



# **Appendix 5-1: Process Quality Management and Assurance Methods**



**Appendix 5-1: Process Quality Management and Assurance Methods**

**Institutional documents that demonstrate the evaluation mechanisms for course objectives and graduation requirements.**

Serial Number	Document Name	Notes
1	"Regulations and Implementation Measures for the Evaluation of Course Objectives Achievement at Hunan City University" (Document No. Xiangchengyuan Pingfa [2018] No. 15)	Evaluation of Course Objectives Achievement
2	"Methods for the Evaluation of Course Objectives Achievement at School of Civil Engineering, Hunan City University" (Document No. Xiangchengyuan Tumuyuanfa [2018] No. 22)	
3	"Implementation Measures for Quality Monitoring of Teaching Process at School of Civil Engineering, Hunan City University" (Document No. Xiangchengyuan Tumuyuanfa [2019] No. 05)	
4	"Guiding Opinions on the Evaluation of Graduation Requirements Achievement at Hunan City University" (Document No. Xiangchengyuan Pingfa [2018] No. 16)	Evaluation of Graduation Requirements Achievement
5	"Methods for the Evaluation of Graduation Requirements Achievement at School of Civil Engineering, Hunan City University" (Document No. Xiangchengyuan Tumuyuanfa [2018] No. 23)	

# **Hunan City University Teaching Quality Monitoring and Assessment Center**

Document No. Xiangchengyuan Pingfa [2018] No. 15”

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## **Management and Implementation Measures for the Evaluation of Course Objectives Achievement at Hunan City University**

### **Chapter 1: General Provisions**

#### **The first article:**

In order to further implement and carry out Xi Jinping President of the People's Republic of China In order to further implement the important discourses on education and the spirit of the National Education Conference, to continuously deepen the reform of undergraduate education, to advance the connotation construction of majors and courses, to establish an evaluation and improvement mechanism based on outcomes, and to ensure and enhance the quality of talent cultivation, this regulation is hereby formulated in accordance with the "National Standards for the Quality of Undergraduate Education in General Higher Education Institutions" and relevant documents on professional certification, and in combination with the actual situation of the university.

#### **Article 2**

Courses are the core elements of talent cultivation, and the quality of courses directly determines the quality of talent cultivation. Course objectives are the expected levels of achievement in knowledge, skills, and quality that students are expected to attain after completing a course. These objectives serve as the basis for instructors to determine the content, methods, and assessment approaches of teaching. The evaluation of course objectives achievement is a micro-level assessment of the quality of professional talent cultivation, and its results are important references for evaluating the achievement of graduation requirements and for continuous improvement of teaching.

#### **Article 3**

The evaluation of course objectives achievement follows the philosophy of "student-centeredness, outcomes-oriented, and continuous improvement."

#### **Article 4**

This regulation applies to undergraduate programs at our university that participate in accreditation (assessment). Other programs are encouraged to follow these guidelines.

## **Chapter 2: Responsible Institutions and Responsible Persons**

### **Article 5**

The evaluation of course objectives achievement shall be guided and coordinated by the Academic Affairs Office. The Academic Affairs Office shall guide colleges in conducting evaluations of course objectives achievement by major and coordinate the smooth completion of such evaluations across different colleges. Colleges are the main bodies responsible for organizing and implementing these evaluations. Each college shall establish a leadership group for evaluation work and appoint specific individuals to be responsible for the evaluation process. The members of the evaluation leadership group generally include the deputy dean in charge of teaching, the deputy secretary in charge of student affairs, the major leader, and the course leader. Among them, the major leader is the primary responsible person, and the course leader is the direct responsible person. The college's academic affairs office, student affairs office, and relevant course instructors shall participate in and support the evaluation work.

### **Article 6**

The evaluation of course objectives achievement shall be implemented under the responsibility system of the course leader. For courses taught by a single instructor, the course instructor shall be the course leader. For courses taught by multiple instructors, the college shall designate an instructor who is diligent, experienced in teaching, and highly skilled as the course leader from the teaching team.

## **Chapter 3: Evaluation Basis and Evaluation Cycle**

### **Article 7 Basis for Evaluation.**

The main bases for evaluation include:

1. Course Syllabus: It should include the correspondence between course objectives and graduation requirements, the assessment components that support the achievement of course objectives, teaching content, teaching methods, examination (assessment) content and methods, and the evaluation methods for the achievement of course objectives.

