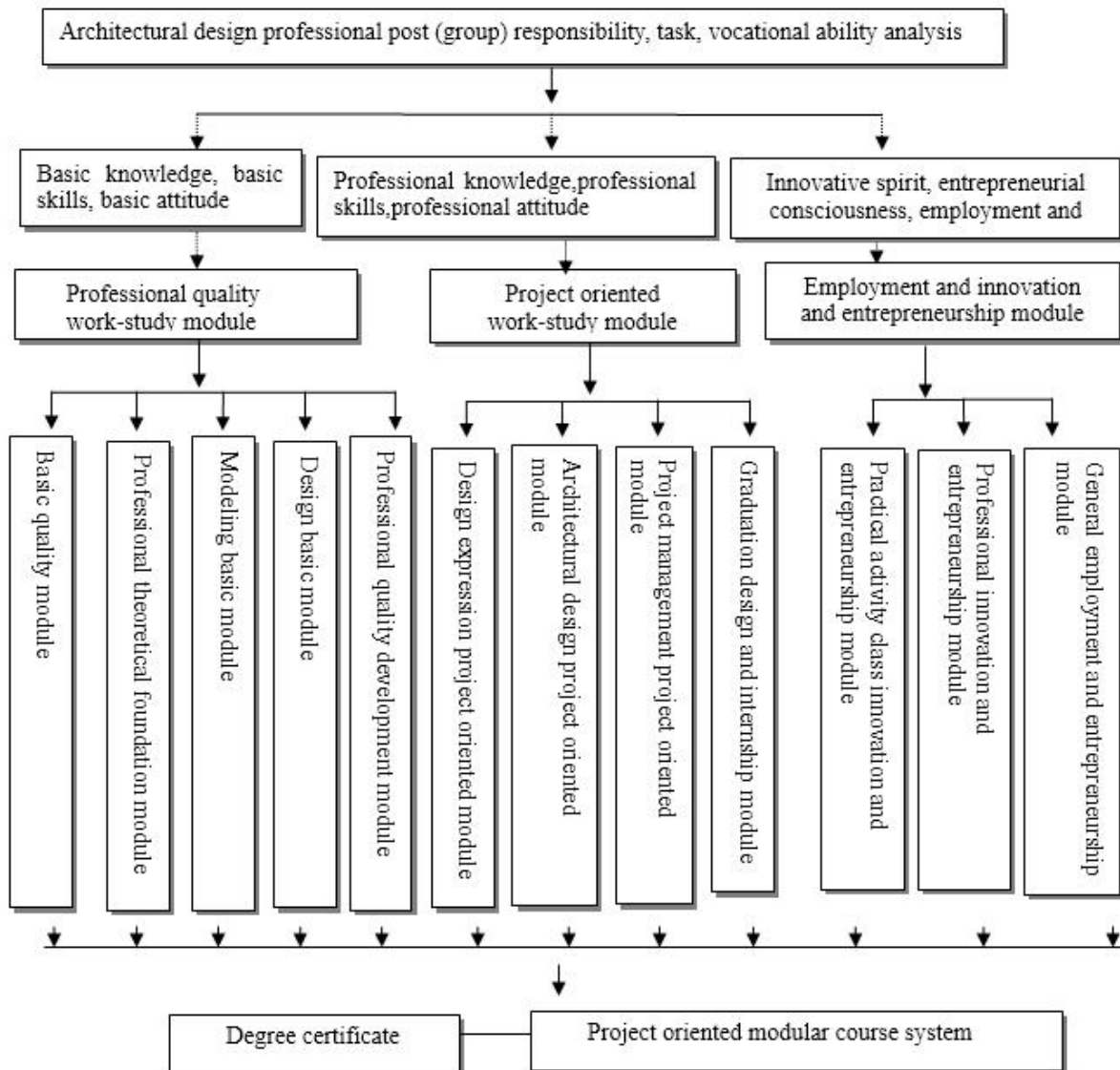
### (I) Typical work task and professional ability analysis

Typical work task and professional ability analysis table for architectural design major

Work task fields	Typical work tasks	Vocational abilities
1. Drawing and performance of architectural drawings	1.1 Draw architectural plan drawings	1.1.1. Ability to understand customers' requirements; 1.1.2. Ability to read plan sketches; 1.1.3. Ability to draw drawings with computer aided design software.
	1.2 Architectural digital modeling	1.2.1. Ability to understand customers' requirements; 1.2.2. Ability to read plan sketches; 1.2.3. Ability to use computer aided design software for digital modeling.
	1.3 Architectural effect diagram performance	1.3.1. Ability to understand customers' requirements; 1.3.2. Ability to read draft plans and drawings; 1.3.3. Ability to use computer aided design software for later performance.
2. Architectural design	2.1 Architectural plan communication report	2.1.1. Ability to understand customer requirements; 2.1.2. Ability to collect and collate information; 2.1.3. Ability to create and express architectural ideas.
	2.2 Architectural plan design	2.2.1. Ability to understand customers' requirements; 2.2.2. Ability to read and draw schematic drawings; 2.2.3. Ability to draw drawings with computer aided design software.
	2.3 Architectural construction drawings design	2.3.1. Ability to read other drawings; 2.3.2. Ability to use relevant specifications; 2.3.3. Ability to draw drawings with computer aided design software.
3. Construction management	3.1 Project docking	3.1.1. Ability to understand customer requirements; 3.1.2. Ability to use relevant specifications; 3.1.3. Ability to read construction drawings.
	3.2 Construction coordination	3.2.1. Ability to master engineering design process; 3.2.2. Ability to master engineering construction process; 3.2.3. Ability to coordinate engineering field design.
	3.3 Project management	3.3.1. Ability to master the construction process; 3.3.2. Ability to read and manage budget drawings and contracts; 3.3.2. Ability of site supervision and acceptance.
4. Organization and management	4.1 Engineering construction planning organization	4.1.1. Ability of project planning and design; 4.1.2. Ability of project organization management; 4.1.2. Ability to read and compile construction projects, organize and plan books.
	4.2 Technical document management	4.2.1. Ability to read and manage technical drawings of various industries; 4.2.2. Ability to communicate with the design unit; 4.2.3. Ability to master the engineering design process.
	4.3 Archived document management	4.3.1. Ability to read and manage various archives; 4.3.2. Ability to communicate and docking with administrative units; 4.3.3. Ability to master the construction process.

## (II) Project oriented modular course system design

### 1. Architectural design major project oriented modular course system composition diagram



## 2. Architectural design major project oriented modular course composition form

Primary module	Secondary module	Courses
Professional quality work-study module	Basic quality module	Introduction of Mao Zedong thought and theory system of socialism with Chinese characteristics, ideological and moral cultivation and legal basis, college Chinese, practical writing, college English, computer application basis, physical culture, psychological health education, military lesson, situation and policy, college students' well-being and security education
	Professional theoretical foundation module	Chinese and foreign arts and crafts history, Modern design history
	Modeling basic module	Design sketch, design color, design composition
	Design basic module	Chinese and foreign architectural history, architectural drawing, architectural design basis, architectural physics, architectural composition and preliminary design
	职业素质拓展模块 Professional quality development module	Chinese traditional culture selection, aesthetic introduction, art appreciation etc.
Project oriented work-study module	Design expression project oriented module	Computer aided design, architectural fast design and performance
	Architectural design project-oriented module	Architectural design (I), professional investigation, architectural design (II), architectural design (III), residential district planning and design, high-rise building design
	Project management project oriented module	Architectural structure and architectural equipment, architectural drawings and drawings reading
	Graduation design and internship module	Graduation design, post internship, and vacation post internship
Employment and innovation and entrepreneurship module	General employment and entrepreneurship module	Entrepreneurial foundation, vocational development and employment guidance for higher vocational students, entrepreneurial marketing practice, negotiation methods and skills etc.
	Professional innovation and entrepreneurship module	Creative architectural model design, architect career planning, etc.
	Practical activity class innovation and entrepreneurship module	Innovation and entrepreneurship competitions, career planning competitions, innovation projects, entrepreneurship practice, entrepreneurship training, etc.



## **VII. Course description**

### **(I) Professional quality work-study module course description**

#### **Basic quality module course**

1. *Introduction of Mao Zedong thought and theoretical system of socialism with Chinese characteristics* (64 hours)

This course is centered on China's Marxist theory, focuses on teaching the Communist Party's historical process of integrating Marx's basic principles with Chinese reality, help students grasp systematically Mao Zedong thought and the theoretical system of socialism with Chinese characteristics, enables students deeply understand the importance of adhering to the guiding position of Marxism to realize the great rejuvenation of the Chinese nation, and firmly believe in the ideal of the socialist road with Chinese characteristics under the leadership of the party.

