

AGENDA

UW-GREEN BAY FACULTY SENATE MEETING NO. 6

Wednesday, February 26, 2020

1965 Room, 3:15 p.m. (**NOTE: Faculty Senate will start at 3:15 p.m. today to allow faculty to attend the Carnegie Dartlet reveal presentation at the Weidner Center**)

Presiding Officer: Mark Klemp, Speaker

Parliamentarian: Steve Meyer

1. CALL TO ORDER

2. APPROVAL OF MINUTES OF FACULTY SENATE MEETING NO. 4 December 11, 2019 [page 2]

3. INTERIM CHANCELLOR'S REPORT

4. OLD BUSINESS

- a. None

5. NEW BUSINESS

- a. Slate of Candidates for the Faculty Elective Committees [page 7]
Presented by Tetyana Malysheva, Chair of the Committee on Committees and Nominations
- b. Revised Faculty Reviews Procedures (and the accompanying Twenty-four Credit Hour Teaching Load Policy) (first reading) [page 9]
Presented by Jim Loebel, UC Chair
- c. Request for Authorization to Implement a B.S. in Electrical Engineering at UW-Green Bay (first reading) [page 13]
Presented by Dean John Katers
- d. Request for Future Business

6. PROVOST'S REPORT

7. OTHER REPORTS

- a. Academic Affairs Council Report [page 44]
- b. Graduate Academic Affairs Council Report [page 46]
- c. University Committee Report – Presented by UC Chair Jim Loebel
- d. Faculty Rep Report – Presented by Jon Shelton
- e. Academic Staff Report – Presented by Pat Hicks
- f. University Staff Report – Presented by Kim Mezger
- g. Student Government Report – Presented by Abbie Wagaman

8. ADJOURNMENT

[draft]

MINUTES 2019-2020
UW-GREEN BAY FACULTY SENATE MEETING NO. 4
Wednesday, December 11, 2019
1965 Room, University Union

Presiding Officer: Mark Klemp, Speaker of the Senate
Parliamentarian: Steve Meyer, Secretary of the Faculty and Staff

PRESENT: Mike Alexander (Provost, *ex-officio*), Mandeep Bakshi (ALTERNATE-NAS), Jason Cowell (PSYCH), Christin DePouw (EDUC), Janaina Fogaca (PSYCH), William Gear (ALTERNATE-HUB), Joan Groessl (SOCW), Richard Hein (NAS), Maruf Hossain (NAS), Amy Kabrhel (NAS), Mark Klemp (NAS-UC), Jim Loebel (BUA-UC), Kaoime Malloy (THEATRE), Tetyana Malysheva (RSE), Eric Morgan (DJS), Paul Mueller (HUB), Dianne Murphy (BUA), Val Murrenus-Pilmaier (HUS), Megan Olson Hunt (NAS), Sampath Ranganathan (BUA), Matthew Raunio (BUA), Stephanie Rhee (SOCW), Bill Sallak (MUSIC), Jon Shelton (DJS-UC), Courtney Sherman (MUSIC), Christine Smith (PSYCH-UC), Gail Trimberger (SOCW-UC), Katie Turkiewicz (CIS), Sheryl Van Gruensven (Interim Chancellor, *ex-officio*), Christine Vandenhouten (NURS), David Voelker (HUS), Sam Watson (AND), Aaron Weinschenk (PEA), Brian Welsch (NAS), and Julie Wondergem (NAS-UC)

NOT PRESENT: Kristy Deetz (AND), Stefan Hall (HUS), Ray Hutchison (PEA), Rebecca Nesvet (HUS), and Heidi Sherman (HUS-UC)

REPRESENTATIVES: Kim Mezger (USC), Lynn Niemi (ASC), and Abbie Wagaman (SGA)

GUESTS: Scott Ashmann (Assoc. Dean, CHESW), Ben Joniaux (Chief of Staff), and Mary Kate Ontaneda (SOFAS Asst.)

1. CALL TO ORDER.

“Baby, It’s Cold Outside” is not just a Christmas song, it was indicative of Green Bay’s temperature. With a high temperature of only 8°F, Speaker Mark Klemp banged his frozen gavel at 3:01 p.m. calling to order the fourth Faculty Senate meeting of the 2019-2020 academic year.

