

Annual Assessment Report Fall 2019 to Summer 2020 (AY 20)

Master of Science in Operations Management
(MSOM) and Master of Science in Engineering
Management (MSEM)

Update of preparation plan for the accreditation visit from the Higher Learning
Commission (HLC). Update of preparation plan for the accreditation visit from the
Higher Learning Commission (HLC).

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Annual Report Preparation Activities

Preparation activities include an analysis of previous action plan, annual update program reviews, accreditation visits, a program review in December of 2014, organizational design review/organization chart, review of program goals and student learning outcomes, a plan of course objective review and mapping, an analysis of student needs and demand, review and implementation of accountability processes including assessment techniques, graduation rates, continuous improvement initiatives, faculty qualifications and a timeline of update actions. The report describes timelines for accreditation preparation. The January 2013 report was validated during the December 2014 program review except for the notations and updates in this report. Progress toward the initial plan was reviewed, adjusted and validated. Annual updates are provided for each academic year.

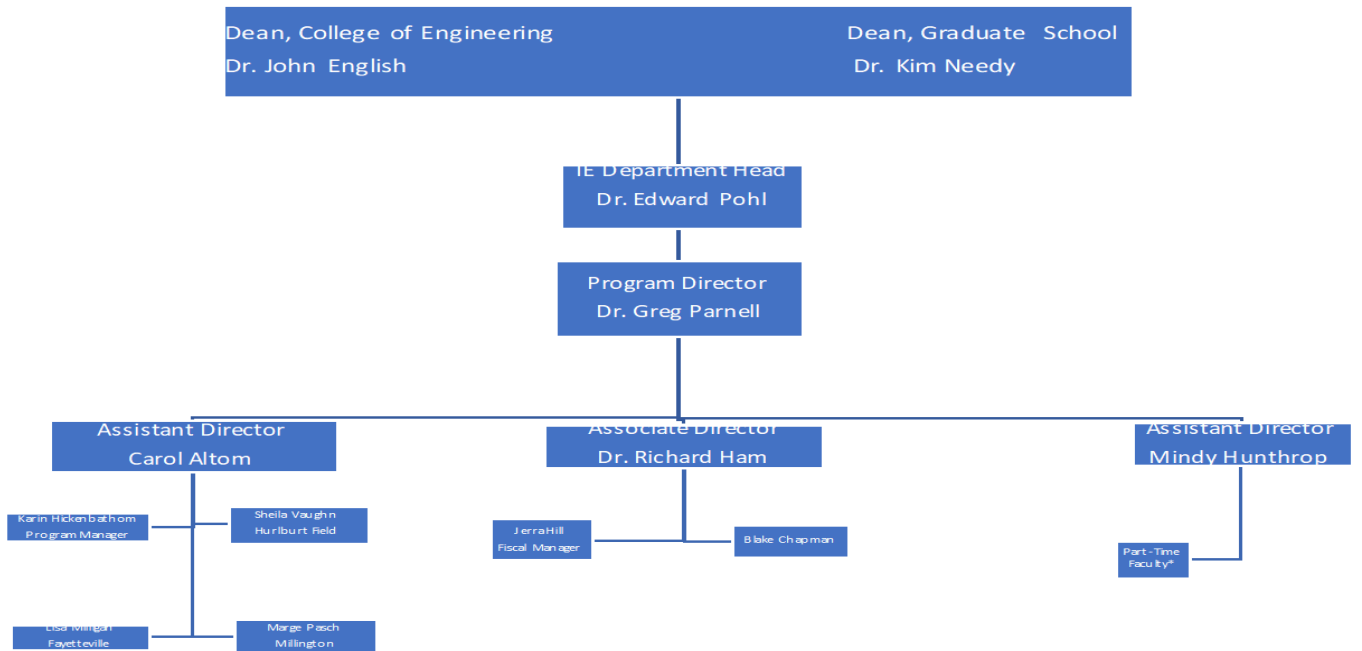
Previous Program Reviews and Accreditation Reports And Future Reporting

The report was prepared in anticipation of the HLC in 2021. Previous reports of accreditation review are on file for review. All reviews are by Academic Year, approximately August 1-July 30 each year to capture Fall 8W1, Fall 8W2, Spring 8W1, Spring 8W2 and summer term.

