

Quality Improvement Plan (QIP)

Construction Management Program
Department of Civil Engineering and Construction Management
College of Engineering
Florida Institute of Technology
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1.0 Quality Improvement Plan Contents

The QIP serves as the basis for the continuous improvement of the degree program. The QIP has three major components: Strategic Plan for the educational unit, Assessment Plan for the degree program, and Assessment Implementation Plan for the degree program (American Council for Construction Education (ACCE) Document 103 OBS Standard 9).

2.0 Construction Management Program Strategic Plan

The purpose of this strategic plan is to outline the systematic and sustained efforts needed to enable the degree program to fulfill its mission.

2.1 Goals to Achieve Program Mission

The following goals are intended to guide the direction of the construction management program in meeting its mission. The construction management program will aim to:

1. Achieve American Council for Construction Education accreditation by 2018.
2. Expand enrollment to 100 undergraduate students by 2024.
3. Start a Construction Management masters degree program by 2020.
4. Encourage students to take the American Institute of Constructor's exam.
5. Place over 90% of students in construction related jobs within 9 months of graduation.
6. Grow the Associated Builders and Contractors (ABC) student chapter membership to at least 50 students.
7. Participation in scholarly activities by each faculty members.
8. Enhance the effectiveness of the program faculty by encouraging and supporting professional development in technical areas as well as teaching.
9. Earn a national award of excellence for the program at least once every five years.

2.2 Review of Resources and External Factors

The faculty will hold an annual review of the degree program, normally at the end of the spring term. Available resources and support, as well as external factors affecting the program shall be considered. The status of the degree program shall also be reviewed annually by the Construction Industry Advisory Board (CIAB). Available resources and support, as well as external factors affecting the program shall be considered.

2.3 Updating of the Strategic Plan

The strategic plan shall be reviewed and updated every five years. Input from the faculty, industrial advisory board, and the students will be considered during the review and updating of the strategic plan.

3.0 Program Assessment Plan

The intent of the Assessment Plan is to provide the framework to provide evidence of the program's effectiveness in preparing construction practitioners. A matrix showing the

relationship between Student Learning Outcomes and FIT courses in which the SLOs are covered and assessed is in Table 1 at the end of this plan.

3.1 Program Mission Statement

The mission of the construction management program is to provide an education to prepare graduates for leadership roles in the construction industry and as responsible members of society. The curriculum is responsive to current social, economic and technical developments in the field of construction and reflects the application of evolving knowledge in construction management and the behavioral sciences. The program incorporates curricula that develop management skills to reflect changes in construction technology and management trends, and has goals that closely reflect the needs of the construction profession and society as a whole.

The construction management major was developed to provide a curriculum to meet the specific needs of the construction industry both in Florida and throughout the United States. Those needs include professionals who understand the basics of civil engineering and business subjects such as project management, contracting, budgeting and cost control. The program was designed with input from members of the Construction Industry Advisory Board (CIAB) at Florida Tech. The board meets yearly to review curriculum and performance of graduates, and to provide updates on industry trends. The curriculum meets Florida Tech's core requirements within the institutional framework established for all Florida Tech programs and is consistent with the institutional mission and assessment procedures of the university.

3.2 Degree Program Objectives

The following goals are intended to guide the direction of the construction management program in meeting its mission. The construction management program will:

1. Achieve American Council for Construction Education accreditation by 2018.
2. Expand enrollment to 100 undergraduate students by 2024.
3. Start a Construction Management masters degree program by 2024.
4. Encourage students to take the American Institute of Constructor's exam.
5. Place over 90% of students in construction related jobs within 9 months of graduation.
7. Grow the Associated Builders and Contractors (ABC) student chapter membership to at least 50 students.
8. Participate in scholarly activities (faculty members).
9. Enhance the effectiveness of the program faculty by encouraging and supporting professional development in technical areas as well as teaching.
10. Earn a national award of excellence for the program at least once every five years.

3.3 Program Learning Outcomes/Student Learning Outcomes (SLO's)

The program learning outcomes are the same as the ACCE Student Learning Outcomes, Upon graduation from the Florida Institute of Technology Construction Management Program, a graduate shall be able to:

1. Create written communications appropriate to the construction discipline.
2. Create oral presentations appropriate to the construction discipline.
3. Create a construction project safety plan.
4. Create construction project cost estimates.
5. Create construction project schedules.
6. Analyze professional decisions based on ethical principles.

