



Moss School of Construction,
Infrastructure and Sustainability

PROGRAM INFORMATION FOR THE GENERAL PUBLIC

MOSS DEPARTMENT OF CONSTRUCTION MANAGEMENT

OCTOBER 2019

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I. Introduction

As of July 1st 2019, the College of Engineering went through a reorganization. Three schools were formed:

1. School of Electrical, Computer and Enterprise Engineering: This School will house the Electrical and Computer Engineering Department & the Enterprise and Logistics Engineering Program
2. School of Biomedical, Materials and Mechanical Engineering: This School will house the Department of Biomedical Engineering & the Department of Mechanical and Materials Engineering.
3. Moss School of Construction and Infrastructure and Sustainability: The Moss School will house the Civil and Environmental Engineering Department, and the new Moss Construction Management Department.

In the aforementioned new structure:

- Department Chairs will continue to report directly to the Dean and continue to oversee academic functions in their departments, including tenure & promotion process, and annual assignment and evaluation of faculty. And as before, they will continue to work with the College on department budgets, degree programs and curricular developments with a focus on success metrics per FIU's strategic plan.

Dr. Faria is now the Interim Chair of the Moss Department of Construction Management, he still reports to the Dean

- Schools will be led by Directors. Support staff serving the School will report to the Director who will also be responsible for expanding multidisciplinary research activities across Colleges, Centers and departments. The Director will also be responsible for external partnerships, improving name recognition, foundation activities and collaborate with Chairs to achieve College and University targeted initiatives, including interdisciplinary faculty hiring.

- The Chairs and School Directors will report to the Dean

The undergraduate program is fully accredited by the American Council for Construction Education (ACCE). The school enjoys a very strong relationship with the south Florida construction industry. It has an active Industry Advisory Council (IAC) with representations from almost all major construction companies in south Florida.

We maintain in active pursue of improving our four year graduation rate, second year retention , and to continue serving the construction industry by providing graduates that are well versed in the construction management body of knowledge.

I. Institution Vision and Mission

A. Institutional Vision

Florida International University will be a leading urban public research university focused on student learning, innovation, and collaboration.

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B. Institutional Mission

Florida International University is an urban, multi-campus, public research university serving its students and the diverse population of South Florida. We are committed to high-quality teaching, state-of-the-art research and creative activity, and collaborative engagement with our local and global communities.

C. Institutional Values

Florida International University is committed to the following core values:

- Truth—in the pursuit, generation, dissemination, and application of knowledge
- Freedom—of thought and expression
- Respect—for diversity and the dignity of the individual
- Responsibility—as stewards of the environment and citizens of the world
- Excellence—in intellectual, personal, and operational endeavors

II. Program Mission and Objectives

The Bachelors of Science in Construction Management (BSCM) is accredited by the American Council for Construction Education (ACCE).

A. Program Mission

The mission of the School of Construction is to provide enlightened leadership to the construction industry through its graduates; to increase and improve the body of working knowledge; and to promote the interdisciplinary transfer of technology. The School will continue to strive to produce professional construction managers who are informed and participating citizens with a sense of duty and responsibility, whose actions express high moral and ethical standards, and who understand the impact of their work on society.

B. Program Goals/Objectives

The School continues to serve the needs of south Florida, the nation, and the world through high-quality teaching, research, and professional involvement through the following goals:

1. Provide effective education to students and prepare them to enter the construction profession.
2. Utilize available technology to enhance teaching and learning.
3. Broaden access to construction management education through distance learning opportunities.
4. Conduct and disseminate research in the construction area.
5. Foster and create opportunities for student-industry interaction.
6. Create the environment and provide adequate resources for the professional growth of the faculty.
7. Encourage, promote and support vibrant student organizations and an active alumni association.
8. Be the preeminent source of construction knowledge for industry and the community at large.

III. Admission and Degree Requirements

Admission Requirements

Admission

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The Moss School of Construction, Infrastructure and Sustainability encourages applications for admission from qualified students from all cultural, racial, religious or ethnic groups, regardless of gender.

Grade Point Average

Admission into the undergraduate program requires a minimum 2.0 grade point average. Students transferring from another university or community college should review the Florida International University Undergraduate Catalog for university policies, application procedures, and financial aid information. Prior to or upon admission, transfer students should also contact a Construction Management advisor to review transcripts and determine allowable transfer credits.

Degree Requirements

In order to be eligible to graduate, the student must meet all University and School requirements. The program of studies consists of a minimum of 45 Lower Division semester credit hours, including 21 semester credit hours that can be used to satisfy the University Core Curriculum, and 60 Upper Division semester credit hours for a minimum total of 121 semester credit hours. The waiving of any required course shall not reduce the minimum of 121 semester credit hours required for graduation. A student entering as a freshman or with less than 36 transfer credit hours must have successfully completed the University Core Curriculum with minimum acceptable grades as determined by Undergraduate Studies (see catalog for additional information). In addition, all required Lower Division and Upper Division Construction Management courses and electives must be completed with a grade of 'C' or better. In order to graduate, a student must also have a minimum grade point average of 2.0, and have met the foreign language requirement. Students should contact an advisor at least one semester prior to their projected graduation and request a review of his or her file. At the start of the final semester the student is required to complete an Application for Graduation. (See catalog for additional information on graduation procedures and scheduling.) If for any reason a student fails to graduate in the semester after applying for graduation, they must reapply. It is the student's responsibility to ascertain that all requirements for graduation have been met.