2. APPROVAL OF MINUTES OF FACULTY SENATE MEETING NO. 3, November 13, 2019

As visions of sugar plums danced in senators’ heads (but only cookies and veggies available at the refreshment table), no one suggested any changes to October’s minutes and they were approved via consensus.

3. INTERIM CHANCELLOR’S REPORT

Interim Chancellor Van Gruensven thanked everyone for a great semester and conveyed her exuberance for the upcoming commencement ceremony serving as Chancellor.

At the December Board of Regents meeting it was announced that JCOER (Joint Committee on Employment Relations) will meet on 18 December 2019 to approve PayPlan. This will result in a 2% increase on 1 January 2020 and 2021. UWGB is moving quickly to hire a CEO (Campus Executive Officer) for the Sheboygan campus; expect a hire by 1 January 2020.

Interim Chancellor Van Gruensven stated the President and the Board of Regents are focusing attention on Wisconsin's changing demographics and campuses that are looking to cut their budgets. As a result, the President and the Board are expecting campuses to present 5-6 year enrollment projections and strategies to address enrollment shortfalls. Also at the Board meeting, a presentation on Enterprise Risk Management (sounds like a presentation all *Star Trek* captains should have attended) indicated that all campuses should be assessing institutional risk. Every campus should have an annual strategic plan – and a 3-5 year strategic plan – addressing risk areas such as enrollment, demographics, retention, leadership turnover, faculty and staff turnover, compliance, IT security, and behavioral health. There was also a presentation regarding how to attract and retain adult learners, including flexible teaching times, various modes of instruction, etc. According to sources, there are 400,000 people in Wisconsin looking into options to either finish their degree or receive additional training.

4. OLD BUSINESS

a. None

5. NEW BUSINESS

a. Resolution on Granting Degrees

The semiannual heated debate regarding whether we should grant degrees was renewed. In the end, **Senator Loebel moved that we grant degrees at December Commencement, seconded by Senator Ranganathan.** The cold temperatures apparently quelled much of the typical heated discussion and the senate **voted to support the resolution 32-0-0.**

b. Request for future business

Senator Sallak requested that senate receive an update on the implementation of the IBB (Incentive-Based Budget model). Senator Vandenhouten requested a future discussion on the evaluation process for Associate Lecturers.

6. PROVOST'S REPORT

Starting his report with good news, Provost Alexander announced the search for the new Associate Vice Chancellor for Enrollment Services was a success, Dr. Stephen McKellips will start 21 January 2020. Provost Alexander also excitedly announced the promotion of Jennifer Jones to Executive Director of Admissions. The Provost lauded Ms. Jones for filling two critical Student Services roles over the course of the previous 18 months.

Provost Alexander wants the record to show that he extends his congratulations to faculty regarding two recent events. Tiny Earth was an “amazing” event that took place 6 December 2019 at Lambeau Field, bringing together the community from far-and-wide to view poster presentations on the impacts of soil on our community. High school students who worked with their teachers and UWGB faculty presented these posters. Also receiving the Provost's accolades was the Common CAHSS event that took place 10 December 2019 at the Weidner Center. These two events show what is best about UWGB – engaging the community in tackling important issues and connected our students to our faculty in profound ways.