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Organizational Chart



Program Goals and Education Learning Objectives

As part of the first step of continuous improvement, the December 2014 program review evaluated and revised the program outcomes and outcomes to align with University nomenclature and clarify new program emphasis areas. The new program outcomes were approved in 2015. The new goals and outcomes were reviewed for this academic year and were validated during the annual faculty meeting in July of 2019. In the summer 2020 faculty meeting, program outcomes and goals were re-evaluated and submitted for approval in Fall 2020. The current goals and objectives include:

MS in Operations Management Goals

1. Provide internationally competitive and industry recognized operations management graduate education to meet emerging needs of operations management professionals.
2. Prepare operations management students to assume leadership roles in industry and government.

MS in Operations Management Learning Outcomes

1. Apply the skills and techniques required to lead and manage diverse and inclusive, complex global operations involving processes, technology, and and people.
2. Create value through strategic, tactical, and operational change that is agile, resilient, and sustainable. change.
3. Lead and manage diverse, multi-disciplinary, geographically dispersed teams and projects.
4. Identify problems, analyze alternatives, and design solutions considering financial, environmental, and societal impact for the public good..
5. Use quantitative techniques and models to analyze data to support data-driven decision-making.
6. Assess legal, regulatory, professional, and ethical organizational and individual responsibilities.
7. Communicate clearly and concisely, both orally and in writing, to stakeholders and senior decision-makers.

As part of the ongoing improvement effort, the program director set a standard to map all outcomes to course objectives during all course reviews and development. Learning outcome 7 will be included in every course going forward.

We need goals and outcomes for MSEM

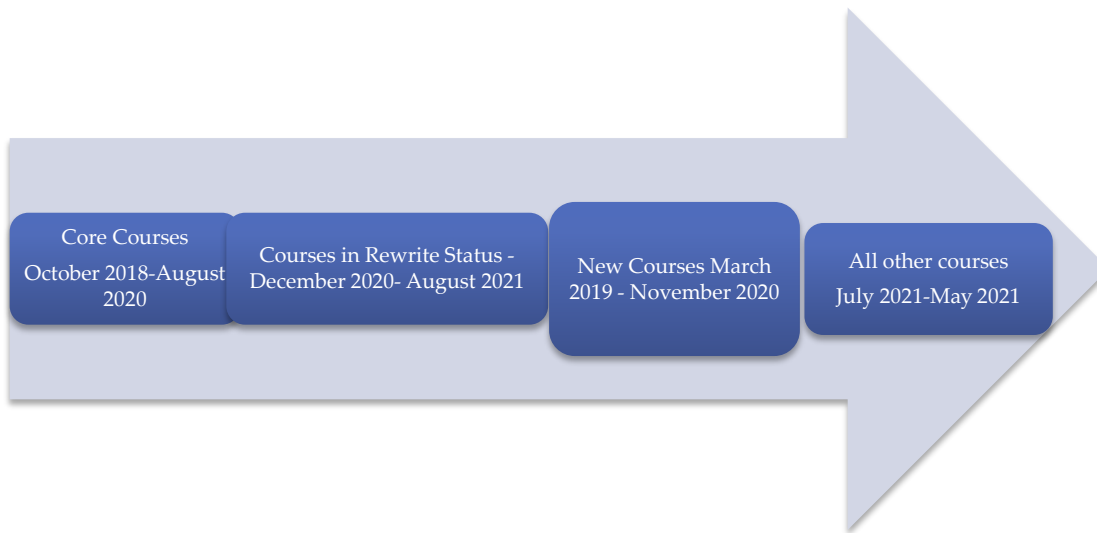
Course Objectives

Course objectives are validated during course reviews in the priority listed below. As courses are reviewed and revised, all course objectives are aligned to new program education learning outcomes starting October 2014 through August 2018. During the 2016-2017 program review, the MSOM leadership established the following priorities for annual course reviews:

1. Core courses.
2. Courses with high enrollments.
3. New courses needed to support new certificates or programs or body of knowledge.
4. Rewrites based on instructor and/or student feedback.