2. *Ideological and moral cultivation and legal basis* (48 hours)

This course integrates the basic positions, viewpoints and methods of Marxism comprehensively, take the correct outlook on life, values, morality, legality and integrity education as the basic content, help students to establish the ideal and belief of science and the value concept of serving the people, and guide the college students to improve their ideological and moral quality, legal quality, honesty and moral consciousness, and be the socialist builder and successor with “ideals, morality, culture and discipline”.

3. *College Chinese* (64 hours)

This course is a cultural compulsory course, which takes the humanistic quality education as the core and integrates the tools, knowledge, basic, ideological, aesthetic and humanistic of Chinese education, and it belongs to the basic quality module course. This course aims to cultivate students' basic knowledge of literature, oral expression and writing, and to learn Chinese excellent traditional culture; improve students' reading ability, appreciation ability, aesthetic ability, oral expression ability and written expression ability; enables students have certain literary accomplishment, artistic accomplishment and aesthetic quality, so as to enhance their comprehensive quality, and lay a solid foundation for professional learning, and for future employment and continuing learning.

4. *Application writing* (36 hours)

This course aims to train students to master the basic theory and basic knowledge of application writing, grasp the characteristics and norms, and writing requirements of commonly used administrative documents, transaction documents and special documents; through in-depth analysis and research of model essay, and with more practice, write diligently, repeatedly modify and persist in practice, gradually turn book knowledge into practical ability, and truly improve the writing ability of practical writing; improve students' comprehensive quality, to meet the needs of the students daily study, life and the future work to lay the necessary basis, and lay a solid foundation for the sustainable development of students' career.

5. *College English* (140 hours)

This course is one of the humanities literacy courses required by non-English majors in vocational colleges. It is also a continuation of English Curriculum in high school or vocational middle school, and serves as a connecting link in the professional talents training system. This course aims at workplace communication, for the purpose of application, cultivate students' ability of practical English application, especially listening and speaking

abilities; at the same time, master effective learning methods, enhance independent learning ability and improve humanistic quality, therefore, it is also an important part of the implementation of humanistic quality education in our department. This course mainly studies the first and the second volume of the fourth edition of *new practical English* comprehensive course, and the main content involves clothes, food, shelter, travel and other daily life themes.

#### 6. *Computer application foundation* (28 hours)

This course is designed to enable students to skillfully use Windows 7 operating system and Office2010 application software, equipped with the basic knowledge of computer network, and the ability skillful using Internet to collect data, read data and make use of data. Cultivate students' ability of finding problems, analyzing and solving problems, and the consciousness of self-directed inquiry learning in the process of learning. This course focuses on basic skills as well as practical training, to enable students take part in the computer proficiency emanation after completing the course study.

#### 7. *Physical culture* (108 hours)

This course mainly includes athletics, ball games, sports dance, aerobics and so on. It is a public compulsory course that takes student body practice as the main means, through reasonable sports education, and scientific process of physical exercise, to strengthen fitness, improving health and improve sports quality as the main goal, it is an important part of the school curriculum system, and a central link of school sports work. This course is an effective way to achieve quality-oriented education and train students to adapt to the society and improve their personality.

#### 8. *Psychological health education* (20 hours)

This course is a public course integrates with knowledge imparting, psychological experience and behavior training. This course aims to make students be clear the standards and significance of psychological health, enhance their awareness of psychological health care and psychological crisis prevention, and master and apply the knowledge of psychological health, learn the basic skills and methods of maintaining physical and psychological health, and enhance self-protection ability, improve self cognitive ability, interpersonal communication ability, self adjustment ability, etc., improve the psychological quality, provide intelligence support for students' healthy growth and promote their all-round development.

#### 9. *Military lesson* (60 hours)

Freshmen's entrance education and military training are early educational activities carried out regarding the characteristics of higher vocational college students, including national defense education module, behavior development education module, school history and school culture cognition module, and professional cognitive education module, the college takes freshmen's entrance education and military training as the opportunity and breakthrough, to enable freshmen understand the college, understand their majors and understand their learning tasks, and form the purpose of three years of holistic cognition of higher vocational education.

#### 10. *Situation and policy* (40 hours)

This course is under the guidance of Marxism Leninism, Mao Zedong thought and the theory of socialism with Chinese characteristics, closely related to the international situation, in particular, the situation of China's reform and opening up and socialist modernization, carry out situation and policy education and teaching according to the actual situation of students, help students understand the world and China's general trend of development, and guide

students to accurately understand the party's line, principles and policies, cherish and maintain the overall situation of the country's stability, enhance the confidence and sense of social responsibility to achieve the grand goal of socialist modernization.

Note: the situation and policy course is divided into two parts: classroom teaching and social practice. Classroom teaching is 40 hours, and social practice is 20 hours.

#### 11. *College Students' growth guidance and safety education* (24 hours)

This course is a cultural compulsory course to highlight experience and practice, aims to improve students' scientific and cultural quality and moral quality, guide students to form the correct ideal belief, core value and ability accomplishment, and achieve harmonious development of body and mind. The course teaching is guided by Marx Lenin doctrine, Mao Zedong thought, Deng Xiaoping theory and the important thought of “Three Represents”, taking the education of ideals and beliefs as the core and patriotic education as the key point, based on the ideological and moral construction, and the all-round development of college students as the goal, help students achieve the optimization and transformation of attitudes, attitudes and behaviors, be the builder and successor of the socialist cause with Chinese characteristics of all-round development of morality, intelligence physique and aesthetic.

### **Professional theoretical foundation module**

#### 1. *Chinese and foreign art history* (36 hours)

This course enables students to understand and master the characteristics and laws of the development of arts and crafts in different historical periods, and be familiar with the design ideas and styles of different arts and crafts at home and abroad; master the characteristics of the important handicrafts in different periods, and perform good appreciation and evaluation of the works of arts and crafts with applied knowledge; can successfully apply the achievements of Chinese and foreign arts and crafts to innovate and practice the integration of tradition and modern, East and West, and improve students' theoretical literacy and comprehensive ability in design practice.

#### 2. *Modern design history* (36 hours)

This course enables students to understand the laws and characteristics of design and development in different stages of the industrial revolution for 150 years, and familiar with the design concepts and style characteristics of different periods; master the design ideas of important design works or designers in different periods, can perform good appreciation and evaluation of design works with applied knowledge; learn to extract design elements from successful cases and create design works that are suitable for the needs of today's times, so as to enhance students' theoretical literacy of design practice.

### **Modeling basic module course**

#### 1. *Design sketch* (42 hours)

This course is a modeling basic module course in architectural design professional quality work-study module; cultivate students to understand objects by means of structural analysis, depict objects by means of structural sketch, and decompose and combine the form of objects through means of analysis and depiction. Teachers need to guide students to depict objects with rational and scientific methods and techniques, and accurately express the shape and texture of objects. In practice teaching, in addition to the traditional still life sketch training, professional sketch exercises (plants, vehicles, architectural scenes, architectural locality, building facades, etc.) are used to improve the students' ability to express and conceive about the related objects of the building, and lay a foundation for further study of professional knowledge.

## 2. *Design color* (42 hours)

This course is the modeling basic module course of architectural design professional quality work-study module. This course mainly teaches the basic principles of color, the expression and originality of colors, and the application of design colors in architectural design. Through course learning, cultivate students' composition ability, modeling ability, spatial imagination ability and aesthetic ability; cultivate the correct methods of artistic observation, analysis and expression, master the basic theories and basic skills of color sketch and composition, and lay the foundation for the follow-up professional design course.

## 3. *Design composition* (56 hours)

This course is a modeling basic module course in architectural design professional quality work-study module. The learning contents mainly include three basic components of plane composition, color composition and three-dimensional constitution. Of which plane composition mainly studies the concept, basic elements, formal beauty rules and types of plane formation; color composition mainly studies the relationship between color composition and artistic design, the basic attributes of color, the psychological perception and emotion of color, the contrast and harmonization of color, the application of color composition in architectural design, and so on, and cultivate the students' ability to analyze and express the plane and color; three-dimensional constitution mainly studies the concept, characteristics and morphological elements of three-dimensional constitution, the combined training of three-dimensional composition and the application of three-dimensional constitution in architectural design, enable students realize the cornerstone of the three-constitution through learning, improve the aesthetic consciousness and cultivate the ability of appreciation, lay a solid foundation for the follow-up professional courses.