Provost Alexander next responded to a request to address Academic Affairs strategies going forward. Prior to Thanksgiving, the Provost met with the UC for two hours to discuss issues that are frustrating to both faculty and administration and to, hopefully, find solutions that work for the campus as a whole. Part of that conversation dealt with where we are trying to move as a university. Higher education is going through a time of profound change. The Provost said we have two options, we can ignore that change, or, we can accept the change is happening and decide how we are going to thrive within it. The question is now “How do we make sure we are serving our region and our community to make sure we have an educated populace, an informed population, that is able to be productive citizens?” When we became an access university, we need to keep defining what that means – what it means to bring people in as an access university, what it means to retain them, and what it means to responsibly graduate them within a certain amount of time. The reality is that in the future there are not going to be enough traditional students and there will be enormous competition to get them to enroll in our institution; we don’t have the resources to compete for very long. We need to start thinking differently about how higher education is going to work at UWGB. There are currently 36M Americans who have started college, but did not finish; this includes 21% of all Wisconsin citizens over 25 years of age. If those individuals come back to school, they are most likely going to come back to the institution where they originally started or where they currently live to finish their degree. We need to choose to fund this university differently through two tracks: aggressively pursuing our continuing education piece [e.g., College Credit in High School (CCIHS) and businesses outsourcing their business training to us] and maintain (or grow) our 4,000 or so in-residence students. But, we must grow responsibly in a certain order or we will collapse in our own growth. As we grow, we need to grow in a way that honors where our growth is occurring and continually reinvest there so we can do the other things we know are also the right things to do (e.g., grow Nursing). How has UWGB been the only UW, besides Madison, to grow recently? Our traditional undergraduate numbers have grown, but only very slightly; where our gains have primarily occurred are in graduate students through online and collaborative programs, CCIHS, and adult learning. The Provost asked that we worked together on this in a way that allows us to grow in a healthy way. This includes the retention of our current students. It is incumbent that we get students the help they need when they need it.

In taking questions, faculty asked about where students should go for financial help. UWGB has put \$45K into an emergency fund to help students who are in financial trouble to stay in school. This information was not communicated to faculty because administration is “trying to figure this out as we go.” This funding was hurriedly created in response to a list of students who were in danger of dropping out due financial holds on their record.

In response to an earlier comment by the Provost (65 chairs for about 180 faculty – too many chairs or too few faculty?), faculty wanted to know if some group was looking into that. The Provost discussed this at a joint chairs meeting and that discussion will continue going forward regarding how to best use our resources. In relation to using our resources wisely, faculty wanted to know if is there a best practice for using associate lecturers (i.e., ad hocs). Also, faculty wanted to know if the plan to navigate future growth meant using more full-time lecturers. This discussion briefly veered down the path of treating lecturers (and associate lecturers) more equitably.

Finally, in response to a senator's question, the Provost provided a primer on Incentive-Based Budget (IBB) Models. Greater detail on IBB Models will be provided next semester based on Senator Sallak's request for future business earlier in the senate meeting.

7. OTHER REPORTS

- a. Academic Affairs Council Report. Their report is found on page 8 of the agenda.
- b. Graduate Academic Affairs Council Report. Their report is found on page 9 of the agenda.
- c. University Committee Report. UC Chair Loebel reiterated that the UC met with the Provost for two hours on 20 November 2019 to discuss tenured faculty evaluations. More specifically, the discussion centered on streamlining the process for merit reviews, annual reviews, post-tenure reviews, and determination of scholarship and service active faculty. The UC subsequently developed a proposal, presented it to the Provost, who then presented it to the Administrative Council. The AC seemed receptive to the proposal. The UC will bring that proposal to the senate in January. UC discussion with the Provost also included giving lecturers status that more closely resembles faculty.
- d. Faculty Rep Report. The next Faculty Rep meeting is Friday, but UWGB Faculty Representative Jon Shelton informed senate that the Regents declined to add any members to the UW President search and screen committee. The Vice Chair of the committee will come to the Faculty Reps meeting on Friday so the Reps hope to be able to provide some input at that point and get clarification on the search timeline.

A relatively new System Policy states that everybody on campus must be reviewed and categorized as "satisfactory" every year. This is problematic for faculty as that is the categorization for post-tenure review (which takes place every five years). So there is concern for what this means for faculty long term. Some universities' HR units are pushing faculty to put this policy in their Handbooks.

- e. Academic Staff Committee Report. ASC Chair Lynn Niemi mentioned that the Academic Staff held their Fall/Winter Assembly on Tuesday, December 3, 3:00-4:30 in the Christie Theatre where Staff received updates from the leadership. Lynn had the inclement weather emergency conditions and cellular phone policies emailed to all Academic Staff. The ASC will cancel their meeting scheduled for 18 December 2019 and reconvene on 15 January 2020.
- f. University Staff Committee Report. The University Staff Assembly will meet at the end of January.