During the 2015-2016 update, course reviews were divided into the following “tiers” with corresponding compensation based on level of effort: 1) Complete revision or new course; 2) Update to match new objectives; Each course objective is mapped to the appropriate corresponding program education learning outcomes and evaluated by the team using the Quality Matters checklist. Each curriculum development and/or objective review includes, at a minimum: the assistant director for distance education, two faculty subject matter experts and an instructional system designer from Global Campus. A model syllabus and Blackboard template is created for each development. Additionally, the program review established a strategy to begin certificate development based on demand that support industry organization bodies of knowledge for certification. The previous course review schedule was completed with the new updated plan

depicted below:



The schedule is a living document, often changed due to new requirements, industry developments and priority changes based on courses needed to support other goals. Core courses already reviewed, updated or designed in 2014-2015 and 2015-2016 included Project Management, Organization and Control. The core courses were re-evaluated in 2018 and 2019. Strategic Management, Finance for Operations Managers and Economic Decision Making. New courses developed and delivered in 2016-2017 included Operations Management of Unmanned Aircraft Systems, Risk Management to support new certificates. In 2019-2020, Cybersecurity, Resilient Design and Human Factors were developed. In addition to the Project Management Certificate, the Lean Six Sigma and Homeland Security Graduate Certificates started in AY 20. Initial enrollments for all certificates exceeded initial estimates.

For 2017-2018 and into 2019-2020, the following courses were updated and validated Cybersecurity for Operations Managers, Lean Six Sigma, Quality Management, Risk Management, Decision Models.

OMGT Course Mapping

A formal process was developed for all developments, redevelopments, rebuilds or new courses that include a director review of the mapping of course objectives/learning outcomes to program outcomes.

The OMGT courses are mapped to the program outcomes to aid in the course mapping.

1. Apply the skills and techniques required to lead and manage complex global operations involving processes, technology, and people.

5003, 5013, 5113, 5133, 5143, 5253, 5303, 5373, 5423, 5473, 5493, 5503, 5623, 5733, 5783, 5823, 5873, 5993

2. Design plans and controls to create value through strategic, tactical, and operational change. 5003,

5013, 5113, 5373, 5473, 5493, 5623, 5633, 5733, 5873, 5983, 5993

3. Design plans and controls to lead and manage multi-disciplinary projects.

5013, 5113, 5473, 5493, 5733, 5783, 5873, 5983, 5993

4. Identify problems, analyze alternatives, and design solutions considering financial, environmental, and societal impact.

5003, 5013, 5113, 5123/5463, 5373, 5423, 5473, 5493, 5503, 5623, 5733, 5783, 5793, 5983, 5993

5. Use quantitative techniques and models to analyze data to support decision-making.

5003, 5013, 5113, 5123/5463, 5373, 5423, 5433, 5443, 5473, 5493, 5503, 5613, 5623, 5653, 5673, 5733, 5783, 5793, 5833, 5873, 5983, 5993

6. Assess legal, regulatory, professional, and ethical corporate and individual responsibilities. 5113,

5463, 5493, 5143, 5253, 5303, 5403, 5423, 5623, 5733, 5783, 5873, 5983, 5993

7. Write and present to stakeholders and senior decision makers.

5003, 5013, 5113, 5123, 5373, 5423, 5443, 5473, 5493, 5503, 5623, 5653, 5733, 5783, 5793, 5873, 5983, 5993

Key

Green / Grey = verified and mapped after outcomes established (course has been created/redesigned since outcomes established)

Blue = development in progress during the current semester

Red = not verified after outcomes established (course has not been redesigned since outcomes established)

Assessment Techniques

Program and course assessment involved three measurements: comprehensive exam data, student reported data, site data (which includes course delivery) and modality data (online, live, hybrid). Previously in person instructor evaluations with as-needed evaluations based on input from students are also considered. Beginning in AY 2017, in person visits for comprehensive examinations were replaced with virtual exams using web-based video platforms eliminating many trips to remote sites. The addition of three full-time faculty increased course surveillance, allowing standardization of accelerated redesign of courses assessed as needing updates. Ad Hoc and Quality Matters reviews were used throughout the year.