Foreign Language Requirement

Students must meet the University Foreign Language Requirement. Refer to the appropriate sections in the Catalog's General Information for Admission and Registration and Records.

Undergraduate Curriculum

The following courses comprise the undergraduate curriculum leading to a degree of Bachelor of Science in Construction Management. Except for the Environmental Control courses, those numbered 'I' shall be taken before courses numbered 'II'. Some credits of the Lower Division Core can be used to satisfy University Core requirements.

Departmental Lower Division Courses (Credit hours)

GLY 1010 Physical Geology (3cr)

GLY 1010L Physical Geology Lab (1cr)

BCN 2210 Construction Materials and Methods (3cr)

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BCN 2253 Building Construction Drawing (3cr)

BUL 4310 The Legal Environment of Business (3cr)

MAC 2233 Calculus For Business (3cr)

PHY 2053 Physics without Calculus (4cr)

PHY 2048L Physics Laboratory (1cr)

ECO 2013 Principles of Macroeconomics (3cr) or ECO 2023 Principles of Microeconomics (3cr)

ACG 3024 Introduction to Accounting for Managers and Investors (3cr)

STA 2023 Statistics for Business and Economics (3cr)

BCN 2280 Construction Surveying (3cr)

SPC 2608 Public Speaking (3cr)

Additional courses required for the degree:

BCN 1272 Plans Interpretation (3cr)

BCN 2402 Structural Design I (3cr)

Upper Division Courses

BCN 1013 Principles of Construction Management (3 cr)

BCN 3730 Construction Safety (3 cr)

BCN 3740 Legal Aspects of Construction (3 cr)

BCN 3761 Construction Documentation and Communication – GL (3 cr)

BCN 3762 Building Codes (3 cr)

BCN 4431 Structural Design II (3 cr)

BCN 3611 Construction Cost Estimating I (3 cr)

BCN 4612 Construction Cost Estimating II (3 cr)

BCN 3720 Construction Scheduling I (3 cr)

BCN 4724 Construction Scheduling II (3 cr)

BCN 3753 Financial Management of Construction Organizations (3 cr)

BCN 3727 Construction Sitework and Equipment (3 cr)

BCN 4465 Temporary Structures in Construction (3 cr)

BCN 4561 Environmental Control in Buildings I (3 cr)

BCN 4570 Sustainable Approach to Construction (3 cr)

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BCN 4794 Quality Control in Construction (3 cr)

BCN 4564 Environmental Control in Buildings II (3 cr)

BCN 4703 Management of Construction Projects (3 cr)

BCN 4910 Senior Project (3 cr)

MAN 3022 Introduction to Management (3 cr)

XXX XXXX Elective (3 cr)

Elective

One 3 credit construction management or 3000-4000 level business/management elective, selected in consultation with the Undergraduate Advisor of the School department, is required.

University Requirements

First time students or transfer students with less than 36 credit hours must meet the University's core requirements as outlined in the catalog.

http://catalog.fiu.edu/2019_2020/undergraduate/College_of_Engineering_and_Computing/Undergraduate_Moss_School_of_Construction_Infrastructure_and_Sustainability.pdf

IV. Degree Program Assessment Measures Employed

Academic Learning Compacts, Assessment Plan, and Assessment Report are included in Appendix A at the end of this report.

V. Information Obtained Through These Assessment Measures

Our quality improvement plan as created from the analysis of the assessment made is included Appendix B at the end of this report.

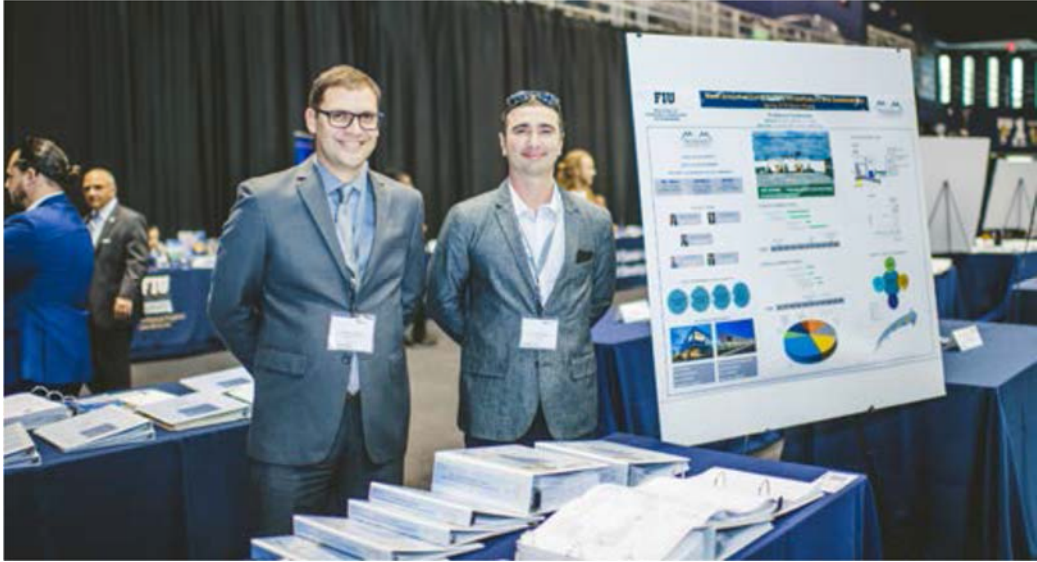
VI. Actions Taken as a Result of Feedback