### **Design basic module course**

#### 1. *Chinese and foreign architectural history* (42 hours)

This course is the design foundation module course in the professional quality-work-study module of architectural design. *Chinese and foreign architectural history* includes three parts: ancient Chinese architectural history, foreign ancient architectural history and modern architectural history. It mainly reviews and summarizes the history of Chinese architecture and the history of foreign architecture and the architectural features and excellent architectural examples in all-important historical periods, thus to understand the development law of architecture. This course is taught by teaching students' ideas, theories and methods of Chinese and foreign architectural design, including historical background, architectural technology, architecture type, architectural style and genre, famous architectural examples, architects, and architectural works etc., enable students understand the richness of architectural achievements and understand the development rules of architecture, broaden minds and accumulate design materials for future learning and design activities.

#### 2. *Architectural drawing* (42 hours)

This course is the basic module course of architectural design professional quality work-study module. This course is a professional core course. *Architectural drawing* is the theory and method for the study of drawing and reading engineering drawings and a professional basic course set up to architectural design and with strong practical. Courses include manual drawing and computer drawing ability training. The course is based on the theory of parallel projection, teaches the basic principles of engineering drawing, introduce relevant national standards, and introduce the drawing and reading methods of professional drawings.

### 3. *Architectural composition and preliminary design* (56 hours)

This course is the design foundation module course in the professional quality-work-study module of architectural design. *Architectural composition and preliminary design*, based on the basic training of artistic modeling and architectural form design, enable students get started step by step. Through learning the basic steps, contents and methods of architectural design, initially learn to analyze and solve the basic problems of function and form, space and form, cultivate students to preliminary master the creative ability of small architectural design.

### 4. *Architectural structure design basis* (56 hours)

This course is the design foundation module course in the professional quality-work-study module of architectural design. This course is a professional core course. *Architectural structure design basis* mainly studies the basic principles and application knowledge of the structure and design of civil buildings and industrial buildings. Understand the basic contents and methods of architectural structure by learning the basic principles; understand the functional problems, structural problems, economic problems and aesthetic problems in architectural design, enable students master the structure of architecture, the structural principles and construction methods of the components. Through the study of this course, further cultivate students to understand the architectural design intention, consult relevant building codes, building atlas and other materials to deepen the reading of architectural drawings.

### 5. *Architectural physics* (28 hours)

This course is the design foundation module course in the professional quality-work-study module of architectural design. *Architectural physics* is a practical and comprehensive professional course. The task of this course is to enable students to master the basic theories, basic knowledge and basic skills of architectural physics and enrich the theoretical knowledge of architectural design, and apply these theoretical knowledge in practice, provide guarantee for further improving the function and use quality of building physics.

## **(II) Project oriented work-study module course description**

### **Design expression project oriented module course**

#### 1. *Computer aided design* (84 hours)

This course is the design expression project oriented module course in architectural design specialty project-oriented work-study module. This course is a professional core course. *Computer Aided Design* is a professional technology course to cultivate students to use computer software and hardware to complete the design and practice of this specialty, as well as architectural modeling and planning. Through the learning of this course, enable students master the use of AutoCAD, master the drawing skills of two-dimensional engineering drawings, and make use of 3D modeling technology to construct buildings. Understand the modeling skills of SKETCHUP and 3D MAX, and master the Photoshop processing skills of architectural effect diagram.

#### 2. *Architectural fast design and performance* (42 hours)

This course is the design expression project-oriented module course in architectural design specialty project-oriented work-study module. The purpose of this course is to enable students have the comprehensive ability of completing the plan design and performance within the specified time on the basis of mastering the architectural hand-painted performance and architectural design. The teaching focuses mainly include architectural originality, fast

design of the general plan, plane function and space form, fast expression of the flat profile and effect diagram, and perform layout design.

### **Architectural design project-oriented module course**

#### *1. Architectural design (I) (84 hours)*

This course is an architectural design project-oriented module course in architectural design specialty project-oriented work-study module. This course is a professional core course. As one of the main courses of architectural design major “architectural design”, *architectural design (I)* is a course for students to learn about architectural design. The purpose and task of course teaching are: master the design method of building type with simple function requirement. Preliminarily master the ability to process simple functions, technology, art other aspects of architecture. Understand the relationship between external environment and architecture. Students are required to master hand-painting techniques. Master the cultivation of the expression ability of the sketch and architectural model.

#### *2. Professional investigation (28 hours)*

This course is an architectural design project-oriented module course in architectural design specialty project-oriented work-study module. Select the coastal cities with high level of economy and high level of urban construction (the general inspection sites are cities such as Shanghai, Suzhou and Hangzhou), collect design materials, understand the development status and latest trend of architectural design, broaden the horizon and improve professional quality, lay the foundation for the following professional design courses. The contents include urban design, business design, residential area design, office design, company design, exhibition place, construction site and so on. Teachers carry out targeted professional knowledge teaching in the process of investigation, students are required to complete the investigation report and a certain amount of landscape sketches and architectural sketches.

#### *3. Architectural design (II) (112 hours)*

This course is an architectural design project-oriented module course in architectural design specialty project-oriented work-study module. This course is a professional core course. As one of the main courses of architectural design major “architectural design”, *Architectural Design (II)* is a course for students to consolidate and improve architectural design. The purpose and task of the course teaching are: comprehensively process with the contradiction and unity of architectural function, architectural technology and architectural art, and cultivate the ability of complex spatial combination. At the same time, through the study of basic skills, such as functional analysis, space combination, modeling processing, and other basic skills, emphasized to train the students to apply the knowledge in the related courses to the architectural design, understand the situation of development and development at home and abroad. Study the method of model design. Be familiar with the corresponding design specifications and social regulations.

#### *4. Architectural design (III) (112 hours)*

This course is an architectural design project-oriented module course in architectural design specialty project-oriented work-study module. This course is a professional core course. As one of the main courses of architectural design major “architectural design”, *Architectural Design (III)* is a course for students to deepen and perfect architectural design. The purpose of its teaching is to cultivate and create a qualified and future professional architect under the conditions of combined with other courses. The purpose of teaching is to cultivate and train students' architectural design ability and design method in an all-round way. It includes the set up of correct design ideas and architectural ideas for students; enable

students to have basic architectural design ability (including urban design, garden design and interior design) and architectural design methods; develop students' ability to analyze problems, integrate problems and solve problems; gradually learn to comprehensively and uniformly deal with problems related to environment, function, technology, space, form and detail.

#### 5. *Residential area planning and design* (112 hours)

This course is an architectural design project-oriented module course in architectural design specialty project-oriented work-study module. This course is a professional core course. *Residential Area Planning and design* enables students to master the programming, content and methods of the detailed planning of residential construction, and cultivate students' ability to investigate and analyze problems and comprehensive design. With broad understanding of the basic techniques of planning and design of excellent residential areas at home and abroad, consolidate and deepen the study of planning and design principles of residential areas and planning and design of urban residential areas. Plan and design housing group, public facilities, road traffic system, municipal infrastructure and greening environment in residential area with reasonable technology and according to local conditions. Combine theory with practice to reflect the connotation of the social, economic and historical space of the living environment, make full use of the creativity of imagination and explore and create ideas for local culture, residential mode, ecological environment and other deep-seated problems, strive to create a “human, living environment and city” coordinated development of human living community environment.

#### 6. *High-rise building design* (112 hours)

This course is an architectural design project-oriented module course in architectural design specialty project-oriented work-study module. This course is a professional core course. *High-rise building design* enables students to master the design contents and methods of high-rise buildings, and cultivate students' ability to investigate and analyze problems and integrate design. Widely understand the basic techniques of excellent high-rise design at home and abroad, consolidate and deepen the learning of high-rise design principles and related design specifications. Perform with reasonable technology, preliminarily understand the high-level design structure type, fire and earthquake resistance requirements. Combine theory with practice to reflect the connotation of art in the social, economic and historical space of the city, make full use of the creativity of the imagination and explore and innovate the deep problems of local culture, ecological environment, urban space and architectural form.

### **Engineering management project oriented module course**

#### 1. *Architectural structure and architectural equipment* (56 hours)

This course is an architectural design project-oriented module course in architectural design specialty project-oriented engineering management module. *Architectural structure and architectural equipment* mainly includes architectural design related building structures and architectural equipment and other aspects. Through teaching, students master the basic concepts, basic theories and structural requirement of architectural structure, structure selection, building water supply and drainage, electrical and heating and ventilation, thus, preliminarily master the basic theories and professional knowledge of general industrial and civil building structures, and has the ability to correctly read construction drawings related to architecture.