Comprehensive exam performance by instructor, mode and course were modified to focus on student and instructor evaluations along with grade assessment and Quality Matters assessments with Global Campus. The original automated system in UA Connect was unable to process needed data for the original plan. During AY 2017-2018, the comprehensive exam process was revamped to include a more rigorous presentation using program outcomes and questions designed to assess student attainment of holistic, integrated views of operations management problems. Feedback has been positive from students and board participants.

Students continue to complete an exit survey prior to comprehensive examination evaluating their perception of meeting each of the program goals and outcomes to establish trends or differences in sites or delivery method. One benefit for recurring reviews are the HLC site reviews conducted at Hurlburt Field and Millington NAS campuses. In AY 2020, the Hurlburt campus was visited by HLC validating many program initiatives. There were several laudatory comments from the auditor's and information added to the MSOM process. Notes from HLC comments included:

1. Students at Hurlburt love certificates, particularly homeland and project management - cyber course was mentioned as very desired. NOTE: Directors increased research on certificates to meet student needs.
2. Students expressed problems with Proctor U and Inclusive Access text books. We discussed our recent initiatives in both areas. NOTE: This is an ongoing monitoring process by the Assistant Director for Faculty with frequent contact for improvement.
3. HLC Faculty qualifications that were updated in 2017 requiring faculty to possess one degree higher than area teaching or document exceptional qualifications; we described our process through several committees with qualifications on the grad faculty application. NOTE: A process to maintain CVs showing degrees and experience more in depth was initiated and completed in AY 2020.
4. Faculty praised the annual faculty meeting as a way to aid continuous improvement.
6. Complaint process, local support was graded very high by students and faculty.

This process has been validated and is in the sustainment phase.

Program Education Learning Outcomes

Evaluation of program efficacy included review of comprehensive examination data, student reported surveys, site evaluation, and modality analysis. Additionally, course reviews also include breakouts with instructors teaching the same course at the annual faculty meeting to review effective and ineffective methods.

Comprehensive Exam Data

Pass rates for comprehensive exams for the first attempt was 99%. The rubric to measure performance evolved with more holistic views of master of objectives instead of courses.

Student Enrollments and Online Percentage

2019-2020 included 635 active MSOM students, 2,588 course enrollments and 2,358 enrollments were online (91%), for a one percent decrease from the previous year.

Graduation Data

175 students graduated with a MSOM degree during the 2019-2020 academic year compared to 163 the previous year. 139 students graduated with a Project Management graduate certificate compared to 103 the previous year. This is the first year of the Homeland Security graduate certificate and the Lean Six Sigma graduate certificate. 4 students graduated with a Homeland Security graduate certificate and 10 students graduated with a Lean Six Sigma graduate certificate.

GPA Data

The average GPA was 3.68 for the year compared to 3.64 the previous year. There were three courses with all 4.0 GPAs and there were seven instructors that gave all 4.0 grades. Instructors were given training on development of assessments to differentiate between student performance.

Continuous Improvement Initiative Data

Program Updates

Program review plan from 2014-2015 established the following (annual updates are included below):

1. Pre-requisites assigned to specific courses as opposed to only the program; UPDATE: Complete in 2015-2016. UPDATE 2017-2018: Added to each course design to evaluate prerequisite requirements.

2. Adding the statement to the admissions guidelines: OMGT 5003 is foundational to all courses and must be taken in the first term; UPDATE: Completed in 2015-2016. UPDATE 2015-2016: Re-aligned pre-requisites to courses vice the program. Update 2017-2018; After staff review process initiated to allow entry to degree from student's certificate with less than 3.0 GPA and no GRE if students in the certificate maintain 3.5 GPA. UPDATE 2018-2019: Ongoing review each year. UPDATE 2019-2020: Sustainment.