7. Analyze construction documents for planning and management of construction processes.
8. Analyze methods, materials, and equipment used to construct projects.
9. Apply construction management skills as a member of a multi-disciplinary team.
10. Apply electronic-based technology to manage the construction process.
11. Apply basic surveying techniques for construction layout and control.
12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.
13. Understand construction risk management.
14. Understand construction accounting and cost control.
15. Understand construction quality assurance and control.
16. Understand construction project control processes.
17. Understand the legal implications of contract, common, and regulatory law to manage a construction project.
18. Understand the basic principles of sustainable construction.
19. Understand the basic principles of structural behavior.
20. Understand the basic principles of mechanical, electrical and piping systems.

3.4 Assessment Tools

Each SLO from section 3.3 will be evaluated with one direct and one indirect assessment metric. Metrics will be kept unchanged for the first complete assessment cycle under the outcomes based standards to establish a baseline. After the initial assessment faculty may recommend changes to the metrics for discussion at the annual review.

The direct assessment tool will be a whole or part of an assignment or examination that is part of a course grade. If a group project is used, group member involvement will be assessed. The indirect measure will be a student exit survey, given to graduating seniors. Each SLO will be measured on a 1 – 10 scale.

Outcomes are also indirectly assessed by surveying program alumni and employers using the same SLO rating scheme as the graduating seniors.

3.5 Performance Criteria

For the first two rounds of assessment, the minimum performance criteria for each direct assessment will be 70% of the students attaining a 70%. The minimum performance criteria for each indirect assessment will be 7.0 on a 10.0 point scale.

3.6 Evaluation Methodology

Individual faculty will prepare an evaluation rubric for and collect and analyze the data for the direct assessment measures they are assigned. If an SLO metric falls below the performance criteria, the faculty member will recommend an action to improve student performance. If the performance criteria is met, the faculty member will determine whether any action is required to maintain performance. Actions normally would include administrative or pedagogical changes but may include changes to the performance standard. Data and recommendations will be forwarded to the program coordinator who will lead a discussion of the SLO evaluations at the annual review. The program coordinator will collect the indirect senior exit surveys and compile the data, to be discussed at annual review.

3.7 Review of Assessment Plan

The faculty will conduct an annual review of the assessment plan, normally at the end of the spring term to confirm the objectives, outcomes, assessment tools, performance criteria, and evaluation methodology.

3.8 Updating of the Assessment Plan

The assessment plan shall be reviewed and updated every five years. Input from the faculty, industrial advisory board, and students will be considered during the review and updating of the assessment plan, especially the formulation of the student learning outcomes (SLOs).

4.0 Assessment Implementation Plan

This assessment implementation plan explains the process of conducting assessments to ensure that the program is making progress in achieving its mission, objectives, and learning outcomes.

4.1 Comprehensive Assessment

The Construction Management Program will conduct a comprehensive assessment at the degree program level.

4.2 Documentation of Results

The results of each assessment cycle shall be documented in a systematic manner.

4.2.1 Assessment Cycle

Direct and indirect assessment tools will initially be used for all SLO during the first year (2016-2017) to establish a program baseline for the ACCE outcomes based standards. The data will be compiled for each SLO by the assigned faculty member into a notebook for each SLO which includes student work being assessed, the metric(s) used to assess student accomplishment of the SLO, an assessment rubric explaining how the metric was assessed, and a matrix compiling all results.. The notebook will contain the current and most recent previous assessment. All SLO assessments will be discussed at the annual review. After the first round of assessments have been completed and evaluated, each SLO will be evaluated on a bi-annual basis.

4.2.2 Analysis of Data Collected

The analysis of the SLO assessment data will be conducted by the faculty member when compiling the data to be discussed during the annual review. Results of this analysis will be kept by the program coordinator.

4.3 Evaluation of Program Objectives and Learning Outcomes

Assessment results will be compared to the stated performance criteria to determine whether stated objectives and Learning Outcomes were achieved and if there is a validated need for improvement in any area

4.3.1 Changes Implemented

Changes implemented by the program during the annual review will be recorded and kept by the program coordinator.

4.3.2 Documentation of Results, Analysis, and Changes Implemented

Results of the assessment tools, analysis of the data, and changes implemented as a result of the assessment evaluation will be compiled by the program coordinator, and placed on the

construction management program website as part of the ACCE Public Disclosures document. A summary of actions taken for poor performance will be kept for at least 5 years.

4.4 Review of Assessment Implementation Plan

The assessment implementation plan and appropriateness of the process shall be reviewed annually by the faculty, normally at the end of the spring term. The assessment plan shall be reviewed and updated every five years. Input from the faculty, industrial advisory board, and the students through the SCA will be considered during the review and updating of the assessment plan, especially the appropriateness of the direct assessment tools being used.