2. Records of Course Assessment Components: These include quantitative or qualitative assessment data and materials from both summative assessment

components (such as final exams) and formative assessment components (such as in-class quizzes, classroom discussions, homework assignments, laboratory reports, short papers, literature translations, and project presentations).

3. Survey Data and Materials on Student Learning Outcomes: Data and materials collected through questionnaires conducted at the end of the course to assess students' learning outcomes.

4. Other Data and Materials Reflecting the Achievement of Course Objectives: Any additional relevant data and materials that can reflect the achievement of course objectives.

#### **Article 8 Evaluation Cycle.**

The achievement of course objectives shall be evaluated once per teaching cycle, specifically after the course assessments at the end of each semester.

### **Chapter 4: Evaluation Methods and Evaluation Procedures**

#### **Article 9 Evaluation Methods.**

The evaluation shall be conducted in accordance with the evaluation methods stipulated in the course syllabus.

#### **Article 10 Evaluation Procedures.**

5. After the completion of each course, the course teaching team shall generally summarize the evaluation basis within two weeks, conduct an analysis of the relevance to the output objectives, form an analysis report, and submit it to the evaluation leadership group.

6. The evaluation leadership group shall review the analysis report and related materials. If the materials are qualified, they shall issue an instruction to proceed with the course evaluation. If not qualified, the materials shall be returned to the course teaching team for reorganization.

7. The course teaching team shall conduct the evaluation in accordance with the course objective evaluation methods specified in the syllabus, analyze the course teaching process and student learning conditions, propose continuous improvement measures, and submit an evaluation report to the evaluation leadership group.

8. The evaluation leadership group shall organize the review of the evaluation report and submit it to the college's academic affairs office for archiving.

### **Chapter 5: Evaluation Results and Application**

#### **Article 11 Evaluation Results.**

After the evaluation of course objectives is completed, a course objective achievement analysis report shall be promptly compiled, including (but not limited to) the following: basic course information, the correspondence between course objectives and graduation requirements, the total score and weight of each assessment component supporting the course objectives, analysis of the course objective achievement, and continuous improvement measures. The analysis report and related supporting materials (such as assessment scores, survey questionnaires, etc.) should be complete and traceable, and shall be archived by the college.

**Article 12 Application of Results.**

The evaluation results shall be promptly fed back to all course teaching subjects and the course teaching team. They shall also serve as an important basis for the major to inspect the effectiveness of teaching reforms, promote the connotation construction of courses, and for teachers to make targeted improvements to relevant teaching components, adjust and update teaching content, improve classroom teaching methods, and reform assessment content and methods. Additionally, the evaluation results are the main supporting data for the evaluation of graduation requirements achievement.

**Chapter 6: Implementation**

**Article 13**

The evaluation of course objective achievement shall be supervised by the School's Quality Monitoring and Assessment Center, coordinated and guided by the Academic Affairs Office, and specifically implemented by the colleges. Colleges shall develop specific evaluation implementation plans based on this regulation, in combination with the characteristics of their disciplines and majors and actual conditions. The major leaders shall promptly organize the evaluation of course objective achievement within their majors. Course leaders and instructors shall conduct the evaluation carefully and propose improvement measures to form a continuous improvement mechanism of "evaluation - feedback - improvement," thereby promoting the continuous improvement of course teaching quality.

**Article 14 Collaborative Work among Colleges.**

For courses taught by instructors from non-major colleges, the Academic Affairs Office shall organize the teaching colleges to follow the evaluation methods and related documents for course objective achievement of the major to which the course

belongs, and complete the review, organization, and summarization of relevant materials, which shall then be submitted to the college of the major for archiving.

## Article 15 Strengthening the Review Mechanism.

The college's course objective achievement evaluation implementation plan shall be executed after being reviewed and signed by the deputy dean in charge of teaching. The evaluation analysis report, after being reviewed and signed by the major leader and the deputy dean in charge of teaching, shall be submitted to the college's academic affairs office for archiving.

## Chapter 7: Supplementary Provisions

**Article 16** This regulation shall come into effect from the date of issuance.

**Article 17** The interpretation of this regulation shall be the responsibility of the School's Quality Monitoring and Assessment Center.

The Center for Quality Monitoring and Assessment  
December 12, 2018



# Documents of the School of Civil Engineering, Hunan City University

Document No. 22 [2018] of the School of Civil Engineering, Hunan City University.