3. Level II language requirements were mandatory in the graduate school until Fall 2014, but became recommended only. The program needs Level II language proficiency for the technical writing in coursework and has returned it to mandatory. Analytical writing returned to previous required 4.5 (from 4.0) based on faculty feedback of student performance. In addition, adding the statement: The MSOM English Language Proficiency Policy requires Level II non-native speakers of English to complete ELAC 4043 Research Writing in the STEM fields no later than the first semester of graduate level courses. UPDATE: Completed in 2015-2016. UPDATE 2017-2018: established new tentative acceptance pending completion of university language program and passing competency test. UPDATE 2018-2019: initial data shows this initiative is successful. UPDAT 2019-2020: Sustainment. The requirement seems more than sufficient.

4. The focus areas of Business Management, Industrial Management, Human Resource Management, and Safety and Health Care Management are being deleted to pursue new areas of concentration this year. No focus area previously led to any certificate or transcript entry. UPDATE: Deleted all concentrations. UPDATE 2016-2017: Addition of Project Management Certificate essentially provided a concentration with an actual transcript entry and credential. UPDATE 2017-2018; Sustainment, with added certificates in three areas. UPDATE 2017-2018: Homeland Security and Lean Six Sigma certificates in the approval process. Update 2017-2018: Homeland Security and Lean certificates approved for Fall 2019. Planning for integration of supporting courses and rewrites in the next AY. UPDATE 2018-2019: Initial enrollment trends show certificates exceeding estimates. UPDATE: 2019-2020: Lean Six Sigma and Homeland Security certificates were approved and show increasing enrollments.

Program reviews and any open items from previous assessments were reviewed for progress. Each area is identified as Planning Phase, In Progress Phase or Sustainment Phase. The 2013 independent review and the 2014-2015 Review included the following (updates provided each year):

- As courses are transitioned from live to on-line courses, care must be taken to ensure that appropriate contact hours are being maintained and documented to meet state requirements. *Review Comment: Addition of new Assistant Director focusing on faculty, new mentoring programs and use of Quality Matters reviews ensures this area is appropriately addressed. Status: Sustainment Phase. UPDATE: Periodic validation of syllabi and student feedback indicates contact hours are followed. UPDATE 2016-2017: New modes were tried using synchronous virtual course with students from several campuses. Update 2017-2018; Sustainment. Update 2018-2019; Sustainment. UPDATE 2019-2020: We reviewed every course to verify that they meet the university requirements for contact hours. Contact hours are now part of our course development process.*
- How can MSOM better utilize the development office to exploit opportunities with a large and satisfied alumni base? *Review Comment: Assistant Director Nichols began a campaign for a MSOM Alumni Charter and a series of 40th Anniversary Event. Two graduates have volunteered to establish the society. Status: In Progress Phase. UPDATE: In 2016-2017 new partnerships added including two COE awards for alumni and a scholarship. UPDATE 2017-2018: Sustainment with two annual awards and scholarship. UPDATE 2018-2019: Sustainment with two annual awards and scholarship. UPATE 2019-2020: Sustainment.*
- Some concerns about ProctorU and failed Internet connections during exams. This seems to happen fairly frequently and is a problem of significance. *Review Comment: After a series of meetings, ProcterU has committed to scheduling more staff. Students have been trained on Internet requirements and may take exams at one of the campuses. No significant or systemic problems have been noted over the last 90 days, but staff continues to monitor. Status: Sustainment Phase. Update 2018-2019: numerous student issues notes with ProctorU in ability to deal with additional loads. Numerous meetings with Global Campus and ProctorU were pursued and appears to have resolved most issues. Ongoing follow up in future years. UPDATE 2019-2020: Continuing to monitor; some faculty using Respondus Browser.*
- Need strong controls on quality, especially during admissions, to ensure that program quality is perceived as being as strong as other degree programs within the IE department. *Review Comments: Admission requirements, including GPA, TOFEL, and GRE requirements were increased in 2014-2015. Gradable hours were increased to 60. Admission processes and transfer*

credit. Status: Sustainment Phase. UPDATE 2018-2019: No adverse effects observed from this year's update to the admission process. UPDATE 2019-2020: Sustainment.