We are more centered than ever on student success. As a result of the feedback from our students, we are offering a more flexible and updated curriculum, opening courses online, creating new electives, hiring industry experts to teach in our classrooms, providing credit for internships and expanding course offerings for the master's programs.

VII. Student Achievements

In April, 14 teams of construction management students unveiled their senior projects to members of the industry and the university community as part of the Senior Design Showcase. Over the course of a year, the students crafted construction plans for realworld jobs comprising detailed budgets, schedules, emergency plans, 3D models and more. How does a company meet a buyer's deadline while also providing a competitive budget? What does a company do if there is an emergency on site? How should a company organize itself? The students had to answer these questions and more.

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Another team, Prodigious Construction, also had two construction sites to contend with. Teammates Jorge Tapia and Gaston Galella worked on erecting a multipurpose building and renovating an existing building for an elementary school in Florida. The school would remain open during construction, so the team had to account for how classes, lunches and even fire drills would continue safely throughout the process.

Tapia and Galella found out they had a lot in common. Both own their own companies – Tapia is a master electrical contractor and Galella is a carpenter – and both learned their trades from their fathers. The two men compared their experiences at the Moss School to real-world scenarios, and both agree: The Moss School is preparing its students for everything.

Sergio Molina, a 21-year-old senior studying construction management with a minor in business administration, says the Moss School of Construction helped him evolve his passion for building and creating — especially through the bowling balls competition. Through the FIU chapter of the American Concrete Institution (ACI), he had the opportunity to travel to Salt Lake City, Utah, to compete in ACI's Concrete Bowling Ball Competition in spring 2018. The main point of the competition was to see how many pounds of pressure the ball could sustain. [We went there because] we had placed second in Orlando at a concrete bowling ball competition. In fall 2017, he joined Alpha Kappa Psi, which is a professional business fraternity. I knew some other students in construction management were involved. Through people I met there I'm now working at Vercetti Enterprises, a general contractor company founded by a graduate of the construction management program. I work there full-time as an estimator and study full-time at FIU.

Joseph Trujillo submitted a homework/proposal in Dr. Mohamed Elzomor's Sustainable Construction course and at the same time to the Grand Challenge competition. The proposal, granted him recognition and a chance to compete internationally. The competition chose only Five undergraduate students from across the world and Joseph Trujillo was one of them. During summer, he had an all paid Trip to the UK to present his proposal in front of top construction firms and energy stakeholders.

VIII. Faculty Achievements

In 2017 Dr. Jose Faria received a \$155,000 grant from the Department of Labor OSHA to provide free training on fall protection.

In 2018 Dr. Nipesh Pradhananga received a \$150,000 grant from the Department of Labor OSHA to provide free training on fall protection.

In 2018 Dr. David Ramsey received a Best Paper Award at the Construction Research Congress

In 2019 Dr. Nipesh Pradhananga received a \$160,000 grant from the Department of Labor OSHA to provide free training on fall protection.

In 2019 Dr. Arif Hohaimin Sadri and Dr. Lu Zhang won a grant from the Florida Department of Transportation to advance understanding of how external factors influence our transportation demand and the performance of transportation systems. The goal of the grant is to inform the planning process and provide broader insights into the changing nature of transportation demand.