#### 2. *Architectural drawings and drawings reading* (70 hours)

This course is an architectural design project-oriented module course in architectural

design specialty project-oriented engineering management module. The main contents of this course are two aspects: drawing of architectural engineering drawing and reading of architectural engineering drawing, the emphasis is on the drawing of architectural drawings. In the aspect of reading of architectural engineering drawing, comprehensive describe architecture, structure, water, electricity and other professional architectural drawings and applications. Closely combined with the requirements of national occupational qualification standards for architecture contractors, guide by the work process, emphasize on the skill operation, fully embodies the characteristics of this course closely related to production practice.

### **Graduation design and post internship module course**

#### *1. Graduation design (126 hours)*

*Graduation Design* is a graduate design and post practice module course in project oriented work-study module of architectural design major, it is a very important practical teaching link in personnel training and it is the summary, promotion and application of knowledge learned in the past three years. In the creation of the graduation works, requires students to integrate use of mastered theoretical knowledge and skills and select the appropriate graduation design topic, design work to meet the requirements, form a relatively systematic graduation design achievement, and through the graduation defense successfully. Through this course, improve the ability to solve design practice problems and achieve the training goal of high-quality skilled talents. According to the graduation requirements of the professional graduates, graduates should complete a comprehensive design set of architectural design plan within the prescribed time, including design plan drawing, effect diagram drawing, model and exhibition board design and production, and complete graduation design summary report and graduation thesis defense related to the design scheme at the same time.

#### *2. Post internship (196 hours)*

This course is a graduate design and post practice module course in project oriented work-study module of architectural design major. Post internship is an important teaching link, and a practical form of teaching that under the guidance of the practice instructor, students apply their knowledge and skills learned in this course, participate in the design and production practice of enterprises, familiar with operation skills and workflow, accomplish certain design and production tasks, and develop good career habits.

### **(III) Employment and innovation entrepreneurship module course description**

#### *1. Career and development plan for vocational college students (16 hours)*

This course is a public compulsory course for all college students, aims to guide students to master the basic theories and methods of career planning, stimulate the independent consciousness of college students' career development, have a clear understanding of oneself, occupational characteristics and social environment, and master self exploration skills, information search and career decision-making skills, consciously improve professionalism and career management ability, and guide students to establish a positive and correct outlook on life, values and careers, and encourages college students to plan their future development rationally.

#### *2. Employment guidance (16 hours)*

This course is a public compulsory course for all college students, aims to guide students to understand the employment situation and policies and regulations, master basic labor market information, relevant vocational classification knowledge, and master job skills, improve general skills such as communication skills, self-management skills and



interpersonal skills, guide students to establish a positive and correct outlook on life, values and careers, and effectively encourages college students to find jobs and self-employment.

### 3. *Entrepreneurial foundation* (32 hours)

This course is public compulsory courses for all college students, through developing entrepreneurship-based teaching, enables students master basic knowledge and basic theories of entrepreneurship, and familiar with the basic process and basic methods of entrepreneurship, understand the laws and regulations and policies related to entrepreneurship, stimulate students' sense of entrepreneurship and improve their sense of social responsibility, creativity and entrepreneurship, so as to promote students find jobs and with overall development.

### 4. *Innovation and entrepreneurship practice course* (18 hours)

This course is designed to create good professional atmosphere and innovative entrepreneurial atmosphere as the mean, regularly carry out professional training, innovation training, entrepreneurship exercise, innovative and entrepreneurship competition, professional competition, entrepreneurship training, creation class, entrepreneurial practice, creative market, innovation and entrepreneurship achievement exhibition and other multi-form, multi-carrier activities, comprehensively improve students' professional quality, professional skills and innovation and entrepreneurship.

## **VIII. Professional core course standards (see Annex)**

### **IX. Teachers resources and requirements**

#### **(I) Professional leader requirements**

The major should allocate double leaders, hire extramural senior experts from industry enterprises as professional leaders, select influential senior professional and technical personnel in the school as professional leaders. The professional leader of school enterprise has the spirit of dedication and innovation, and has rich professional practice ability and experience in the professional field; have a deep understanding of the major, can accurately grasp the professional development direction, familiar with the latest development of the industry, has the overall design and management ability for the professional development; host the reform of professional training mode and the construction of course system, have the ability to lead professional teaching team; has the ability to host teaching, training and practice training base construction projects; can guide young teachers in teaching and social services.

#### **(II) Full-time teacher requirements**

Have higher education qualification and bachelor degree or above, in principle, have over two years working experience in this field, and have obtained the corresponding qualification certificate; with noble morality, rigorous scholarship, master the concept of modern vocational education and teaching methods, able to lecture more than one course, participate in practice teaching and achieve good teaching results; closely related to industry and related enterprises, host or participate in school enterprise cooperation or related professional and technical services; able to participate in the research of teaching reform and professional technical topics.

#### **(III) Part-time teacher requirements**

Have senior professional qualification or intermediate or above professional qualification, in principle, have more than 5 years' experience in the first line of business, and solve the technical problems in the production process; strong language skills, master certain vocational

education methods, has certain teaching ability, can undertake teaching tasks; has the ability to participate in the formulation of talent training programs, course development and construction, and the compilation of related teaching documents.

## X. Configuration and requirements of practical teaching conditions

### (I) Configuration and requirement table of the practical teaching conditions in school

Experiment training rooms	Equipment configuration		Equipment functions and requirements	Vocational ability training
1. Architectural teaching studio	1. Professional drawing table and chair	50 sets	Purchase professional equipment according to the requirements of professional related courses such as drafting and production, to meet the requirements of teaching and training.	Ability to complete the conceptual design scheme of the architectural project; ability to complete the implementation of the architectural project; ability of engineering drawing and building model making.
	2. Projector	1 set		
	3. Computer	1 sets		
	4. Midea air conditioner	1 set		
2. Painting studio	1. Large worktable	1 piece /3 persons	Provide architectural structure models for sketching, perspective and other training; display excellent pattern design works, student works and excellent photography works, and related equipment photography equipment, etc., enable students get as many modeling resources as possible and create an independent and interactive learning atmosphere.	Ability of drawing and modeling design.
	2. Large rectangular table	1 piece /person		
	3. Small rectangular table	1 piece / person		
	4. Sketch plaster statue	Some		
	5. Some static objects in industrial products	Some		
3. Model making studio	1. Computer	1 set	Share resources with engraving training room, and provide computer, genuine drawing software (AutoCAD, etc.), the process and results of building model making, achieve model material knowledge learning and model production skills training integration.	Cognitive ability of material processing performance; ability to read and disassemble architectural drawings; ability to make architectural models using engraving set.
	2. Jack engraving set 1325	1 set		
	3. Pika engraving set 8090	1 set		
	4. Double person computer desk	1 piece / 2 persons		
	5. Carved software	2 sets		
	6. File cabinet	1 piece		
4. Laser engraving room	1. Computer	1 set	Share resources with engraving training room, and provide computer, genuine drawing software (AutoCAD, etc.), the process and results of building model making, achieve model material knowledge learning and model production skills training integration.	Cognitive ability of material processing performance; ability to read and disassemble architectural drawings; ability to make architectural models using engraving set.
	2. Laser engraving set	2 sets		
	3. Grinder	1 set		
	4. Electric sewing set	1 set		
	5. Tables and chairs	1 piece / person		
	6. Tables, chairs	1 set / person		

5. Computer design training room (2)	1. Glass computer desk	1 set / person	Computer, and requires to install office, AutoCAD, Adobe Photoshop, CORELDRAW, 3Ds MAX+Vray renderer, SketchUp drawing software, and network unobstructed.	Ability of computer aided design (suitable for CAD architectural drawing, architectural effect diagram, font, and layout design).
	2. Projector	1 set		
	3. GREE air conditioner	1 set		
	4. Computer	1 set/person (45 sets / room)		
6. Furniture room	1. Drilling set (ST-16J)	1 set	1. Materials and tools are classified and stored; 2. Teachers should be supervise and guide in the using process; 3. Each tool has a safe use manual, post the training room system, safety rules, teacher and student training requirements, etc. with the prominent place on the wall; 4. Keep the training site clean, and check the tools regularly.	Ability to design and make architectural models.
	2. Steel cutting set (J3G-400)	1 set		
	3. Lead cutting set J1G-255	1 set		
	4. Vertical shaft milling set	1 set		
	5. Vertical sanding set 1.45 meters	1 set		
	6. Air pump 3.0HP, small air pump (AC-108)	1 台 1 set		
	7. Woodworking electric circular saw (6185LT)	1 set		
	8. Electric hammer SD41-26	1 set		
	9. Spray gun (W-71), airbrush USA	1 set		
	10. Straight gun T-30, Martin gun	1 set		
	11. Trimming set (RH-6006)	1 set		
	12. Hand electric drill (Mingpu 6610)	1 set		
	13. Marble set 110, bench vice (6 inch)	1 set		
	14. Hand planer M1B-SLD-82*1	1 set		
	15. Angle grinder S1M-ZU02-100A	1 set		
	16. Trimming set (CM12A)	1 set		
	17. Curve saw M1Q-JN-60	1 set		
	18. Infrared range finder and infrared level meter	1 set		
	19. Flat nose pliers, sharp nose pliers, flat file	1 bundle/person		
	20. Phillips screwdriver, slotted screwdriver, hammer	1 bundle/person		
	21. Carpenter's saw	1 set		