- g. Student Government Association Report. SGA President Abbie Wagaman informed senate that the SGA President, Vice President, and Speaker attended the Student-wide Representative Body meeting in Madison. Agenda items included an MOU being sent to System regarding communication between System and Student Reps and a dialog with state representatives and Student Regents about the UW President search and screen committee, particularly involving a student-based open forum session so students could ask questions of candidates. On campus, SGA is trying to develop a partnership to assist off-campus students with legal advice. The

composting project continues to move forward – SGA hopes to have an RFP out by the end of January. Student organization budget hearings have nearly concluded. Over winter break SGA is hoping to draft a Student Bill of Rights. The next Senate meeting is 27 January 2020.

8. ADJOURNMENT at 4:01 p.m.

Respectfully submitted,

Steve Meyer, Secretary of the Faculty and Staff

NOMINEES FOR 2020-2021 FACULTY ELECTIVE COMMITTEES

The Committee on Committees and Nominations, the University Committee, and the Personnel Council have prepared the following slate of candidates for open 2020-2021 faculty elective committee positions. Further nominations can be made by a petition of three voting faculty members. These nominations must have consent of the nominee and must be received by the Secretary of the Faculty and Staff no later than 1 March 2020.

UNIVERSITY COMMITTEE

Seven tenured members: one from each of the four voting districts, two at-large, and one from the Additional Locations; no more than two from a single voting district. Members are elected by voting districts; at-large members who are elected by the faculty as a whole; Additional Locations member is elected by the Additional Locations faculty.

Continuing members are:

Jim Loebl, PS; Julie Wondergem, NS; Jon Shelton, at-large, SS; Heidi Sherman, AH; Mark Klemp, Additional Locations

Nominees for two tenured faculty slots (2020-23)

One from At-Large: Devin Bickner, NS and Christin DePouw, PS

One from SS: Alison Staudinger and Aaron Weinschenk

COMMITTEE OF SIX FULL PROFESSORS

Six full professors: one from each voting district plus two at-large (with no more than two from a single voting district). Members are elected by voting districts, except for the at-large members who are elected by the faculty as a whole.

Continuing members are:

Greg Aldrete, AH; Dean VonDras, SS; Berel Lutsky, at-large, AH; Gaurav Bansal, PS

Nominees for two full-professor faculty slots (2020-23)

One from At-Large: John Stoll, SS and Christine Vandenhouten, PS

One from NS: Patricia Terry and Amy Wolf

ACADEMIC AFFAIRS COUNCIL

Five tenured members: one from each of the four voting districts and one at-large member. Members are elected by voting districts, except for the at-large member who is elected by the faculty as a whole.

Continuing members are:

Michael McIntire, NS; Amulya Gurtu, PS; Woo Jeon at-large, NS

Nominees for two tenured faculty slots (2020-23)

One from AH: William Sallak and David Voelker

One from SS: Kimberley Reilly and Georjeanna Wilson-Doenges

PERSONNEL COUNCIL

Five tenured members: one from each of the four voting districts and one at-large member. Members are elected by voting districts, except for the at-large member who is elected by the faculty as a whole.

Continuing members are:

Tim Kaufman, PS; Brian Merkel, NS; Dana Atwood, at-large, SS

Nominees for two tenured faculty slots (2020-23)

One from AH: Michelle McQuade Dewhirst and Randy Meder
One from SS: Jason Cowell and Eric Morgan

GENERAL EDUCATION COUNCIL

Six tenured members: one from each of the four voting districts, plus two at-large members (with no more than two from a single voting district). Members are elected by voting districts, except for the at-large members who are elected by the faculty as a whole.

Continuing members are:

Rebecca Stone Thornberry, at-large, AH; Lisa Grubisha, NS; David Helpap, SS

Nominees for three tenured faculty slots (2020-23)

One from at-large: Jagadeep Thota, NS and Tetyana Malysheva, NS
One from PS: Mark Kiehn and Matt Raunio
One from AH (2-year replacement term, 2020-2022): Alison Gates and Mark Karau

GRADUATE ACADEMIC AFFAIRS COUNCIL

Five tenured members of the graduate faculty, one from each college housing a graduate program and one at-large, graduate faculty.