- *Need to recruit specifically for diversity in MSOM as well. Consider partnerships with HBCUs similar to existing programs in Chemical Engineering. Review Comment: Initial discussions but no implementation of this program. Status: In Planning Phase. UPDATE: Initial effort to recruit from HBCUs in Little Rock and Pine Bluff yielded less than 5 enrollments. Continuing to look for opportunities. Update 2017-2018: Assessing use of remote sites to assist in diversity planning. Update 2018-2019: Several new initiatives pursued but not yet approved. Continuing to focus on diversity recruit when positions come open. UPDATE 2019-2020: Sustainment of strategy.*
- *Need to better integrate MSOM into the departmental strategic plan. Review Comment: MSOM has been aligned with the department and college strategic plans. The MSOM Director is a key developer of both plans and ensures MSOM is integrated into the plan. Status: In Progress Phase. UPDATE 2017-2018: MSOM fully integrated into the Department and College strategic plan this year. UPDATE 2018-2019: Sustainment phase. UPDATE 2019-2020: Sustainment.*
- *Some concerns about waiving the GRE when the GPA is over a target value. Review Comment: Current databases do not allow cross-referencing GRE scores to predict success; however, the graduation rate is typically 87-89%, indicating current admission processes generally predict success. The new Hobson's program promises the ability to evaluate predictors of success over time, providing data to make admission policy decisions. Status: In Progress Phase. UPDATE: Hobson's program is unable to meet requirements. A work around was developed this year using reports from UACONNECT. UPDATE 2016-2017: Sustainment phase. Initial reviews show no adverse effects. UPDATE: 2018-2019: Sustainment and monitoring. No adverse trends have been identified. Update 2019-2020: Initial data has shown little or no impact to student success. Allowing entry from certificate program with a 3.0 GPA in the certificate allows several non-traditional students to begin the program and be successful. Continuing to monitor data.*
- *Some concern about the Business Law deficiency course. Given that few incoming students have had the course as an undergraduate, it effectively adds three hours to the degree program and it is not a required prerequisite for any subsequent course. Review Comment: Several initiatives were developed during the program review around pre-requisites. All pre-requisites were mapped to objectives in course as opposed to the program overall. Additionally, proficiency exams were eliminated in favor of CLEP and DANTES course with verifiable reliability and validity data. Members of the team doing the program review determined Business Law was needed to meet objectives in Leadership and Human Resources courses. Status: Sustainment Phase. UPDATE: A rewrite of the BLaw class in process including a new textbook. UPDATE: 2016-2017. Rewrite*

complete. Initial reviews are positive. Continuing to monitor. UPDATE 2017-2018: Sustainment phase. Update 2018-2019: New trends in ethics validated the need for the course as a pre-requisite for several courses, but not the entire program. UPDATE 2019-2020; Sustainment.

- Some concern about the consistency or rigor in the oral final exam. Review Comments: *The comprehensive exam is performed using a rubric and provides data to compare student performance in course objectives and program education learning outcomes. A new set of exam policies allows a pass or a need to answer further questions in a specific area with one oral opportunity. If the course is failed, then a written exam is administered. If it is not passed the second time, the student is dismissed from the program. Status: Sustainment Phase. UPDATE: The new process included holistic questions on each program outcome. UPDATE 2016-2017: Continued improvement of the exam process has garnered laudable comments from committee members and students. Update 2017-2018: New format with focus on program outcomes for student presentations and committee questions. Feedback from committee members and students has been positive. UPDATE 2018-2019: Performance on the comprehensive continues to show student master of program outcomes. Sustainment phase. UPDATE 201-92020: Sustainment phase.*
- Consider adding additional coursework related to Systems Engineering concepts. Review Comments: *MSOM program leadership began a marketing research effort to determine demand for certificate programs. After evaluating the marketing data, leadership determined to pursue certificates in project management, healthcare management/logistics, lean and quality, homeland security and risk. Each of these certificates requires development of one course to complete the sequence. In addition, faculty with systems and risk credentials have been recruited in the last nine months. The course in development in homeland security focuses on systems thinking and design. Course development continues using industrial engineering and systems concepts. Status: In Progress Phase. UPDATE: Systems engineering courses are available in our MSEM program. Project Management was selected for the first certificate and was approved for Fall 2017 offering. Other certificates will be submitted after evaluating the PM certificate process. UPDATE 2018-2019: Current or new EMGT courses provide concepts in system engineering. MSOM and new MSEM program students may take those courses to update skills. UPDATE 2019-2020: Sustainment.*