## Evaluation Methods for the Achievement of Course Objectives in the School of Civil Engineering

To implement the fundamental task of cultivating virtue and talent, enhance the level of education and teaching, improve the quality of talent cultivation, standardize the teaching components and processes of each major in the School of Civil Engineering, and effectively conduct evaluations of course achievement, this regulation is hereby formulated in accordance with the relevant documents of the university and in combination with the actual situation of the school.

### 1. Evaluation Organization

The evaluation work group for course achievement shall be composed of members of the Teaching Steering Committees of each major, responsible for the organization, supervision, and management of course objective achievement evaluations. The course leaders shall be specifically responsible for the evaluation of course objectives, with course instructors participating in the evaluation process. The Academic Affairs Office and the Student Affairs Office shall assist in completing the evaluation of course objective achievement.

### 2. Evaluation Cycle

For all courses, the evaluation shall be conducted at the end of each semester.

### 3. Data Collection

The evaluation data for course objective achievement must cover all students enrolled in the course. The data used for course objective evaluation shall be derived from the assessment components specified in the course syllabus, including final exam papers, in-class quizzes, assignments, major assignments (projects), laboratory reports, internship reports, design (plan) specifications (calculation books), and grading forms. The head of the course teaching team shall organize team members to sort out the raw data and fill in the OBE Teaching and Academic Affairs Platform, submitting the course files online. The sources of data are detailed in the table below:

**Table of Data Sources for Course Objective Achievement Evaluation**

Course Type	Data Sources	Data Forms	Note
Theoretical Course	Course File Materials	Assignments, Major Assignments (Group Projects), In-class Quizzes, Final Exam Papers, Process Assessment of Learning, Student Self-assessment/Peer-assessment Forms, Teacher Grading Forms, etc.	The teaching team determines the specific forms of data when formulating the syllabus.
Laboratory Course	Laboratory Reports, Comprehensive Evaluation of Laboratory	Laboratory Operation Assessment Forms, Tests, Laboratory Reports, Student Self-assessment/Peer-assessment Forms, Teacher Grading Forms, etc.	



	Performance		
Internship	Internship Report	Internship Log, Thematic Weekly Journal, Thematic Report, etc.	
Course Design	Course Design Archival Materials	Course Design Outcomes, Student Peer-assessment Forms, Teacher Grading Forms	
Graduation Design	Graduation Design Archival Materials	Design Proposal Manual, BIM Model, Hand Calculation Book, Computer Calculation Book, Construction Drawings, Thesis Defense Review, etc.	

#### 4. Evaluation Methods

The evaluation of course objective achievement is based on the average value of student achievement assessment scores. It is recommended to use three methods: Course Assessment Score Analysis (referred to as the Scoring Method), Project Rating Method, and Grading Form Method. The teaching team may also, after review and approval, supplement other methods according to the needs of the teaching design. The details are as follows:

**Table of Evaluation Methods**

Course Objectives Aligned with Graduation Requirements	Evaluation Methods	Notes	
1.1/1.2/1.3	Scoring Method		
8.1/8.2	Scoring Method	Requires that the content of the entire ideological and political course or relevant teaching content of non-ideological and political courses aligns with the secondary indicators of graduation requirements.	
6.3/12.1/12.2 (Legal and Social Responsibility/Lifelong Learning)	Grading Form Method	When it is difficult to evaluate student abilities using appropriate	Combination of student self-assessment and teacher grading
7.2 (Impact of Engineering Practice on Environment and Sustainable		assessment data for course objectives, the Grading Form Method is used.	Student self-narration and teacher grading

Development))			
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10.1 (Communication and Interaction)			Student Peer-assessment, Teacher Grading
Other Indicator Points	Project Rating Method, Scoring Method	Core courses of the major must reasonably design project-based assessment capabilities and adopt the Project Rating Method.	

The specific evaluation methods are as follows:

### Project Rating Method

1.For all core theoretical courses of the major that focus on purely technical competencies, corresponding projects that reflect the course objectives must be designed. The evaluation value for the achievement of this competency will be assessed based on the project outcomes.

$$\text{达成评价值} = \frac{\text{项目相关任务得分平均值}}{\text{项目相关任务总分}}$$

### 2.Scoring Method

The evaluation value for the achievement of course objectives

$$V = \frac{\sum_{i=1}^n S_i W_i}{100 \times \sum_{i=1}^n W_i}$$

#### In the formula:

S —— The average score of all students enrolled in the course for a specific assessment method related to the course objective.

