Appendix A-9-1:Teaching Syllabus for Production Practice

Teaching Syllabus for Production Practice

Course Name	production internship				Course Code	**9032615200**	
Chinese name	生产实习						
Applicable Majors	Civil Engineering（Building Engineering Direction☑Road and Bridge Direction ☑Urban Rail Transit Direction☑）						
Course Nature	General Education Course☐ Professional Core Course☐ Intensive Practice Course ☑				Disciplinary Basic Course☐ Self - development Course☐ （Elective Compulsory☑）		
Offering Unit	School of Civil Engineering						
Total Class Hours	4 weeks + 6 weeks (Summer Vacation)	Credits	10	Contact Hours	120	Self - study Hours	180
Prerequisite Courses	Design of Concrete Structures, Design of Steel Structures, Principles and Methods of Construction						
Teaching Materials and Resources	Course Textbook: Reference Materials: Teaching Website:						

一、Course Introduction

This course is a follow - up to "Principles and Methods of Construction" and is a compulsory professional course for civil engineering majors. It is a practical course that comprehensively applies professional knowledge such as the principles of concrete structure design, steel structure design, principles and methods of construction, as well as relevant knowledge in the fields of building engineering, road and bridge engineering, and urban rail transit engineering. The teaching objectives are as follows: to cultivate students' ability to apply professional knowledge, read relevant codes, participate in engineering practices, and solve complex civil engineering problems; to endow students with the basic qualities and capabilities required for technical and research work related to construction management; and to lay a foundation for their future work in the construction management and structural design of complex engineering projects.

二、Graduation Requirements Supported by This Course and Their Implementation Paths

（1）Graduation Requirements Supported by This Course

Serial	Graduation Requirement	Specific Content of Graduation Requirement Indicator Points

Number	Indicator Point	
1	Graduation Requirement 5.1	Be familiar with modern tools related to civil engineering, understand their principles and methods of use, comprehend their limitations, and possess the ability to develop or select tools.
2	Graduation Requirement 6.1	Be familiar with the standards, policies, laws, and regulations of occupations and industries related to civil engineering, and understand the impact of different social cultures on engineering activities.
3	Graduation Requirement 6.3	Comprehend the legal and social responsibilities that civil engineers should assume in engineering practices.
4	Graduation Requirement 7.3	Have the awareness of using energy - saving and environmentally friendly new materials and conducting green construction.
5	Graduation Requirement 11.1	Be able to understand the engineering management issues involved in the cost composition of the full life cycle of civil engineering projects, and possess the ability to apply engineering management principles to formulate management plans for common engineering projects in a multi - disciplinary environment.

（2）Realization Paths of Graduation Requirement Indicator Points in This Course

1.Course Objectives

Through the teaching of this course, students will master basic knowledge and possess certain construction management capabilities. The specific course objectives are as follows:

Course Objective 1: Be familiar with modern tools related to civil engineering, understand their limitations, and have the ability to select appropriate tools.

Course Objective 2: Be familiar with the standards, policies, laws, and regulations of occupations and industries related to civil engineering.

Course Objective 3: Comprehend the legal and social responsibilities that civil engineers should assume in engineering practices.

Course Objective 4: Have the awareness of using energy - saving and environmentally friendly new materials and conducting green construction.

Course Objective 5: Master the principles of civil engineering project management, collaborate to complete management plans for common engineering projects in a multi -

disciplinary environment, and possess certain organizational, management, and leadership abilities.

2.Corresponding Relationship between Course Teaching Objectives and Graduation Requirement Indicator Points

Graduation Requirement Indicator Points	Course Teaching Objectives
Graduation Requirement 5.1	Course Objective 1
Graduation Requirement 6.1	Course Objective 2
Graduation Requirement 6.3	Course Objective 3
Graduation Requirement 7.3	Course Objective 4
Graduation Requirement 11.1	Course Objective 5

三、Expected Learning Outcomes

The expected learning outcomes of this course are as follows:

Training Objectives /Knowledge Units	Competency Items	Initial Proficiency Level	Required Proficiency Level	Expected Learning Outcomes	Corresponding Graduation Requirements
1. Modern Tools	◆ Be familiar with modern tools related to civil engineering, understand their limitations, and have the ability to select appropriate tools.	L2	L3	**1.** Select suitable experimental (testing) methods, distinguish and choose appropriate modern tools.	6.1
2.Codes and Standards	◆ Be familiar with the standards, policies, laws, and regulations of occupations and industries related to civil engineering.	L2	L3	**2.** For complex civil engineering problems, select appropriate codes,standards,and regulations.	5.1
3.Legal and Social Responsibilities	◆ Comprehend the legal and social responsibilities that civil engineers should assume in	L2	L3	**3.** Explain the understanding and implementation approaches of legal and social responsibilities during the internship.	6.3

Training Objectives /Knowledge Units	Competency Items	Initial Proficiency Level	Required Proficiency Level	Expected Learning Outcomes	Corresponding Graduation Requirements
	engineering practices.				
4.Green Construction	◆ Have the awareness of using energy - saving and environmentally friendly new materials and conducting green construction.	L2	L3	**4.** Explain the understanding and implementation approaches of energy conservation, environmental protection, and green construction during the internship.	7.3
5.Project Management	◆ Master the principles of civil engineering project management, collaborate to complete management plans for common engineering projects in a multi - disciplinary environment, and possess certain organizational, management, and leadership abilities.	L2	L3	**5.** Participate in the preparation of special construction plans.	11.1