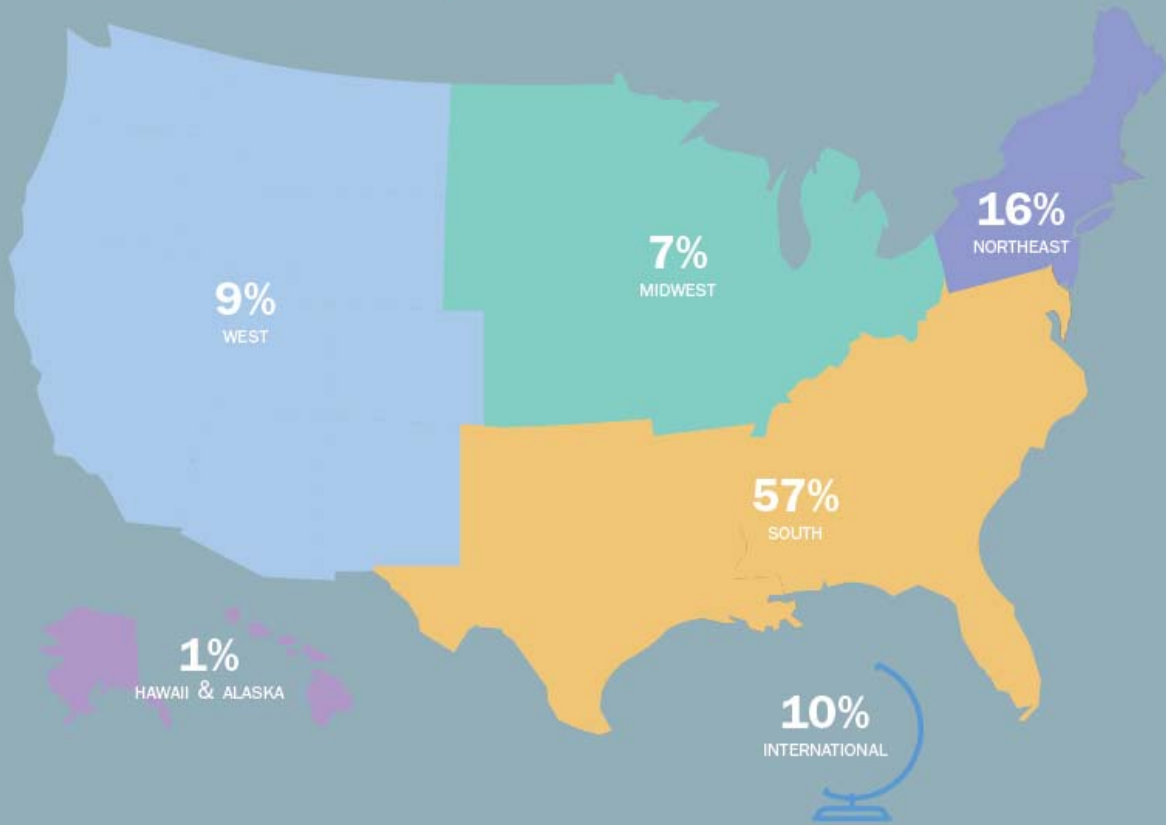
In 2019 Dr. Lu Zhang received a \$314K - 3 year NSF award to improve community disaster resilience by conceptualizing, uniting, and incorporating the value systems of multi-sector stakeholders.

IX. Employment of our graduates

The following map shows where are our graduates working these days:

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Where our alumni are today:



Companies Hiring Our Graduates

Moss School graduates are highly sought after. Here is a sampling of the companies that hire our graduates:

ANF Group, Inc.
Baker Concrete
Balfour Beatty Construction
Brasfield & Gorrie
Catalfumo Construction & Development
Coastal Construction
Condotte America
Current Builders
DPR Construction
E.F. Alvarez & Co., P.A.
Ferreira Construction
Florida Lemark Corporation
Gilbane Building Company

Grace & Naeem Uddin, Inc.
Hensel Phelps Construction Co.
Hollywood Woodwork
J. Raymond Construction Corporation
James B. Pirtle Construction
John Moriarty and Associates
Juneau Construction
Kast Construction
Kaufman Lynn Construction
Latite Roofing and Sheet Metal LLC
Lemartec Corp.
Lennar Homes
Link Construction Group, Inc.

Lynx Construction
Moss and Associates
NV2A
Odebrecht Construction, Inc.
Pirtle Construction
Plaza Construction
Robins and Morton
Skanska USA Building
Suffolk Construction
Supermix
The Weitz Company
The Whiting Turner Contracting Co.

Our graduates are well liked in the industry, and given the current state of construction jobs our students keep getting well paid jobs in the industry. According to the Department of Labor Construction Managers are the best paid jobs in the construction market today.

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Occupation	Employment, 2016	Employment, projected 2026	Median annual wage, 2017
Carpenters	329,400	357,800	\$45,680
Construction laborers	227,300	259,600	35,340
Construction managers	99,200	113,100	90,380
Cost estimators	39,500	45,100	66,250
Cement masons and concrete finishers	23,900	27,200	44,480
Painters, construction and maintenance	22,000	25,200	38,240
Civil engineers	19,900	22,600	77,680
Helpers--carpenters	18,200	20,800	30,710
Structural iron and steel workers	15,800	17,900	50,920
Drywall and ceiling tile installers	10,500	12,000	42,860

Note: Occupations are not exclusive to this industry and may be employed in greater or fewer numbers in other construction subsectors.

Source: U.S. Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections. Wage data exclude self-employed workers.

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X. Scholarship Opportunities

Students pursuing their studies at Florida International University have many opportunities for scholarships. Currently students have seven scholarships available to apply. Every year the university opens the application process online. The scholarships are:

AMERICAN SOCIETY OF PROFESSIONAL ESTIMATORS ENDOWED SCHOLARSHIP

BALFOUR BEATTY CONSTRUCTION ENDOWED SCHOLARSHIP

CHARLES J NIELSON SCHOLARSHIP

CONDOTTE AMERICA ENDOWED SCHOLARSHIP

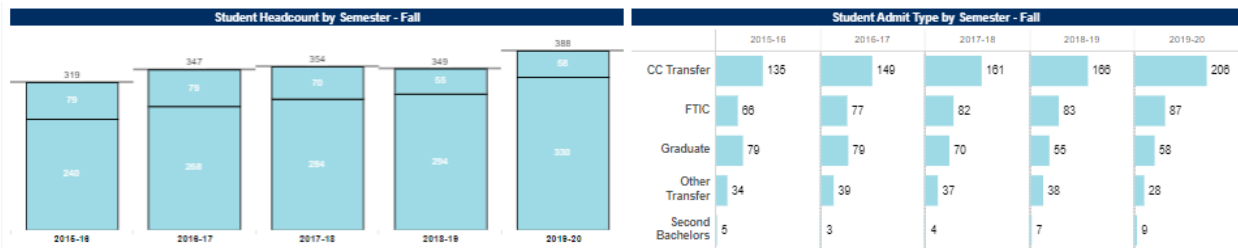
CONSTRUCTION ASSOCIATION OF SOUTH FLORIDA SCHOLARSHIP

KELLY FOUNDATION CONSTRUCTION AND ENGINEERING ENDOWED SCHOLARSHIP

MOSS CONSTRUCTION MANAGEMENT SCHOLARSHIP

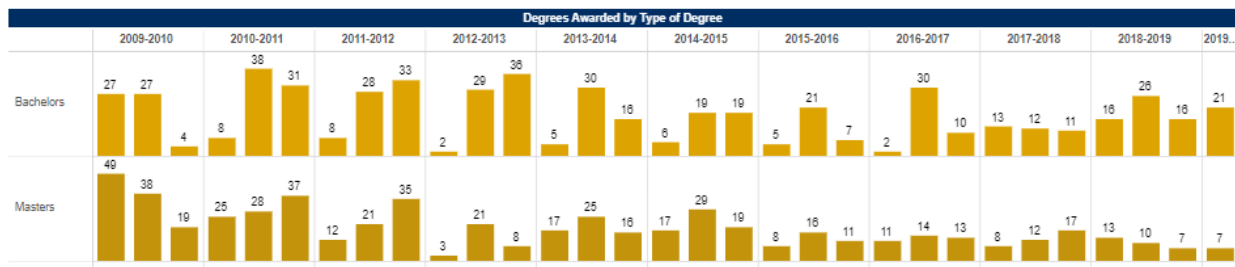
XI. Enrollment

Our enrollment for the fall 2019 semester was 330 undergraduate and 58 graduate students. The tendency is increasing over the years.



XII. Degrees Awarded

We are graduating an average of 54 Bachelors in Construction Management and 56 masters in Construction Management a year.



Appendix A Program Assessment and Quality Improvement Plan

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 1: Create written communications appropriate to the construction discipline

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	60.0%	80.0%	80.0%	87.0%
Indirect Assessment	3.50	3.71	3.75	3.85

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the direct assessment data that was collected have exceeded their target, except for the Fall 2017 term. The indirect assessment data is very consistent and met their target of an average 3.50 student confidence in their writing skills.
- Nothing needs to be done at this time. The faculty will continue to monitor this learning objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program learning objective.

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 2: Create oral presentations appropriate to the construction discipline

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	93.3%	100.0%	93.3%	95.7%
Indirect Assessment	3.36	3.79	3.75	3.89

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the direct data that was collected have exceeded their targets with a large margin. The indirect assessment data is very consistent and met their targets, except for the Fall 2017 term.
- Nothing needs to be done at this time. The faculty will continue to monitor this learning objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program learning objective.

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 3: Create a construction project safety plan

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	60.0%	33.3%	80.0%	82.6%
Indirect Assessment	3.36	4.00	3.75	3.96

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- During Fall 2018 faculty meetings, the low student performance in the direct assessment method was discussed. Construction safety is covered in the BCN 3730 course and measured in Senior Project. Students were not asked to develop any safety plans in BCN 3730, which made it harder for them to do it in Senior Project.
- Starting Fall 2018, developing a safety plan was added as an assignment in both BCN 3730 and BCN 4703. These two extra assignments helped improve student performance in this learning objective during the 2018-2019 academic year.
- All the indirect assessment data collected for this learning objective have met their target, except for the Fall 2017 term.
- The faculty will continue to monitor this learning objective in the 2019-2020 academic year to confirm the student performance continues to meet the targeted benchmark.

Use of Results and Follow-Up:

Will be conducted in Fall 2020

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 4: Create construction project cost estimates

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	86.7%	100.0%	80.0%	91.3%
Indirect Assessment	3.93	4.43	4.19	4.11

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the direct and indirect assessment data that was collected have exceeded their targets with a large margin.
- Nothing needs to be done at this time. The faculty will continue to monitor this learning objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program learning objective.

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 5: Create construction project schedules

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	100.0%	100.0%	93.3%	100.0%
Indirect Assessment	3.93	4.14	4.31	4.30

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the direct and indirect assessment data that was collected have exceeded their targets with a large margin.
- Nothing needs to be done at this time. The faculty will continue to monitor this learning objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program learning objective.

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 6: Analyze professional decisions based on ethical principles

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	75.0%	62.5%	79.2%	70.0%
Indirect Assessment	3.93	4.00	4.00	4.22

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the direct and indirect assessment data that was collected have met their targets, with the exception of the direct assessment measurement for Spring 2018.
- Nothing needs to be done at this time. The faculty will continue to monitor this learning objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program learning objective.