7. Carpenter's house	1. Table saw	1 set/ 2 persons	<p>1. Materials and tools are classified and stored;</p> <p>2. Teachers should be supervise and guide in the using process;</p> <p>3. Each tool has a safe use manual, post the training room system, safety rules, teacher and student training requirements, etc. with the prominent place on the wall;</p> <p>4. Keep the training site clean, and check the tools regularly.</p>	<p>Ability to design and make architectural models.</p>
8. Manual studio	1. Computer	1 set/person		
	2. Iron file cabinet	1 piece / person		
	3. Reading chair	1 piece / person		
	4. Small rectangular table	1 piece / person		
9. Metalworking room	1. Electric welding set (8KVA)	1 set		
	2. Argon arc welding set (type 180)	1 set		
	3. Welding station	1 set		
	4. Pipe welder	1 set		

**(II) External practice teaching condition configuration and request form**

Training base	Base function and requirement	Professional ability and quality training
1. Yiyang Architectural Design Institute	1. Post internship 2. Architectural design practical training	1. Architectural scheme design 2. Digital modeling and performance 3. Construction drawing
2. Hunan city college planning and architectural design institute	1. Post internship 2. Architectural design practical training	1. Architectural scheme design 2. Digital modeling and performance 3. Construction drawing
3. Yiyang Xionsen real estate development Co. Ltd.	1. Post internship 2. Engineering management practical training	1. Project approval 2. Project connection 3. Construction organization

**XI. Teaching arrangement**

**(I) Teaching schedule**

**Major (direction) name: Architectural design major (2017 full-time)**

	Module composition	Course nature	Course name	Core course	Total credits	Total hours	Theoretical teaching	Class practice	Weekly No. distribution in each semester						Assessment method	Remark	
									First academic year		Second academic year		Third academic year				
									One	Two	Three	Four	Five	Six			
Professional quality work-study module	Basic quality module	Compulsory	An introduction to MAO Zedong thought and the theory of socialism with Chinese characteristics		4	64	52	12		2/16	2/16						
			Ideological and moral cultivation and legal basis		3	48	40	8	4/12								
			College English		8	140	140	0	4/13	4/14	2/16						
			College Chinese		4	64	64	0	2/14	2/18						★	
			Practical writing		2	36	36	0			2/9	2/9					
			Computer application foundation		2	28	12	16	2/14								

			Physical culture		6	108	8	100	2/12	2/14	2/14	2/14						
			Psychology health education		1	20	20	0	2/5	2/5								
			Military lesson		3	60	12	48	3 周									
			Situation and policy		1	40	32	8	Schedule for 10 hours per semester for 1-4 semesters									
			College students' growth guidance and safety education		1	24	24	0	Schedule for 8 hours per semester for 2-4 semesters									
			Subtotal		35	632	440	192	200	180	128	64	0	0				
	Professional theoretical foundation module	Compulsory	Modern design history		2	36	36	0				2/18						
			Chinese and foreign arts and crafts history		2	36	36	0			2/18							
			Subtotal		4	72	72	0	0	0	36	36	0	0				
	Modeling basic module	Compulsory	Design sketch		2.5	42	10	32	14/3									
			Design color		2.5	42	10	32	14/3									
			Design composition		3.5	56	12	44	14/4									
			Subtotal		8.5	140	32	108	140	0	0	0	0	0				
	Design basic module	Compulsory	History of Chinese and foreign architecture		2.5	42	10	32		14/3								
			Architectural composition and preliminary design		3.5	56	12	44	14/4									
			Architectural drawing	▲	2.5	42	10	32		14/3								
			Architectural design basis	▲	3.5	56	12	44			14/4							
			Architectural physics		2	28	6	22				14/2						
			Subtotal		14	224	50	174	56	84	56	28	0	0				
	Professional quality development module	Optional	Chinese traditional culture selection, aesthetic introduction, art appreciation etc.		2	36	36	0										
			Subtotal		2	36	36	0										
Project-oriented work-study module	Design expression project oriented	Compulsory	Computer aided design	▲	5	84	18	66		14/6								
			Architectural fast design and performance		2.5	42	10	32					14/3					
			Subtotal		7.5	126	28	98	0	84	0	0	42	0				

	module																	
	Architectural design project oriented module		Architectural design (I)	▲	5	84	18	66		14/6								
			Professional investigation		2	28	4	24			14/2							
			Architectural design (II)	▲	7	112	24	88			14/8							
			Architectural design (III)	▲	7	112	24	88				14/8						
			Residential district planning and design	▲	7	112	24	88				14/8						
			High-rise building design	▲	7	112	24	88					14/8					
			Subtotal		35	560	118	442	0	84	140	224	112	0				
	Engineering management project oriented module	Compulsory		Architectural structure and architectural equipment		3.5	56	12	44			14/4						
				Architectural drawings and readings		4.5	70	14	56				14/5					
				Subtotal		8	126	26	100	0	0	56	0	70	0			
	Graduation design and post internship module	Compulsory		Graduation design		2	28	20	8					14/2				
					7	98	0	98					14/7					
				Post internship		7	196	0	196					28/7				
				Vacation post internship		11	308	0	308		28/4		28/7					
			Subtotal		27	630	20	610	0	112	0	196	28	294				
Employment and innovation and entrepreneurs hip module	Compulsory		Vocational career and development plan of higher vocational college students		1	16	16	0	2/8									
			Entrepreneurial foundation		2	32	32	0		2/8	2/8							
			Employment guidance		1	16	16	0				2/8						
	Optional	Entrepreneurial marketing practices, negotiation methods and skills, Internet thinking, etc.		1	18	18	0											
	Optional	Creative architectural model design, architect career planning, etc.		2	32	32	0											
	Practical	Compulsory	Innovation and entrepreneurship		1	18	0	18										



	activity innovation and entrepreneurship module	ory	competitions, career planning competitions, innovation projects, entrepreneurship practice and entrepreneurship training													
Subtotal					8	132	114	18	16	0	16	16	16	0		
Total credits, learning hours, and average weekly hours in the module statistics					149	2678	936	1742	29	24	24	21	15	16		
College students' sports skills test				1 credit												
Academic summary				1 credit												

Note:

1. Symbol description: ★ indicates examination, and others are checking test; ▲ indicates core course; X/X: above the oblique line X is No. of weeks, and below the oblique line X is No. of weeks with concentrated classes in the semester.
2. In the professional quality development module, each optional course has 18 hours and 1 credit. Each semester is offered according to the optional situation of students, select 2 courses, and obtain 2 credits.
3. In the general employment and entrepreneurship module, each optional course has 18 hours and 1 credit. Each semester is offered according to the optional situation of students, select 2 courses, and obtain 2 credits.
4. In the professional innovation and entrepreneurship module, each optional course has 16 hours and 1 credit or 32 hours and 2 credits. Each semester is offered according to the optional situation of students, select any courses, and obtain 2 credits.