Continuing members:

Christine Vandenhouten, At-Large, CHESW; Kristin Vespia, CAHSS; Gail Trimberger, CHESW; Megan Olson Hunt, CSET

Nominees for one tenured graduate faculty slot (2020-23)

One from AECSOB: Allen Huffcutt and ????????????

COMMITTEE ON COMMITTEES AND NOMINATIONS

Six faculty: one from each voting district, one at-large, and one from the Additional Locations. Members are elected by voting districts; at-large members are elected by the faculty as a whole; Additional Location members are elected by the Additional Location faculty.

Continuing members are:

Janet Reilly, PS; Tetyana Malysheva, NS; Devin Bickner, Additional Locations; Dinesh Yadav, AH

Nominees for two faculty slots (2020-23)

One from at-large: Courtney Sherman, AH and Karen Stahlheber, NS
One from SS: Illene Cupit and Kerry Kuenzi

COMMITTEE ON RIGHTS AND RESPONSIBILITIES

Five tenured faculty: one from each voting district plus one at-large. Members are elected by voting districts, except for the at-large members who are elected by the faculty as a whole.

Continuing members are:

PS; Hye-Kyung Kim, AH; Rebecca Abler, NS; Jolanda Sallmann, PS

Nominees for two tenured faculty slots (2020-23)

One from at-large: J P Leary, AH and Brenda Tyczkowski, PS
One from SS: Illene Cupit and Christine Smith

Section 3.10 shall be amended to include new subsection 3.10(1) that appears below. Current subsections 3.10(1)-(6) will be renumbered 3.10(2)-3.10(7).

3.10 Review Procedures (Annual, Merit, Promotion, Renewal)

1. Annual Review Procedures for All Faculty

As required by UW System Administrative Policy 1254, each faculty member, regardless of rank, shall participate in a review of the faculty member's performance under the criteria required under such policy. In order to be eligible for any modification in compensation including, but not limited to, pay plan adjustments, merit based pay and market adjustments, the faculty member must have on file documented satisfactory performance through a current performance evaluation consistent with the HR-14-17-3 Compensation and Pay Plan Policy. The evaluation must be performed not less than every 12 months.

1. The Annual Review is a formative process. For faculty, goal setting, coaching and feedback; a documented performance rating scale; and a mechanism to address poor performance shall be included in the additional reviews outlined in this document and shall act as a basis for compliance with UWSA SYS 1254..
2. Should a faculty member's annual review not meet expectations, the faculty member's supervisors (the unit chair and the college dean) shall specify which resources they will provide to assist the faculty member in improving the faculty member's performance.
3. Performance evaluations and ratings are retained according to the established University of Wisconsin System Records Schedule for Human Resource and Related Records and based on the institution's policy.
4. The evaluation must include confirmation that the faculty member has completed all mandatory training required by HR-14-17-3 Compensation and Pay Plan Policy I(i)a2.

This review is distinct from any post-tenure review or merit review. In the event that the executive committee (or chair) of the faculty member's interdisciplinary unit designates the faculty as "Meets Expectations," the review process is over. If the faculty is designated as "Improvement Needed," the faculty member has the right to make a written request for reconsideration to the Dean, the Committee on Rights and Responsibilities, and the Provost, in that order. In the event that a request results in the finding that the faculty member "Meets Expectations," the designation has been overturned, and the faculty member does not need an improvement plan.

- a. **Probationary Faculty Review.** Consistent with sec. 3.05 Wis.Admin.Code, non-tenured faculty will be reviewed annually by the executive committee

or the review may be combined with a retention review in a given year. The review shall be of the faculty member's performance from the beginning of one appointment period to the beginning of the next appointment period. The results of the review shall be communicated to the faculty member by his/her chairperson within 30 days of the completion of the review.

- b. As required by UW System Administrative Policy 1254, each tenured faculty member's annual review shall be conducted by the faculty member's interdisciplinary unit executive committee. This task may be designated to the chair of the unit if all parties agree. In addition to reviewing the faculty member's performance, the purpose of this review is to be formative and should help faculty to identify the resources they need to develop scholarship, teaching, and service. The review shall include a Professional Activities Report encompassing the previous academic year. Annual faculty reviews will be submitted to the Dean no later than February 1.