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 7: Analyze construction documents for planning and management of construction processes

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	68.1%	Not Measured	66.0%	Not Measured
Indirect Assessment	3.43	4.00	3.63	3.93

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- Even though the indirect assessment data, for the most part, show students' confidence in their abilities as they relate to this learning objective, the direct assessment measurements fell short of their targeted benchmarks in both terms in which the data was collected. The faculty believe the course in which this learning objective is measured, a sophomore class BCN 2253, is not proper for this purpose and it should be moved to a more advanced class.
- The direct assessment for this learning objective will be moved to the BCN 4724 course starting academic year 2019-2020.

Use of Results and Follow-Up:

Will be conducted in Fall 2020

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 8: Analyze methods, materials, and equipment used to construct projects

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	85.0%	81.3%	73.1%	42.5%
Indirect Assessment	3.36	4.14	3.94	3.93

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- Even though the direct assessment data that was collected have met their targets in all terms except for Spring 2019, the data is showing a downward trend in student performance. This learning objective is measured in BCN 3727, which was taught by three different instructors over the last two academic years who have used different assessment methods. It is therefore improper to use these measurements in determining student performance toward this learning objective.
- All the indirect assessment data have met their targeted benchmark, except for Fall 2017.
- The faculty decided to task a committee of the instructors teaching courses related to this learning objective with designing a standard direct assessment method that will be used by any instructor teaching BCN 3727 to measure student performance towards this learning objective.

Use of Results and Follow-Up:

Will be conducted in Fall 2020

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives

SLO 9: Apply construction management skills as a member of a multi-disciplinary team

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	100.0%	87.5%	87.5%	96.7%
Indirect Assessment	3.57	3.79	3.75	4.04

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the data that was collected have met their targets for both the direct and indirect assessments.
- Nothing needs to be done at this time. The faculty will continue to monitor this learning objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program learning objective.

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 10: Apply electronic-based technology to manage the construction process

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	Not Measured	87.1%	Not Measured	78.6%
Indirect Assessment	3.57	3.86	3.38	3.96

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the data that was collected have met their targets, with the exception of the indirect assessment measurement in Fall 2018.
- Nothing needs to be done at this time. The faculty will continue to monitor this learning objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program learning objective.

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 11: Apply basic surveying techniques for construction layout and control

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	95.0%	71.4%	74.4%	100.0%
Indirect Assessment	3.21	3.43	3.13	3.85

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- The results of the graduating seniors survey might be biased as: (1) some time has elapsed since they completed the surveying class, (2) many of them took the surveying class with a different instructor, and (3) the survey question might not have been clear.
- For the academic year 2019-2020, the indirect assessment of SLO 11 will be measured using either the Student Perceptions of Teaching (SPOT) Survey and/or a survey conducted by the instructor in class.

Use of Results and Follow-Up:

Will be conducted in Fall 2020

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 12: Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	60.0%	75.0%	87.5%	73.3%
Indirect Assessment	3.43	4.00	3.81	4.19

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the data that was collected have met their targets, with the exception of Fall 2017.
- Nothing needs to be done at this time. The faculty will continue to monitor this learning objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program learning objective.

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 13: Understand construction risk management

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	17.4%	28.3%	69.0%	74.4%
Indirect Assessment	3.29	3.57	3.50	3.78

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- Due to the extremely low student performance in the direct assessment method during the 2017-2018 academic year, the instructor has spent more time discussing risk management in class and changed the assessment from an open-ended question on the final to a case-study that was deemed more appropriate. As a result, student performance in the direct assessment has significantly improved during the 2018-2019 academic year, including meeting the targeted benchmark in Spring 2019.
- The faculty will continue to monitor this learning objective in the 2019-2020 academic year to confirm the student performance continues to meet the targeted benchmark.

Use of Results and Follow-Up:

Will be conducted in Fall 2020

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 14: Understand construction accounting and cost control

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	95.7%	91.3%	89.7%	83.7%
Indirect Assessment	3.07	3.64	2.94	3.59

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- The results of the indirect assessment seem to be inconsistent between the Fall and Spring terms. It is suggested that the wording of the graduating seniors survey questions might be confusing to the students as it relates to the word "control" in each of SLOs 14, 15, and 16. In addition, many students are not aware of Bloom's Taxonomy. Therefore, there is a chance survey respondents are misinterpreting both the intent and extent of the survey questions.
- For the academic year 2019-2020, a clarification will be added to the graduating seniors survey questions, especially the ones related to SLOs 14, 15, and 16, in order to clarify the intent and extent of the questions.

Use of Results and Follow-Up:

Will be conducted in Fall 2020

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 15: Understand construction quality assurance and control

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	100.0%	Not Measured	80.00%	82.6%
Indirect Assessment	2.71	3.71	3.06	3.81

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the direct assessment data that was collected have exceeded their target.
- The results of the indirect assessment seem to be inconsistent between the Fall and Spring terms. It is suggested that the wording of the graduating seniors survey questions might be confusing to the students as it relates to the word "control" in each of SLOs 14, 15, and 16. In addition, many students are not aware of Bloom's Taxonomy. Therefore, there is a chance survey respondents are misinterpreting both the intent and extent of the survey questions.
- For the academic year 2019-2020, a clarification will be added to the graduating seniors survey questions, especially the ones related to SLOs 14, 15, and 16, in order to clarify the intent and extent of the questions.