## (II) Practice teaching schedule

Training course	Training project	Training hours	Training place	Completion semester
Architectural composition and preliminary design	Cube composition design and production	44	Classrooms in Shang Mei Building	First semester
Computer aided design	Software operation exercises, Architectural modeling and post production of effect map	66	Computer room	Second semester
Architectural fast design and performance	Hand-painted practice, Propositional quick question design	32	Shang Mei Building classroom	Fifth semester
Architectural design (I)	Analysis and model making of master architectural works	66	No. 107 in Shang Mei Building	Second semester
Architectural design (II)	Field investigation, Research report writing, Kindergarten architectural design and model making	88	Kindergartens building in Yiyang or Changsha, No. 107 in Shang Mei Building	Third semester
Architectural design (III)	Field investigation, Research report writing, Museum architecture architectural design and model making	88	Yiyang or Changsha museums, exhibition halls and other buildings, No. 107 in Shang Mei Building	Fourth semester
Residential area planning and design	Field investigation, Research report writing, Urban residential district planning and design	88	Yiyang or Changsha residential area, 107 Shang Mei Building	Fourth semester
High-rise building design	Field investigation, Research report writing, Urban high-rise building design	88	Yiyang or Changsha high-rise buildings, No. 107 in Shang Mei Building classroom	Fifth semester
Professional inspection	Field investigation of traditional and modern architecture Research report writing	24	Beijing, Suzhou, Shanghai etc.	Third semester
Architectural structure and architectural equipment	Construction design analysis report writing Writing of analysis and report on construction and various types of work	44	Shang Mei Building classroom	Third semester
Drawing and reading of construction drawings	Construction drawing National standard field investigation	56	Campus buildings, Shang Mei Building classroom	Fifth semester
Graduation design	Complete a complete architectural design	106	107 Shang Mei Building classroom	Fifth, sixth semester
Vacation post internship	Professional post training	308	External construction enterprise	Second, fourth semester
Post internship	Professional post training	196	External construction enterprise	Sixth semester

**(III) School hours and credit allocation table**

Architectural design professional hours and credit allocation table

No.	Module course type		Credits	Proportion of total credits (%)	Hours	Proportion of total school hours (%)	Theoretical hours	Proportion of total school hours (%)	Practice hours	Proportion of total school hours (%)
1	Professional quality work-study module	Basic quality module	35	23.49	632	23.60	440	47.01	192	11.02
		Professional theoretical foundation module	4	2.68	72	2.69	72	7.69	0	0.00
		Modeling basic module	8.5	5.70	140	5.23	32	3.42	108	6.20
		Design basic work-study module	14	9.40	224	8.36	50	5.34	174	9.99
		Professional quality development module	2	1.34	36	1.34	36	3.85	0	0.00
2	Project-oriented work-study module	Design expression project oriented module	7.5	5.03	126	4.71	28	2.99	98	5.63
		Architectural design project oriented module	35	23.49	560	20.91	118	12.61	442	25.37
		Engineering management project oriented module	8	5.37	126	4.71	26	2.78	100	5.74
		Graduation design and post internship module	27	18.12	630	23.53	20	2.14	610	35.02
3	Employment and innovation and entrepreneurship module	General employment and entrepreneurship module	5	3.36	82	3.06	82	8.76	0	0.00
		Professional innovation and entrepreneurship module	2	1.34	32	1.19	32	3.42	0	0.00
		Practical activity innovation and entrepreneurship module	1	0.67	18	0.67	0	0.00	18	1.03
Total			149	1	2684	1	962	1	1722	1

## **XII. Graduation requirements**

### **(I) Credit requirement**

Total credit: 151 credits

### **(II) Certificate requirement**

1. All courses are completed according to the regulations, with qualified results and obtain the diploma of the specialty of this major;
2. Pass the English proficiency test of colleges and universities;
3. Passed the computer application ability examination of higher vocational colleges.

Annex:

1. Course Standard for *Planning and Design in Residential Area*
2. Course Standard for *Design Basis of Architectural Construction*

## Annex 1

### Course Standard of *Planning and Design in Residential Area*

Course name	Planning and Design in Residential Area	Department	Environmental Art Design	
Course code	1306008	Course nature	Examination	
Advanced course	Architectural Design (1), Architectural Design (II), Architectural Design (3)			
Follow-up course	High-rise architectural design, graduation design			
Total hours	112	Course type	Theory class	Yes <input type="checkbox"/>
			Practice course	Yes <input type="checkbox"/>
			Theory + practice	Yes <input type="checkbox"/>
			Integration of theory and practice	Yes <input checked="" type="checkbox"/>
Applicable major	Architectural design			

#### I. Course Nature

This course is an architectural design project-oriented module course in the architectural engineering project-oriented engineering module. This course allows students to master the procedures, contents and methods for the construction of detailed planning for residential areas, and to develop students' ability to investigate and analyze problems and conduct comprehensive designs. Able to extensively understand the basic methods of planning and design for excellent residential areas at home and abroad, and consolidate and deepen the study of the planning and design principles of residential areas and the planning and design specifications of urban residential areas. To achieve reasonable technology, plan and design residential groups, public facilities, road transportation systems, municipal infrastructure and greening environment in residential areas in accordance with local conditions. Integrate theory with practice to reflect the connotation of the social, economic and historical space art of the living environment, give full play to the power of imagination, explore and innovate deeper issues such as local culture, living patterns, and ecological environment, and strive to create a harmonious environment for the development of the human living environment of the "people, living environment and the city."

#### II. Course Objectives

##### (I) Knowledge objectives

1. Understand the excellent examples of planning and design of residential areas at home and abroad;
2. Understand relevant national regulations and industry requirements;
3. Understand the new developments, new methods, and new trends in the

planning and design of excellent residential areas at home and abroad;

4. Have certain knowledge of urban culture and regional environment;
5. Master the planning and design principles of residential areas.

#### **(II) Capacity objectives**

1. Learn to appreciate planning and designing works;
2. Have certain abilities to collect data and use data;
3. Have computer graphics performance capability;
4. Have certain hand-painted performance capability;
5. Able to design and plan for residential areas.

#### **(III) Quality objectives**

1. Have the ability to complete design tasks autonomously within the specified time;
2. Have good psychological quality and professional ethics quality;
3. Have high responsibility and good team spirit;
4. Develop a spirit of overcoming difficulties and have a strong ability to solve problems;
5. Good at communication, with good language and writing skills.

### **III. Course Content and Teaching Design**

#### **(I) Course design ideas**

"Planning and Design in Residential Area" is a professional required course for architectural designing. It is a part of the overall design course. It is based on the previous courses and plays a role in the follow-up course. The curriculum design regards residential area planning as the design theme. Students are required to complete the design of relative residential areas and the planning and design of residential areas on the basis of the completion of relevant design foundations, architectural design, and other courses. The result should be the form of a display board. This course has a total of 112 hours, of which theory accounts for 24 hours and 88 hours will be given to practices in class. In addition to the principles of design principles, the theory lectures are arranged by combining with the decentralized training of courses. The curriculum training aims at the overall design, and is divided into different phases according to the design progress. It also helps students to develop their design abilities while cultivating their good work habits.

## (II) Teaching content and teaching design

No.	Special abilities	Training programs	Reference hours	Teaching contents	Teaching requirements	Evaluation
1	Knowledge ability	Design principle	4	Design overview Design method Case explanation	Master the principle of Planning and Design in residential area Learn about domestic and foreign design trends	Process evaluation (self- evaluation, mutual evaluation,, teachers' evaluation)
		Case analysis	10	Study investigation PPT analysis	Collect relevant information through multi channels Organize and complete the resolution report	Process evaluation (self- evaluation, mutual evaluation,, teachers' evaluation)
		Case copying	14	General map copy copying Plan copying Analysis copying Effect map copying	Improve hand-painting capability Improve architectural interpretation Consolidate the method of planning and design in residential area	Process evaluation (self- evaluation, mutual evaluation,, teachers' evaluation),works assessment
2	Designing ability	Sketch ideas	14	Hand-painting sketch SU model	Master the method of expression of sketch ideas Accurately interpret the design task book Novel concept, open mind	Process evaluation (self- evaluation, mutual evaluation,, teachers' evaluation), works assessment
		Plan deepening	14	CAD plan General CAD drawing	Master CAD drawing ability Master the knowledge of plans and general plans	Process evaluation (self- evaluation, mutual evaluation,, teachers' evaluation), works assessment
		Plan finalization	14	SU precise model Stage report	Master SU modeling capability Improve project expression and communication skills	Process evaluation (self- evaluation, mutual evaluation,, teachers' evaluation), works assessment
3	Performanc e ability	products	14	Effect map production	Master effect map production methods and techniques	Process evaluation (self- evaluation, mutual evaluation,, teachers' evaluation), works assessment
		Result finalization	14	Exhibition board production	Improve typesetting ability	Process evaluation (self- evaluation, mutual evaluation,, teachers' evaluation), works assessment
4	Expression ability	Report presentation	14	Improve products PPT report	Improve self-summarizing ability Improve project demonstration ability	Process evaluation (self- evaluation, mutual evaluation,, teachers' evaluation), works assessment

## IV. Course Assessment

The course assessment includes two aspects: operation norm, professional qualifications assessment, and works assessment. The total score is 100 points.

Among them, the professional qualifications assessment accounts for 20% of the total scores, which can be comprehensively judged according to students' attendance, study discipline, and learning attitude;

Works assessment accounts for 80% of the total score of the assessment. The performance of the work is based on the scoring criteria. According to the results of the works submitted by students, objective evaluation and scoring are conducted.