W —— The weight of the assessment method.

n —— The number of assessment methods related to the course objective.

The calculation formula for S is as follows: :

$$S_i = \frac{\sum_{j=1}^m a_j t_j}{\sum_{j=1}^m t_j}$$

### In the formula:

A —— The average score of all students enrolled in the course for a specific assessment method related to the course objective, for a particular knowledge point, knowledge unit, or task.

t —— The weight of the knowledge point/knowledge unit/task. For theoretical courses, the weight is calculated based on the proportion of in-class and out-of-class hours for that knowledge point/knowledge unit. For practical courses, the weight is determined by the course team and reviewed by the working group.

m —— The number of knowledge points/knowledge units/tasks related to the course objective.

### 3. Grading Form Method

Based on students' performance in practical teaching components, the achievement of a course objective is described by scoring and filling in the grading form on a percentage basis. This includes student self-assessment, student peer-assessment, and teacher grading. The corresponding evaluation value for the course objective is

$$\text{课程目标评测值} = \frac{\sum \text{某项评分} \times \text{该评分方式权重}}{100 \times \sum \text{权重}}$$

### 5. Course Achievement Evaluation Results and Application of Results

The evaluation values for each course objective are weighted according to the weights specified in the course syllabus to calculate the overall course achievement evaluation result.

The course achievement evaluation results are primarily used for continuous improvement of course teaching, as the basis for evaluating the achievement of graduation requirements, and also serve as an important criterion for the assessment and recognition of teaching staff.

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School of Civil Engineering

December 14, 2018



# **Document of the School of Civil Engineering, Hunan City University**

Xiangcheng Institute of Civil Engineering Document No. 5 [2019]

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## **Implementation Measures for the Quality Monitoring of the Teaching Process in the School of Civil Engineering**

To implement the fundamental task of cultivating virtue and talent, enhance the level of education and teaching, and improve the quality of talent cultivation, the School of Civil Engineering standardizes the quality monitoring of the teaching process. Based on the requirements of the General Standards for Engineering Education Accreditation and the Assessment (Accreditation) Documents for Civil Engineering Majors in Higher Education Institutions, and in accordance with the new documents from the university and the actual situation of the School of Civil Engineering, this implementation plan is hereby formulated through further revision and improvement.

### **One. Working Institutions**

The quality monitoring of the teaching process is the overall responsibility of the Teaching Steering Committee of the School of Civil Engineering (hereinafter referred to as the College Teaching Steering Committee). A Quality Monitoring Group is established under the committee to be specifically responsible for the organization and implementation.

### **Two. Responsibilities**

- 1.The main responsibilities of the Quality Monitoring Group are as follows:
- 2.To revise and improve the quality standards for each teaching component.
- 3.To organize and implement the quality monitoring of the teaching process.
- 4.To organize the collection of data and evaluate its rationality.
- 5.To conduct analysis of teaching effectiveness.
- 6.To participate in the formulation of continuous improvement plans.

### **Three. Quality Monitoring Process**

#### **(1) Establishing Quality Standards for Each Teaching Component**

Referring to the university's quality standards for teaching components, the professional quality standards for each teaching component are revised and improved.

#### **(2) Conducting Quality Monitoring of the Teaching Process**

The quality monitoring process for the teaching process is shown in Figure 1 (attached).

### **1. Pre-class Monitoring**

#### **{1}. Review of Course Syllabus**

The course syllabus must be reviewed before the start of the class to ensure that the course objectives support the achievement of the relevant graduation requirement indicators. The review includes, but is not limited to, the following content:

①: Whether the format of the syllabus meets the requirements of the new syllabus based on outcome-oriented education.

② Whether the course objectives (the role and position of the course in the curriculum, as well as the requirements for knowledge, skills, and qualities) are clearly defined;

③ Whether the course objectives support the relevant indicators of graduation requirements;

④ Whether the course content and requirements align with the course objectives;

⑤ Whether the course content arrangement and allocation of class hours are scientifically reasonable;

⑥ Whether the selection of textbooks and reference materials is appropriate.

The syllabus review is coordinated by the deputy dean in charge of teaching, and organized by the College Teaching Steering Committee, with members of the Quality Monitoring Group, department heads, and course leaders participating in the review. The "Course Syllabus Review Form" (see Appendix 1) shall be completed.