Course Updates

Following previous years' priorities, the following courses were developed or updated to support demand during this AY:

1. New Courses:

OMGT 5943 Crisis Management and Resilient Design

2, Rebuild or Redesign:

OMGT 5013	Supply Chain Management
OMGT 5113	HR Management
OMGT 5423	Global Competition
OMGT 5433	Cost Estimation Models
OMGT 5463	Economic Decision Making
OMGT 5733	Human Factors
OMGT 5943	Crisis Management and Resilient Design
EMGT 5033	Introduction to Engineering Management

All courses were reviewed following the process depicted on the timeline section.

Certificates

MSOM leadership initiated industry contacts and a marketing research contract and benchmarking to assess demand. The following certificates are in development in the order listed based on demand:

1. Project Management (Approved)
2. Lean Six Sigma (Approved)
3. Homeland Security for Operations Managers (Approved)
4. Risk Management (Reviewing and validating need) UPDATE: Tabled for AY 2020
5. Healthcare Logistics (Reviewing and validating need) UPDATE: Tabled for AY 2020

Emerging needs for certificates in analytics, operations management and engineering management are in progress.

Project Management Certificate

The Project Management Certificate completed one year of and exceeded expectations for enrollment and interest. The faculty review recommended the following updates:

1. Continuing to improve PMBOK alignment of PM an advanced PM courses with the last PMBOK update.

2. Review techniques in other than PM and advanced PM courses to ensure alignment is consistent.

Both the PM and Advanced PM were redeveloped to align with the PMBOK..

Each certificate aligns with industry-accepted certification body of knowledge and coursework.

Enrollments exceeded original estimates:

AY 2019 PM Applications	AY 2019 Total PM Students	AY 2019 PM Students Graduating
285	781	103
AY 2020 PM Applications	AY 2020 Total PM Students	AY 2020PM Students Graduating
186	744	139

Lean Six Sigma Certificate

The Lean Six Sigma Certificate completed one year of and exceeded expectations for enrollment and interest. The faculty review recommended the following updates:

1. Improve BOK alignment of Lean and Advanced Lean courses with the last BOK update and IASSC Greenbelt outcomes
2. Review techniques to ensure alignment is consistent.

Advanced Lean course was redeveloped to improve alignment.

Enrollments exceeded original estimates:

AY 2020 LSS Applications	AY 2020 LSS Students	AY 2020 LSS Students Graduating
40	126	10

Homeland Security Certificate

The Homeland Security Certificate completed one year of and exceeded expectations for enrollment and interest. The faculty review recommended the following updates:

1. Improve BOK alignment of Introduction to Homeland Security courses with the last ASIS BOK update and CPP outcomes
2. Review techniques to ensure alignment is consistent.

Crisis Management and Resilient Design was redeveloped to improve alignment and provide more in depth BOK coverage.

Enrollments exceeded original estimates:

AY 2020 HS Applications	AY 2020 HS Students	AY 2020 HS Students Graduating
25	71	4

Miscellaneous Updates

The following significant events were completed due to faculty input, student feedback or improvement initiatives:

1. Certificate development was ongoing and resulted in new courses and one certificate roll out.
2. A sister program, M.S. in Engineering Management Program, was initially approved during this year to proceed with formal ADHE approval. *UPDATE: Approved for Fall 2017 roll out. Update 2017-2018; EM begin in fall of 2018 and was supported by OMGT courses and staff; exceeded admission estimates. Update 2018-2019: EM, Lean and the Homeland Certificates were pushed to the Fall 2019 due to approval process. UPDATE 2019-2020: Initial data shows both certificates exceeding estimates and growing as students begin using the new skills.*