三、Course Assessment

（一）Course Assessment Structure

Assessment Items		Proportion	Proportion
Daily Performance	Logs	15%	Two logs per week, recording the daily work status and extracting relevant code provisions. Evaluated by the instructor.
	Weekly Reports	45%	A total of three reports. The contents are as follows: 1. Modern Tools; 2. Legal and Social Responsibilities; 3. Green Construction. Evaluated by the instructor.
Outcome Assessment	Internship Report	20%	Under the guidance of the on - site instructor, participate in the preparation of a special construction plan. Evaluated by the instructor.
	Internship Defense	20%	Evaluated by the defense teachers.
Total		100%	

（二）Course Assessment Evaluation Criteria

Assessment Item 1: Logs

Evaluation Criteria	Evaluation Criteria	Score
Logs	The recorded content is valuable, well - organized; the output is neat, and the expression is standardized. Can accurately draw graphs and tables for expression.	90-100 points
	The recorded content is valuable, relatively well - organized; the output is neat, and the expression is standardized.	80-89 points
	The recorded content is relatively valuable, relatively well - organized; the output is relatively neat, and the expression is relatively standardized.	70-79 points
	The recorded content is relatively valuable, but the organization is lacking; the output is less neat, and the expression is less standardized.	60-69 points
	The recorded content lacks value, the organization is unclear; the output is untidy, and the expression is not standardized.	0-59 points

Assessment Items 2 and 3: Weekly Reports and Internship Reports

Project	Evaluation Criteria	Score
Weekly Reports and Internship Reports	The content meets the requirements of the task assignment, is valuable, and well - organized. The output is neat, the expression is standardized, the chart design is reasonable, and the expression is accurate.	90-100 points
	The content meets the requirements of the task assignment, is relatively well - organized. The output is neat, the expression is standardized, the chart design is relatively reasonable, and the expression is relatively accurate.	80-89 points
	The content meets the requirements of the task assignment, is relatively well - organized. The output is relatively neat, the expression is relatively standardized, the chart design is basically reasonable, and the expression is basically accurate.	70-79 points
	The content meets the requirements of the task assignment, but the organization is lacking. The output is less neat, the expression is less standardized, the chart design is less reasonable, and the expression is less accurate.	60-69 points
	The content meets the requirements of the task assignment, but the organization is unclear. The output is untidy, the expression is not standardized, and unable to design charts independently for expression.	0-59 points

Assessment Item 4: Internship Defense

Evaluation Criteria	Score
The presentation materials are complete, well - organized, of practical value. The introduction language is concise and the expression is clear. Answers to questions are accurate, with unique insights, and professional terms are used accurately.	90-100 points
The presentation materials are complete, relatively well - organized, of great practical value. The introduction language is concise and the expression is relatively clear. Answers to questions are relatively accurate, and professional terms are used accurately.	80-89 points
The presentation materials are complete, relatively well - organized, of certain practical value. The introduction language is relatively concise and the expression is relatively clear. Answers to questions are relatively accurate, and professional terms are used relatively accurately.	70-79 points
The presentation materials are relatively complete, but the organization is lacking, of certain practical value. The introduction language is less concise and the expression is less clear. Answers to questions are less accurate, and professional terms are used less frequently.	60-69 points
The presentation materials are haphazardly pieced together, with chaotic logic. The introduction language is verbose and the expression is unclear. Answers to questions are inaccurate, and no professional terms are used.	0-59 points

五、Course Teaching Methods

The course adopts the form of decentralized internships. During the teaching process, students are regarded as the main body of learning. We guide students to study independently, cultivate their awareness of active exploration, rigorous work attitude, and their abilities to recognize and solve practical engineering problems as well as perform engineering calculations. Also, we encourage students' innovative thinking. The teaching form mainly focuses on students' self - study, supplemented by teachers' guidance. The main measures are as follows:

1) Set certain internship tasks to cultivate students' practical ability during the implementation of engineering projects.
2) Infiltrate the student - centered teaching concept throughout the entire teaching process, guiding students to learn independently and think critically.

3) Pay attention to students' individualized development during individual guidance, and encourage students with extra capacity to think innovatively.

4) Focus on process control, enabling students to truly master the methods and steps of civil engineering project implementation during the internship.

六、Course Evaluation and Continuous Improvement Mechanism

（一）Course Evaluation

The course evaluation is carried out once per semester. The scoring method is adopted for evaluation according to the following content:

Course Objective 1 is evaluated based on the scores of weekly reports.

Course Objectives 2, 3, and 4 are evaluated respectively based on the scores of Weekly Report 1, Weekly Report 2, and Weekly Report 3.

Course Objective 5 is evaluated based on the scores of the special construction plan.

Discussions, Q&A sessions, and internship defenses are not included in the achievement evaluation.

（二）Continuous Improvement Mechanism

（1）Establish a continuous improvement system

① Form a continuous improvement group for this course.

② The leader of the continuous improvement group is responsible for organizing, implementing, and supervising the continuous improvement process.

③ Develop continuous improvement measures.

（2）Establish the course continuous improvement group

Leader: The course coordinator　　Members: Members of the course team

（3）Course continuous improvement methods

① **Daily performance assessment mechanism**: According to the learning situation of each cohort of students, teachers in the course group must summarize and count various indicators of students' daily performance assessment every four weeks, adjust students' states in a timely manner, and make corresponding records.

② **Final - exam assessment mechanism**: Analyze the final - exam papers, count the scores of each part of the test questions, use the statistical results for overall analysis and research of this course, and make improvements for the next cohort of students.

（4）**Course continuous improvement measures**

① For daily performance assessment, measures such as holding symposiums, forming discussion groups, setting up study groups, and communicating with students individually are adopted for improvement.

② For final - exam assessment, based on the problems students encounter in the exam and the key content of this course, measures such as unified tutoring for students taking make - up exams are adopted for improvement.