## **{2}. Review of Teaching Resources and Teaching Design**

Before the start of the course, the course teaching team should conduct the construction of teaching resources and design the teaching plan. The Quality Monitoring Group will review based on the quality standards for each teaching component, assess whether the teaching resources and design meet the requirements for course commencement, and provide a conclusion on whether the course can proceed. If the conclusion is that the course cannot proceed, the course teaching team should make corrections and resubmit to the Quality Monitoring Group for re-review until it is qualified.

## **2. In-class Monitoring**

### **{1}. Routine Teaching Inspection**

In accordance with the relevant provisions of the Implementation Measures for Quality Monitoring of Hunan City University, the college will organize internal routine duty inspections, mainly focusing on whether the classroom teaching organization of the instructors meets the requirements, the effectiveness of classroom teaching implementation, and conducting surveys on students' learning gains. Feedback will be promptly provided to the instructors, and the listening records will be submitted to the College Teaching Steering Committee.

### **{2}. Specialized Teaching Inspection**

In accordance with the requirements of the Implementation Measures for Quality Monitoring of Hunan City University, specialized teaching inspections will be conducted, focusing on the effectiveness of teaching implementation in cultivating students' abilities and whether the course teaching methods and design are scientifically reasonable. Feedback will be provided to the instructors in real-time, and the conclusions of the specialized teaching inspection will be submitted to the College Teaching Steering Committee.

## **3. Post-class Monitoring**

### **{1}. Course Examination Management**

After the course concludes, the College Teaching Steering Committee will organize members of the Quality Monitoring Group, department heads, and course leaders to review the content and methods of course examinations (assessments).

The main review contents include:

① Whether the course assessment standards and grading details are clear and operable;

- ②The coverage of knowledge points in the course assessment;
- ③The relevance of the course assessment content (including process assessment materials) to students' abilities and whether they reflect the achievement of ability items;
- ④Whether the extraction of course achievement evaluation data, especially data reflecting abilities, is reasonable and can demonstrate the achievement of course objectives;
- ⑤Whether the evaluation targets cover all students enrolled in the course.

After the review, the "Teaching Process and Achievement Evaluation Review Form" (Appendix 2), "Question-setting Review Form" (Appendix 3), and process assessment rationality review materials (Appendix 4) will be completed.

## **{2}. Grade Assessment**

Supervise the entire process of grade assessment and promptly point out any deviations or errors in the assessment process.

## **{3}. Teaching Archives**

Based on the requirements of the *Interim Measures for the Management of Course Teaching Archives of the School of Civil Engineering*, the Quality Monitoring Group will review the course teaching archives submitted by the teaching team and supervise corrections.

## **4. Data Collection and Rationality Evaluation**

On the basis of quality monitoring of the teaching process, data from teaching supervision evaluations, peer evaluations, and student evaluations will be collected and analyzed for rationality.

## **5. Teaching Effectiveness Analysis**

Based on the monitoring results and collected data, teaching effectiveness analysis will be conducted with courses as the objects of analysis. The focus will be on the achievement of student ability cultivation objectives, identifying existing problems, proposing solutions, and submitting them to the College Teaching Steering Committee.

## **Four. Application of Quality Monitoring Results**

- 1.To directly guide the teaching improvement of the teaching team, enhance teaching quality, and improve students' sense of gain and satisfaction in learning.
- 2.To provide suggestions and recommendations for the continuous improvement of courses.
- 3.To guide the revision and improvement of quality standards for each teaching component of the major.

School of Civil Engineering

March 2, 2019

# **Hunan City University Quality Monitoring and Assessment Center Document**

Xiangcheng Institute Evaluation [2018] No. 16

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## **Guiding Opinions on the Evaluation of Graduation Requirements Achievement at Hunan City University**

### **Chapter 1: General Provisions**

#### **The first article:**

In order to further implement and carry out Xi Jinping President of the People's Republic of China In order to further implement the important discourses on education and the spirit of the National Education Conference, to continuously deepen the reform of undergraduate education, to advance the connotation construction of majors and courses, to establish an evaluation and improvement mechanism based on outcomes, and to ensure and enhance the quality of talent cultivation, this regulation is hereby formulated in accordance with the "National Standards for the Quality of Undergraduate Education in General Higher Education Institutions" and relevant documents on professional certification, and in combination with actual situation of the university.