Use of Results and Follow-Up:

Will be conducted in Fall 2020

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 16: Understand construction project control processes

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	55.0%	93.8%	79.2%	90.0%
Indirect Assessment	3.07	3.57	3.31	3.96

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the direct assessment data that was collected have met their targets, with the exception of Fall 2017.
- The results of the indirect assessment seem to be inconsistent between the Fall and Spring terms. It is suggested that the wording of the graduating seniors survey questions might be confusing to the students as it relates to the word "control" in each of SLOs 14, 15, and 16. In addition, many students are not aware of Bloom's Taxonomy. Therefore, there is a chance survey respondents are misinterpreting both the intent and extent of the survey questions.
- For the academic year 2019-2020, a clarification will be added to the graduating seniors survey questions, especially the ones related to SLOs 14, 15, and 16, in order to clarify the intent and extent of the questions.

Use of Results and Follow-Up:

Will be conducted in Fall 2020

**Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives**

SLO 17: Understand the legal implications of contract, common, and regulatory law to manage a construction project

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	63.3%	70.0%	46.3%	63.5%
Indirect Assessment	3.79	3.86	4.00	4.00

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- The results of the direct assessment show consistent low student performance, except for the Spring 2018 term in which the targeted bench was met. This learning objective is reinforced and measured in the Legal Aspects course, which is taught by an adjunct professor who is a professional lawyer with extensive experience, specializes in construction law, and represents members of the construction industry in a wide variety of matters.
- The results of the indirect assessment show consistent student confidence in how the program has prepared them in understanding the legal aspects related to the construction industry. It is noteworthy that a majority of our undergraduate students are already employed in the construction industry and have been subjected to matters related to construction law in the course of their employment.
- The department's Interim Chair and Undergraduate Program Director will hold a meeting with the instructor to get his feedback on the low student performance in the direct assessment method and how to rectify it.

Use of Results and Follow-Up:

Will be conducted in Fall 2020

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 18: Understand the basic principles of sustainable construction

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	Not Measured	Not Measured	73.3%	64.0%
Indirect Assessment	2.93	3.71	3.25	3.89

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- Direct assessment results was not collected during the 2017-2018 academic year as the course used to measure this learning objective (BCN 4570) was newly developed and was not offered during the transition period of adding it to the required curriculum.
- The results of the direct assessment for the 2018-2019 academic year show inconsistent student performance. This can be a result of two factors: (1) the course is new and is still being perfected to serve the program needs, (2) the objective of the course and the scope of the assessment method used are focused on preparing students for taking LEED exams, which exceeds the scope of the leaning objective that aims to measure students "understanding" the basics of sustainability.
- The results of the indirect assessment show inconsistent student confidence in how the program has prepared them in understanding the basics of sustainable construction. This is natural as BCN 4570 was the program's first attempt at addressing this topics and students' experience with it will depend on the individual path each student took.
- The faculty decided at an earlier time to offer BCN 4570 as an elective and therefore it will no longer be used to measure this learning objective.
- A new module focusing on sustainable construction will be added to BCN 1013 and the direct assessment of this learning objective will be measured in this course.

Use of Results and Follow-Up:

Will be conducted in Fall 2020

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 19: Understand the basic principles of structural behavior

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	63.9%	83.3%	88.7%	83.8%
Indirect Assessment	3.36	3.71	4.31	3.96

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the data that was collected have met their targets, with the exception of Fall 2017.
- Nothing needs to be done at this time. The faculty will continue to monitor this learning objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program learning objective.

Data Analysis for 2017-2019 Cycle
Assessment of Program Learning Objectives
SLO 20: Understand the basic principles of mechanical, electrical and piping systems

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Direct Assessment	97.4%	85.4%	71.0%	97.7%
Indirect Assessment	3.43	3.57	3.88	3.85

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the data that was collected have met their targets, with the exception of Fall 2017.
- Nothing needs to be done at this time. The faculty will continue to monitor this learning objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program learning objective.

**Data Analysis for 2017-2019 Cycle
Assessment of Program Objectives**

**PO 1: The incoming freshmen will have an average SAT score of 1100/ACT score of 21
and GPA of 3.0**

Assessment Data Collection:

	AY 2017-2018	AY 2018-2019
SAT Score	1,172.86	1,181.00
ACT Score	26.75	30.00
High School GPA	3.86	3.71

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- The average STA/ACT score and High School GPA for all incoming freshmen students in the two academic years 2017-2018 and 2018-2019 have met their targets.
- Nothing needs to be done at this time. The faculty will continue to monitor this program objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program objective.

**Data Analysis for 2017-2019 Cycle
Assessment of Program Objectives**

PO 2: At least 50% of the student population will be from underrepresented groups

Assessment Data Collection:

	AY 2017-2018	AY 2018-2019
Hispanic/Latino	185	190
Black or African American	41	37
White	30	29
Nonresident Alien	19	25
Two or More Races	3	8
Asian	4	4
Pacific Islander	0	0
Not Reported	2	1
Total	284	294
% from Minority Groups	81%	80%

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- About 80% of our student population is from the underrepresented groups of Hispanic/Latino, Black or African American, and Pacific Islander. Students with two or more races are also included in the percentage of minorities shown in the table above.
- Nothing needs to be done at this time. The faculty will continue to monitor this program objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program objective.