Items, contents, methods, standards and proportions of the assessment of "*Planning and Design in Residential Area*":

Assessment items	Assessment contents	Assessment methods	Assessment standards	Proportion
Works assessment	Copying works	Assess copying drawings comprehensively submitted by students	1. Accurately express the intention of the building; 2. Can make full use of copying program for design and summary	30%
	Drawings	Assess display boards comprehensively submitted by students	1. With accurate interpretation of design projects, clear topics, and meet design requirements; 2. The design theme is novel, the ideas are open, and the excellent works are well-appraised, with strong originality	50%
Qualification assessment	Professionalism	Observe and record students' general learning disciplines, learning attitudes, etc.	1. Learning seriously, no absence, lateness, and early retreat; 2. Show good work habits, be able to do preparations in advance, with clear ideas, and orderliness; 3. Express and display your design completely and clearly.	20%

## V. Course Implementation Requirements

### (I) Basic requirements for teachers

The teacher of this course requires dual-qualified qualifications, and has the professional and technical skills in architectural design, architectural engineering and related professional fields, has the ability to teach, organize, communicate and express, and has a good professional ethics and sense of responsibility.



## (II) Requirements for practical teaching conditions

Trainin g rooms	Equipment configuration		Equipment functions and requirements	Professional competence cultivation
	Name	Quantity (set/student)		
Architec tural teaching studio	1. Tables and chairs for professional drawing	50 sets	According to the requirements of the drawing and production requirements of related courses, professional equipment shall be configured to meet teaching and training requirements.	The ability to complete the conceptual design of the construction project; the ability to complete the implementation plan for the construction project; the ability to draw the engineering drawing and to build the model.
	2. Projector	1 set		
	3. Computer	2 sets		
	4. Midea air conditioning	1 set		

## (III) Teaching methods and methods

In the course of teaching, this course should highlight the main position of students and the guiding role of teachers, and strive to advocate heuristic, inquiry-style, open-style teaching. Start from the student's cognitive and ability structure characteristics and create problem situations that can help students learn independently. The following teaching methods can be flexibly used in classroom teaching and practical teaching: focused teaching method, interactive teaching method, heuristic teaching, inquiry teaching method, and case teaching method.

Conducting open discussion and comment of assignments, and combine classroom teaching with on-site investigation, so that students can fully and comprehensively understand the design scheme in various aspects and at various levels. It can also cultivate students' oral expression ability and observation ability, improve the ability to analyze problems and solve problems, and form an active open teaching atmosphere to give everyone a good platform for free communication at the same time.

## (IV) Application of teaching materials and digital resources

*Planning and Design in Residential Area* Course Textbook Selection Table

No.	Textbook name	Publisher	Editor	Publication date
1	Planning and Design in Residential Area	Peking University Press	Zhang Yan	July 2016

Planning and Design in Residential Area Course Reference Textbook Selection Table

No.	Textbook name	Textbook type	Publisher	Editor	Publication date
1	Urban Residential District Planning and Design Regulations	National regulations	China Construction Industry Press		May 2016

Residential District Planning and Design Course Digital Resources Selection  
Table

No.	Digital resource name	Resource website
	Residential District Planning and Design Quality Resource Sharing Class	<a href="https://mooc1-1.chaoxing.com/mycourse/teachercourse?moocId=201287402&amp;clazzid=3643051&amp;edit=true">https://mooc1-1.chaoxing.com/mycourse/teachercourse?moocId=201287402&amp;clazzid=3643051&amp;edit=true</a>

## VI. Other Instructions

(I) During the use of this course standard, it is necessary to constantly improve and revise it according to the teaching situation.

(II) The teacher can formulate teaching plans according to the student's learning situation and design more detailed and perfect teaching plans. The reference time for each training item can be adjusted according to the actual situation to ensure the normal training of the project.

(III) In the implementation of teaching of this course, the teacher should also formulate lesson plans based on teaching content and conduct detailed training project design to ensure the successful completion of the teaching tasks.

## Annex 2

# Course Standard of *Design Basis of Architectural Construction*

Course name	Design Basis of Architectural Construction	Teaching department	Department of Environmental Art Design	
Course code	1306020	Assessment nature	Examine	
Leading course	Architectural composition and preliminary design, architectural drawing			
Subsequent course	Computer aided design, high-rise building design			
Total hours	56	Course type	Theory Course	Yes <input type="checkbox"/>
			Practice class	Yes <input type="checkbox"/>
			Theory + Practice	Yes <input type="checkbox"/>
			Integration of theory and practice	Yes <input checked="" type="checkbox"/>
Applicable major	Architectural design			

## I. Course nature

The course Design Basis of Architectural Construction is a specialized course for architectural design majors. It mainly studies the basic principles and application knowledge of the structure and design of civil buildings and industrial buildings. Through learning basic principles, understand the basic contents and methods of architectural structure, and understand the functional problems, structural problems, economic problems and aesthetic problems in architectural design; enables students to master the structural composition, the construction principles and construction methods of all components for houses. Through learning the course, further training students to understand the architectural design intention, consult information about building codes and architectural atlas, etc, so as to deepen the reading of the construction drawings.

## II. Course objective

### (I) Knowledge objective

1. Understand the concept of architecture and architectural structure and understand the contents of architectural classification and architectural grade.
2. Understand the content of architectural design and grasp the composition of architectural structure.
3. Understand the concept of architectural modulus and understand the principle

of modular coordination.

4. Master wall type, use requirement, reinforcement measures of wall body, interior and exterior wall decoration, as well as understand and draw basic structural node of wall body.

5. Master the measures to improve the external wall insulation ability as well as the types and structures of the commonly used partitions

6. Master the type, structure, layout and detail treatment of reinforced concrete floor

7. Master common ground practice and detail structure

8. Understand the design requirements and structural composition of the floor, structure layout and structure of the balcony, and canopy structure, etc.

9. Master the stairs composition and function, common stairs form, the width of the staircase, the gradient of the staircase, and the clearance height related to the stairs

10. Stair related to reinforced concrete stair construction requirements, stair details processing etc.

11. Master the detail construction of stair surface, anti-skid strip, railing and handrails

12. Master roof function, classification, composition, detail structure, and thermal insulation measures, etc.

13. Master the presentation method of roof slope, the formation method of slope, and the way of drainage, etc.

14. Master the composition, classification, flexible waterproof layer structure, and practice and detail structure of flat roof and slope roof

15. Understand the types and setting principles of deformation joints, and master the construction methods of deformation joints

16. Understand the concept of base and foundation and understand the depth and influencing factors of foundation, the type of foundation and the composition of basement

17. Master the damp-proof and waterproof structures of the basement

## **(II) Ability objective**

1. Preliminary ability of building classification, building grading and building construction, and ability to apply the principle of building modular coordination

2. Ability to read and understand the map accurately

3. Cognitive ability with various structures on the floor and balcony and canopy

4. Cognitive ability of the structures of various walls

5. Can carry on the design of simple stair, have the ability of reading of stair sample

6. Master the principles of roof construction, and have the ability of reading and drawing roof maps

7. Capable of deformation joint processing

### **(III) Quality objective**

1. Set up correct outlook on life, values and world; cultivate conscientious and responsible attitude and rigorous and meticulous work style

2. Set up correct moral cognition, straighten out social moral behavior level and good moral accomplishment; dedicated to work, honest and trustworthy and serve the society

3. Improve students' physical quality level and lay a solid foundation for work, life and study

4. Form good mental qualities, with full adaptability, can control emotion moderately and maintain good interpersonal relationship

## **III. Course content and teaching design**

### **(I) Course design idea**

The design of this course is based on the training plan of architectural design professionals regulated by the college, combining with the technical standard of architectural design post and professional qualification standard, etc., starting from the "analysis of work task and professional ability", closely following the needs of professional action area and taking the construction market behavior as the carrier, dividing the course content into learning units that take specific task as carrier, each learning unit contains one or several tasks that are internally related, integrating theoretical knowledge, practical knowledge and professional attitude into one, so as to realize the integration of learning process and working process. The implementation of each specific task covers both theoretical and practical teaching contents.