**Article 2:** Graduation requirements refer to the knowledge, skills, and qualities that students should possess upon graduation after completing their undergraduate education. Scientific and rational graduation requirements are not only a guarantee for achieving the goals of talent cultivation but also the logical basis for constructing the curriculum system, allocating faculty and teaching resources, establishing teaching quality standards, and conducting teaching activities.

**Article 3 :** The evaluation of graduation requirements achievement follows the philosophy of "student-centered, outcome-oriented, and continuous improvement."

**Article 4:** This regulation applies to undergraduate majors participating in accreditation (assessment). Other majors may refer to and implement these guidelines accordingly

### **Chapter 2: Responsible Institutions and Responsible Persons**

**Article 5:** The evaluation of graduation requirements achievement shall be completed under the guidance and coordination of the Academic Affairs Office, with the Quality Monitoring and Assessment Center responsible for supervision. The secondary

colleges are the main bodies responsible for organizing and implementing the evaluation of graduation requirements achievement. The colleges shall establish a working group for the evaluation of graduation requirements achievement, with specific individuals appointed to be responsible for the evaluation work. The working group generally consists of the dean, party secretary, deputy dean in charge of teaching, deputy secretary in charge of student affairs, department heads, major leaders, members of the Teaching Steering Committee, teaching supervisors, and key faculty members of the major. Among them, the deputy dean in charge of teaching is the primary responsible person, and the major leader is the direct responsible person. The Academic Affairs Office, Student Affairs Office, and all course instructors shall participate in and support the evaluation work.

**Article 6:** The evaluation of graduation requirements achievement adopts a comprehensive evaluation system using multiple methods, including but not limited to the following:

{1}:The quantitative evaluation method based on the evaluation results of course objectives to conduct a comprehensive evaluation.

{2}:The survey questionnaire method, which involves distributing questionnaires to current and recent graduates (preferably those who graduated around 5 years ago) for evaluation.

{3}:The survey analysis method, which involves evaluating through interviews, visits, and surveys with industry and corporate experts.

### **Chapter 3: Evaluation Basis and Evaluation Cycle**

**Article 7:** Basis for the evaluation of graduation requirements achievement:

{1}:The support matrix developed by the major, which shows how courses support the indicators of graduation requirements.

{2}:The evaluation results of course objectives as direct evidence.

{3}:Indirect evidence based on the personal experiences and subjective perceptions of current graduates, course instructors, educational authorities, and employers regarding the achievement of graduation requirements.



**Article 8:** Evaluation cycle. It is recommended that the evaluation of graduation requirements achievement be conducted every two years. When conditions permit, it is suggested that a formative evaluation of graduation requirements achievement be carried out for current students each semester to guide them in strengthening their learning of course content related to graduation requirements indicators that are not well achieved in subsequent courses.

#### **Chapter 4: Evaluation Methods and Steps**

**Article 9:** Evaluation of graduation requirements achievement. Specific procedures and methods:

##### **(1) Determination of Graduation Requirements Achievement Target Values**

The achievement target values for graduation requirements are the main criteria for judging whether graduation requirements have been met. The major should determine the achievement target values for each graduation requirement based on the university's degree awarding regulations, the major's positioning, and the actual situation of talent cultivation. The target values are generally recommended to be no less than 0.65.

##### **(2) Calculation of Graduation Requirements and Indicator Achievement Evaluation Values**

The achievement value of a graduation requirement is determined by the minimum achievement evaluation value of its sub-indicators. That is: the achievement evaluation value of a graduation requirement is equal to the minimum achievement evaluation value of the indicators under that graduation requirement. Before calculating the achievement value of a graduation requirement, the achievement evaluation values of the indicators under that graduation requirement should be calculated first. A combination of direct and indirect evaluation methods is used to evaluate the achievement of graduation requirements indicators. Direct evaluation mainly uses quantitative evaluation methods based on course objective achievement evaluation values, while indirect evaluation mainly uses questionnaire surveys based on evaluators' personal experiences or subjective perceptions. The following evaluation methods are recommended:

**1.Quantitative Evaluation Method**This method evaluates the achievement of graduation requirements indicators supported by courses based on the evaluation results of course objectives. Specific steps are as follows:

①:Review of Data Source Rationality: The evaluation working group reviews the rationality of the course objective evaluation reports and data provided by the major and forms a rationality review report.