**Data Analysis for 2017-2019 Cycle
Assessment of Program Objectives**

PO 3: The department will organize at least 5 visits to construction jobsites annually

Assessment Data Collection:

	AY 2017-2018	AY 2018-2019
Number of Visits	4	10
Number of Attendees	66	144

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Number of Visits	2	2	5	5
Number of Attendees	40	26	83	61

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- The number of jobsite visits in the 2017-2018 academic year fell short by one visit of the targeted five visits. However, the number of visits in the 2018-2019 academic year were double the targeted number.
- 144 students attended jobsite visits in 2018-2019.
- Nothing needs to be done at this time. The faculty will continue to monitor this program objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program objective.

**Data Analysis for 2017-2019 Cycle
Assessment of Program Objectives**

PO 4: Student teams representing the school in construction management competitions will rank among the top three

Assessment Data Collection:

	AY 2017-2018	AY 2018-2019
ABC Construction Management Competition	First Place	Second Place
% Among Top Three	100%	100%

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- The CM student teams from FIU continue to outperform their peers from other academic institutions in the ABC Construction Management Competition for the past eight years.
- Nothing needs to be done at this time. The faculty will continue to monitor this program objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program objective.

**Data Analysis for 2017-2019 Cycle
Assessment of Program Objectives**

PO 5: Graduating seniors will be satisfied with the communication (oral and written) skills they develop in the program

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Written Communications	3.50	3.71	3.75	3.85
Oral Communications	3.36	3.79	3.75	3.89

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the data collected on student satisfaction with the written communication skills they develop in the program have exceeded their target of a 3.50 average.
- The same data for the oral communication have also met the 3.50 targeted average except for the Fall 2017 term, which was slightly below target.
- Nothing needs to be done at this time. The faculty will continue to monitor this program objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program objective.

**Data Analysis for 2017-2019 Cycle
Assessment of Program Objectives**

PO 6: Graduating seniors will be overall satisfied with their experience in the program

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
Overall Satisfaction with the Program	3.36	3.64	3.75	4.00

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All student satisfaction with the program data that was collected have exceeded their target with the exception of the Fall 2017 term, which was slightly below the 3.50 target.
- During the past two years, the department has redoubled its efforts in gathering feedback from students and other stakeholders (e.g. industry partners) in order to improve the overall student experience. Accordingly, the data for this program objective is trending upwards.
- Nothing needs to be done at this time. The faculty will continue to monitor this program objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program objective.

**Data Analysis for 2017-2019 Cycle
Assessment of Program Objectives**

PO 7: At least 80% of the graduating seniors will be employed or enrolled in graduate school upon graduation

Assessment Data Collection:

	Fall 2017	Spring 2018	Fall 2018	Spring 2019
% of graduates employed	86%	71%	100%	85%

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- All the student employment data that was collected have exceeded their target of at least 80% with the exception of the Spring 2018 term.
- The size of the cohort graduating in Spring 2018 was relatively small (14 graduates) some of which were international students who had difficulty finding an employment opportunity.
- Nothing needs to be done at this time. The faculty will continue to monitor this program objective in the 2019-2021 cycle.

Use of Results and Follow-Up:

- No follow-up is required for this program objective.

**Data Analysis for 2017-2019 Cycle
Assessment of Program Objectives**

**PO 8: Maintain the program accreditation from the American Council for Construction
Education (ACCE)**

Assessment Data Collection:

- The program has been continuously accredited by ACCE since 1984. The last accreditation renewal was for six years from February 2014 through February 2020.
- The last accreditation visit occurred in October 2013 and the Visiting Team's report identified no weaknesses and only two concerns both of which are related to Section 3 of the old standards.
- The program addressed the two concerns identified during the last accreditation visit shortly thereafter. In addition, these two concerns were related to ACCE Topical Content and Course Student Learning Outcomes (CSLO), both of which are now obsolete according to the new ACCE Outcome-Based Standards.
- The program started planning for the new standards in Fall 2016. The plan was implemented and performance data collected starting the Fall 2017 term.
- The next accreditation Visiting Team will conduct the site visit on October 12-15, 2019. The self-study report has already been sent to ACCE and shared with the Visiting Team. The Student Learning Outcomes (SLO) binders are ready and will be shared with the Visiting Team upon their arrival to FIU.

Assessment Data Analysis:

The department's faculty analyzed and discussed the data above during their September 26th, 2019 meeting. The following was discussed and decided:

- The preparations for the upcoming ACCE site visit seem to be in order. All faculty members have contributed to these preparations and stand ready to extend any help needed or information requested by the Visiting Team.
- The faculty will act upon the comments of the Visiting Team upon becoming available to continue to improve the quality of the program.

Use of Results and Follow-Up:

- Follow-up for this program objective will start in the first faculty meeting after the comments of the October 2019 Visiting Team become available.