## (II) Teaching content and teaching design

No.	Special abilities	Training programs	Reference hours	Teaching contents	Teaching requirements	Evaluation
1	Introduction	Introduction of architectural structure	6	<ol style="list-style-type: none"> <li>1. Architecture composition</li> <li>2. Type of architecture</li> <li>3. Influencing factors and design principles of architectural structure</li> <li>4. Architectural modular coordination</li> </ol>	<ol style="list-style-type: none"> <li>1. Understand the concepts of architecture and architectural structure, and understand the content of architectural classification and architectural grade</li> <li>2. Understand the concept of architectural module and understand the principle of modular coordination</li> </ol>	Process evaluation (self evaluation, mutual evaluation, teachers' evaluation)
2	Wall	Structure of the wall	8	<ol style="list-style-type: none"> <li>1. Wall overview</li> <li>2. Masonry wall</li> <li>3. Partition wall</li> <li>4. Wall decoration</li> <li>5. Glass curtain wall (knowledge extension)</li> </ol>	<ol style="list-style-type: none"> <li>1. Know wall type, use requirement, reinforce measures for wall body, interior and exterior wall decoration, understand and draw basic structural node of wall body;</li> <li>2. Know the measures to improve the external wall insulation capacity and the types and structures of the commonly used partition wall.</li> </ol>	Process evaluation (self-assessment, mutual evaluation, teacher s' evaluation); works evaluation.
3	Floor stratum	Structure of the floor stratum	14	<ol style="list-style-type: none"> <li>1. Type and composition of floor</li> <li>2. Reinforced concrete floor slab</li> <li>3. Composition and structure of floor</li> <li>4. Structure of balcony canopy</li> </ol>	<ol style="list-style-type: none"> <li>1. Know the type, structure, layout and detail treatment of reinforced concrete floor slab;</li> <li>2. Know the common ground practices and details;</li> <li>3. Understand the design requirements of the floor;</li> <li>4. Know the structure of the formation of the building, the structure layout and structure of the balcony, and the structure of canopy</li> </ol>	Process evaluation (attendance, attitude, independent completion of works, teachers' evaluation); Works evaluation.
4	Stairs	Structure of the stairs	14	<ol style="list-style-type: none"> <li>1. Classification, composition and scale of stairs</li> <li>2. Reinforced concrete stairs</li> <li>3. Detail structure of stairs</li> </ol>	<ol style="list-style-type: none"> <li>1. Know the composition and function of stairs, common stair forms, width and slope of the staircase, and clearance height related to the staircase;</li> <li>2. Know about the requirements of reinforced concrete stair</li> </ol>	Process evaluation (attendance, attitude, independent completion of works, teachers' evaluation);

					construction and detailed treatment; 3. Know the details of stair surface, anti-slip strip and handrail.	Works evaluation.
5	Roof	Structure of the roof	8	1. Roof type 2. Flat roof structure 3. Slope roof structure	1. Know the function and classification of the roof and understand the requirements of roof design; 2. Familiar with the presentation method of roof slope, master the formation method and drainage pattern of roof slope; 3. Know the composition construction level, practice, detail structure and thermal insulation construction measures of flat roof and slope roof.	Process evaluation (attendance, attitude, independent completion of works, teachers' evaluation); Works evaluation.
6	Foundation and basement	Structure of foundation and basement	4	1. Foundation and base 2. Basic types and structures 3. Basement	1. Know the concept of foundation and base; 2. Understand the depth of the foundation and the factors that affect the depth of the foundation; 3. Understand the types of the foundation and the composition of the basement; 4. Understand the damp-proof and waterproof structure of the basement.	Process evaluation (attendance, attitude, independent completion of works, teachers' evaluation); Works evaluation.
7		Course review and evaluation	2	Comprehensive evaluation	Master the methods and skills of displaying and explaining self-training works.	Process evaluation (attendance, attitude, independent completion of works, teachers' evaluation); Works evaluation.

#### IV. Course assessment

In order to comprehensively and synthetically assess students' learning situation in the course *Design Basis of Architectural Construction*, the course assessment should combine work assessment with quality assessment. The specific assessment methods are as follows:

The total score is 100 points, of which the work assessment accounts for 80% of the total score of the course assessment. The work results are based on the scoring standard; the results are objectively evaluated and scored according to the results of the final submission of students' work;

Quality assessment accounted for 20% of the total score of the course. Results are carried out with comprehensive evaluation according to students' learning discipline in normal times, learning attitude and pre-school preparation.

The assessment items, contents, methods, standards and proportion of the course *Design Basis of Architectural Construction* are:

Assessment items	Assessment contents	Assessment methods	Assessment standards	Proportion
Works assessment	1. Copy the drawing of the main components of the architecture; 2. Draw the structural drawings of the main components according to a small villa's plan, elevation and profile.	Comprehensive evaluation of the work submitted by the students	1. Correct calculation, quota and rate; 2. Complete, beautiful and organized contents' 3. High completion of the work.	80%
Quality assessment	1. Learning discipline in normal times; 2. Learning attitude; 3. Pre-school preparation; 4. Classroom performance	Observe and record students' learning discipline and learning attitude, and make comprehensive evaluation	1. Study conscientiously, without absence, lateness and early retreat; 2. Reflect good work habits, prepare ahead of schedule, clear thinking, well-organized and orderly work; 3. Do good job of learning notes and review the knowledge in time.	20%

#### V. Course implementation requirements

##### (I) Basic requirements for teaching teachers

Teaching teachers in this course are required to have double quality, have the professional level and technical ability of architectural design, construction technology and other related majors, and have the ability of teaching, organizing, communicating and expressing, and good professional ethics and sense of responsibility.

##### (II) Requirements for practical teaching conditions



Training room	Equipment configuration		Equipment functions and requirements	Vocational ability training
	Name	(set/student)		
Architectural drawing training room	Drawing desk	1	Drawing Report exchange	Hand-painted expressive ability Drawing and reporting ability
	Chair	1		

### (III) Teaching methods and means

According to the characteristics and training objectives of vocational college students, the teaching objectives and curriculum characteristics of this course, the optimization method suitable for this course is chosen, considering the factors such as teaching effectiveness and teaching operability, the following teaching methods are recommended for this course:

1. Demonstration teaching method: in the course of theoretical teaching, teachers teach basic theories, basic knowledge and practical applications of software according to the computer effect diagram performance course teaching system. Teachers prepare the teaching materials according to the training program, and demonstrate the operation method of the software to the students according to the training process and steps, then students carry out practical operation according to the teacher's presentation method. The demonstration teaching method is intuitive and easy to understand, and has good teaching effect.

2. Case analysis teaching method: teachers use a large number of practical cases to elicit theoretical connotation and deepen students' understanding of software theory. Teachers leave cases after class for students to carry out analysis and summary, and finally form the form of analysis drawings to enhance the purpose of enhancing knowledge in the classroom. This kind of teaching method can cultivate students' autonomous learning, also can strengthen students' thinking of software problems and the understanding of basic knowledge, problem oriented case analysis can stimulate students' thinking ability to the greatest extent, and enhance the ability of students to apply software knowledge to solve various practical problems, and can form teaching interaction between teachers and students in the course of teaching.

3. Scenario simulation method: in the process of software teaching, design one or more situations related to realistic problems according to teaching contents. It contains questions suspense which are closely related to classroom learning content, to guide students to have a strong desire towards the content of teaching, and to study in the best learning state. In this way, it can not only enrich the contents of students' own material resources, but also improve students' ability to solve practical problems.

### (IV) Textbook and digital resource application

#### Textbook selection table for *Design Basis of Architectural Construction*

Number	Textbook name	Type of textbook	Press	Editor	Date of publication
1	<i>Architectural Structure and Design Foundation</i>		China Construction Industry Press	Han Jianrong	April 2015

**Course reference selection table for *Design Basis of Architectural Construction***

Number	Textbook name	Type of textbook	Press	Editor	Date of publication
1	<i>Architectural drawing and structure</i>		Industrial Press of machinery industry	Wei Song	May 2016

**Course digital resources selection table for *Design Basis of Architectural Construction***

Number	Digital resource name	Resource Website
1	High quality resource sharing course <i>Design Basis of Architectural Construction</i>	<a href="https://mooc1-1.chaoxing.com/mycourse/teachercourse?moocId=200540774&amp;clazzid=2669648&amp;edit=true">https://mooc1-1.chaoxing.com/mycourse/teachercourse?moocId=200540774&amp;clazzid=2669648&amp;edit=true</a>

**VI. Other descriptions**

(I) When using this course standard, it is necessary to constantly improve and revise it according to the teaching situation.

(II) The teacher can formulate teaching plans according to the students' learning situation and design more detailed and perfect teaching plans. The reference time for each training item can be adjusted according to the actual situation to ensure the normal training of the project.

(III) In the course of teaching, teachers should also make teaching plans and design detailed training projects according to the teaching content in order to ensure the successful completion of the course-teaching task.