②:Calculation of Graduation Requirements Achievement Evaluation Values: The evaluation group calculates the achievement evaluation values of each graduation requirement indicator based on the course objective evaluation results and takes the minimum value of the indicator achievement evaluation values as the achievement evaluation value for each graduation requirement. The achievement evaluation value of a graduation requirement = the minimum achievement evaluation value of the indicators under that graduation requirement.

## **2.Survey Questionnaire Method**

This method uses a specially designed questionnaire to understand the achievement of graduation requirements from the surveyed subjects. It is generally organized and implemented uniformly by the Admissions and Employment Office, with secondary colleges organizing specific personnel to cooperate with the Admissions and Employment Office in the implementation of the survey.

Specific steps are as follows:

①:Design of Survey Questionnaire: The survey questionnaire is generally organized and designed by the major leader and reviewed by the deputy dean in charge of teaching. Question design is the key to conducting a good questionnaire survey. It is necessary to stand in the evaluators' shoes, fully consider their personal experiences and subjective perceptions, and closely revolve around the connotation of graduation requirements and indicators to design questions. Questions should be designed in the form of a scale, with no repetition or overlap in content. The survey questionnaire should at least be divided into student and employer versions, with the student version

further detailed to each indicator. The questionnaire can be made into a paper version or an electronic version using tools such as Questionnaire Star.

②:Determination of Survey Sample Size: In principle, all current graduates should participate in the evaluation. The sample size for other surveyed subjects is determined by the major according to the research requirements.

③:Implementation of the Survey: Staff should proactively contact the survey subjects to make them aware of the purpose, significance, and requirements of the survey. Guide current graduates to answer the questionnaire questions based on their personal learning experiences and gains, and employers and recent graduates to answer based on the professional qualities and job performance of the graduates. Negotiate with the survey subjects on the methods for sending and recovering the survey questionnaires, which can be done through email, WeChat, QQ, courier, or other means.

④:Organization, Statistics, and Calculation of Graduation Requirements Indicator Achievement Values: The college organizes specific personnel to calculate the achievement values of graduation requirements indicators according to the calculation methods determined when designing the survey questionnaire.

⑤:Calculation of Graduation Requirements Achievement Evaluation Values

### **3. Continuous Improvement and Archiving**

Based on the evaluation results of graduation requirements achievement, the secondary college should organize relevant personnel from the major to analyze the results and propose continuous improvement measures, forming an evaluation report and continuous improvement measures. All evaluation basis, process documents, result reports, survey questionnaires, achievement calculation records, and collective discussion records related to graduation requirements achievement evaluation shall be organized by the secondary college and archived by major and year.

## **Chapter 5: Evaluation Results and Application**

**Article 12** :Evaluation Results. The college evaluation working group shall conduct cross-comparisons and comprehensive analyses of the evaluation results obtained through different methods, forming an evaluation analysis report on the achievement

of graduation requirements. The report should include descriptions of the major's graduation requirements and indicators, evaluation basis, evaluation methods, evaluators, evaluation results and analysis, main issues, and improvement measures.

**Article 13** :Application of Results. In addition to directly guiding continuous improvement, the evaluation results should be promptly fed back to all faculty members and relevant departments. They should be used to revise talent cultivation goals, graduation requirements, curriculum systems, and syllabuses, and serve as important basis for major-specific allocation of faculty and teaching resources, promotion of talent cultivation model innovation, and deepening of educational reform.

## **Chapter 6: Implementation**

**Article 14** :The evaluation of graduation requirements shall be implemented under the unified guidance and coordination of the Academic Affairs Office, with the colleges responsible for specific organization and implementation. The colleges shall develop implementation plans for the evaluation of graduation requirements based on this regulation, in combination with the characteristics and actual situation of their disciplines and majors. They shall regularly evaluate the rationality and achievement of graduation requirements and develop improvement measures based on the evaluation results. A closed-loop management mechanism for continuous improvement, characterized by "evaluation - feedback - improvement," should be formed to promote the continuous enhancement of educational quality.

**Article 15**: Strengthen the construction of the review mechanism. The implementation plan for the evaluation of graduation requirements of the college major shall be executed after being reviewed and signed by the deputy dean in charge of teaching. The evaluation analysis report, after being reviewed and signed by the deputy dean and dean, shall be filed with the university's evaluation and construction office.