Faculty Senate New Business 5b 2/26/2020

University of Wisconsin - Green Bay Twenty-four Credit Hour Teaching Load Policy for Tenured/Tenure-track Faculty effective Fall Semester 2019

4 February 2019

Faculty positions at the University of Wisconsin-Green Bay (UWGB) require teaching, scholarly or creative activity, and service. A substantial portion (but not all) of the faculty job is accounted for using the credit-hour system, with 24 credit hours being the standard faculty load. Each of UWGB's four colleges has a policy for how this load is determined and adjusted when appropriate, based upon other duties and responsibilities done in support of the mission of the institution. The purpose of this document is to provide an overarching framework for teaching workload expectations of faculty across the University.

Defining Responsibilities and Expectations

Tenure-Track Faculty - Responsibilities include a combination of teaching, scholarly and creative activity, and service to the institution (e.g., student advising) and the community, including a twenty- four credit hour workload expectation per academic year.

Faculty Expectations

Based on a 24 credit hour workload, the following represent faculty expectations:

- 1) Tenure-track faculty shall not be required to teach more than 14 credit hours in any semester. Tenure-track faculty in the probationary period will have an 18 credit hour teaching load in the first year and a 21 credit hour teaching load until promotion to associate professor. Recognizing their substantial obligations to engage in research and service, the teaching load for associate and full professors will be 21 credits.
- 2) Administrative reassignments are provided in order to lead, manage, and conduct various activities associated with certain units, programs, and special undertakings at the University. The Dean allocates these reassignments to the budgetary unit. Budgetary Chair/Executive Committee in turn allocates the reassignments. However, it is important to keep in mind that the College needs to maintain its curriculum.
- 3) The Dean may approve other teaching reassignments for activities that would exceed normal responsibilities or expectations (e.g., new program development). Recommendations for such teaching reassignments will be generated by the Chair of the budgetary unit, with input from the budgetary unit faculty, and approved by the Dean.
- 4) Guidelines for the promotion to Associate Professor with tenure are provided by each budgetary unit and include requirements for "achievement of a record of high quality in each of the categories of Teaching, Scholarship, and University and Community Service." As per the post-tenure policy, tenured faculty must meet certain expectations in the areas of teaching, scholarship, and service.

~~5) Historically, the vast majority of UW Green Bay faculty members have met expectations in the areas of scholarship and service. This document seeks to recognize this work in the context of the 24 credit workload policy. In those cases where faculty do not meet the expectations, the assignment of additional teaching responsibilities (typically the equivalent of one additional three credit course) will help address workload equity and fairness concerns. It should be noted that faculty assigned a 24 credit teaching load are not in jeopardy of losing tenure, but they are having their workload adjusted to maintain equity in overall workload, while also noting that such faculty would still be subject to the post tenure review process. This recommendation for a 24 credit teaching load would be generated by the budgetary Chair, with input from the Executive Committee, and be approved by the Dean.~~

Instructional Workload Credit

Examples of activities that normally do not carry instructional workload credit (as they are understood to be part of the usual work of a faculty member) include:

- Holding regular office hours
- Participating in recruitment efforts
- Academic advising, including advising of student organizations
- Mentoring junior faculty
- Completing peer teaching evaluations
- Providing colleague coverage
- Serving on standing committees, with a minimum expectation of serving on one university-wide committee, while also noting that faculty may be willing to serve on an elective committee but may not be elected

Examples of activities considered for workload credit include:

- Undergraduate Lecture Courses
- Graduate Lecture Courses
- Laboratory Instruction
- Writing Emphasis Courses
- Team-taught Courses
- January Interim Courses
- Travel Courses

Overloads will be reported separately from the regularly assigned workload, as additional compensation is being provided for these activities. Overload activity should not occur to the detriment of regularly required workload and responsibilities.