**Article 16** :During the implementation of the evaluation of graduation requirements, colleges should actively explore innovative evaluation mechanisms and models in combination with the characteristics of their majors, standardize and optimize the evaluation work process, and continuously improve the evaluation and improvement mechanism oriented towards outcomes. Colleges with conditions may develop implementation methods for the evaluation of graduation requirements achievement that are suitable for their majors, to be implemented after approval by the Academic Affairs Office and the Quality Monitoring and Assessment Center.

## **Chapter 7: Supplementary Provisions**

**Article 17:** This regulation shall come into effect from the date of issuance.

**Article 18:** The interpretation of this regulation shall be the responsibility of the university's Quality Monitoring and Assessment Center.

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Quality Monitoring and Assessment Center  
December 2, 2017



# Document of the School of Civil Engineering, Hunan City University

Xiangcheng Institute of Civil Engineering Document No. 23 [2018]

## Evaluation Methods for the Achievement of Graduation Requirements in the School of Civil Engineering

To implement the fundamental task of cultivating virtue and talent, enhance the level of education and teaching, and improve the quality of talent cultivation, and to standardize the evaluation process for students' achievement of graduation requirements, this regulation is hereby formulated in accordance with the requirements of the General Standards for Engineering Education Accreditation and the Assessment (Accreditation) Documents for Civil Engineering Majors in Higher Education Institutions, and in combination with the university's document spirit and the actual situation of the college.

### 1. Evaluation Organization

The evaluation working group for the achievement of graduation requirements shall be composed of members of the Teaching Steering Committee of the School of Civil Engineering (hereinafter referred to as the College Teaching Steering Committee).

### 2. Evaluation Cycle

One year.

### 3. Evaluation Targets

All graduates of the major in the current year.

### 4. Evaluation Content

The evaluation of the achievement of graduation requirements is conducted at two levels:

1. Internal Evaluation: Based on the evaluation results of course objectives, the evaluation group conducts quantitative analysis and evaluation.
2. External Evaluation: Through questionnaires, qualitative evaluation is conducted using self-assessment by students and evaluation by industry experts.

Internal evaluation serves as the basis for judging the achievement of graduation requirements, while external evaluation acts as a supplement and reference to the internal evaluation.

### 5. Data Collection

Different collection methods are adopted for different evaluation contents, as shown in the table below.

**Table of Data Sources for the Evaluation of Graduation Requirements Achievement**

Evaluation Targets	Data Content	Collection Method	Source	Purpose
Current Graduates	Course Objective Achievement	Census	Course files, automatically extracted through the OBE Teaching and Academic Affairs Integrated Platform.	Quantitative Analysis
	Graduate Self-Assessment	Census	Survey questionnaire for current graduates. Self-assessment based on a 5-point scale for each graduation requirement indicator.	Qualitative Reference
	Industry Expert	Census	Survey questionnaire for industry experts. Evaluation based on a 5-	Qualitative Reference

	Evaluation		point scale for the 12 graduation requirements.	
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## 6. Evaluation Methods

For the achievement of the first-level graduation requirements indicators, the minimum value of the evaluation results of the corresponding second-level indicators is taken. The evaluation methods for the second-level indicators are as follows:

### {1}:Course Objective Evaluation Method

The evaluation value of the second-level indicator is determined based on the evaluation value of the course objectives.

$$B = \sum_{i=1}^n V_i W_i$$

In the formula, V represents the evaluation value of the course for the indicator point; W represents the weight of the course's support for the indicator point; n represents the number of courses that support the indicator point.

When the relationship between the course objective and the second-level graduation requirement indicator is one-to-one, V is the evaluation value of the corresponding course objective achievement.

When the relationship between the course objective and the second-level graduation requirement indicator is many-to-one, the course team should specify the weight of each course objective in the syllabus when calculating V.

{2} Graduate Self-Assessment Method Survey questionnaires for current graduates. Self-assessment based on a 5-point scale for each graduation requirement indicator, filled out online through the OBE Teaching and Academic Affairs Management Platform.

{3} Industry Expert Evaluation Method Survey questionnaires for industry experts. Evaluation based on a 5-point scale for the 12 graduation requirements.

## 7. Application of Results

The evaluation results of graduation requirements achievement are summarized and studied by the College Teaching Steering Committee and serve as an important basis for the continuous improvement of the curriculum system. The summarized results are submitted to the Academic Affairs Office by the College Teaching Steering Committee and used as a reference for the issuance of students' degree certificates.