**REQUEST FOR AUTHORIZATION TO IMPLEMENT A
BACHELOR OF SCIENCE
IN ELECTRICAL ENGINEERING
AT UNIVERSITY OF WISCONSIN-GREEN BAY
PREPARED BY UW-GREEN BAY**

ABSTRACT

A Bachelor of Science degree in electrical engineering at UW-Green Bay would be housed in the Richard J. Resch School of Engineering in the College of Science, Engineering and Technology (CSET). The electrical engineering program would be designed to meet Accreditation Board for Engineering and Technology (ABET) accreditation, as ABET accredits college and university programs in the disciplines of applied science, computing, engineering and engineering technology. Accreditation by ABET provides confidence to employers that the program meets the quality standards that produce graduates prepared to enter the global workforce. Students completing the program would also be eligible to sit for the Principles and Practices of Engineering Examination required one to become a Professional Engineer (PE) in the United States.

Due to ABET accreditation requirements, the electrical engineering program at UW-Green Bay would follow the constructs of most undergraduate electrical engineering degrees, which include required courses on electrical circuits, electronic devices, signals and systems, and energy conversion. Elective courses can include subject areas on advanced programmable logic controllers and automation, electrical power systems, and communications. These areas of specialized expertise serve as examples of the skills that faculty and students can apply to a range of businesses in the areas of manufacturing, utility companies, research and development, and communication technologies. With the large manufacturing sector in northeastern Wisconsin, students completing the degree in electrical engineering would likely have many opportunities to participate in high impact experiences such as internships and capstone projects done collaboratively with business and industry. In an effort to maximize the economic impact of graduates from the program, businesses in the region would be actively engaged to determine the most relevant elective course offerings for the program.

PROGRAM IDENTIFICATION

Institution Name

University of Wisconsin – Green Bay

Title of Proposed Program

Electrical Engineering

Degree/Major Designation

Bachelor of Science

Mode of Delivery

Single Institution - degrees for the Electrical Engineering program will be awarded by UW-Green Bay. The program will be primarily face-to-face, with internships and capstone projects completed at surrounding businesses in Northeast Wisconsin.

Department or Functional Equivalent

Richard J. Resch School of Engineering

College, School, or Functional Equivalent

College of Science, Engineering, and Technology

Proposed Date of Implementation

Fall 2021

Projected Enrollments and Graduates by Year Five

Table 1 depicts an expected enrollment pattern for electrical engineering based on our experience with mechanical engineering, engineering technology, local demand, a decade-long pattern of demand for engineering among applying students, analysis of transfer preparation at our partner university NWTC, and other factors. In this projection, the initial enrollment of 16 new and transfer students in fall 2021 increases by 50% in years 2 and 3 followed by 10% growth in years 4 and 5 resulting in a total student enrollment of approximately 106 FTE in year 5.

The new electrical engineering program would be in addition to the existing electrical engineering technology program. The existing electrical engineering technology program at UWGB has a calculus-based curriculum (Calculus I and II are currently required), which would allow students to start the lower level engineering curriculum (mathematics, physics, and basic engineering courses like Electrical Circuits I and II, Introduction to Electronic Devices, etc.). Subsequently, students would determine if they prefer the applied and hands-on curriculum of electrical engineering technology or the more theoretical curriculum of electrical engineering. Therefore, we anticipate that there could be a flow of students in either direction when both programs are fully implemented. Given that there are different accreditation requirements for electrical engineering technology and electrical engineering, there would need to be distinct curriculum for each program at the upper level that students would need to meet to fulfill graduation requirements.

The enrollment model for the electrical engineering program provided in the budget narrative demonstrates financial viability over the 5-year implementation period. Importantly, electrical engineering technology and electrical engineering are both revenue-based programs (131 funding, as opposed to 102 funding), so having students move from one program to the other would not affect the overall revenue for the Resch School of Engineering and the management of faculty resources for upper level courses will reflect enrollment dynamics of each program.

Table 1: Five-Year Projected Student Enrollments

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|--|---------------|---------------|---------------|---------------|---------------|
| New students admitted including transfer students | 16 | 24 | 36 | 40 | 44 |
| Continuing students | 0 | 14 | 32 | 58 | 73 |
| Enrollment total | 16 | 38 | 68 | 98 | 117 |
| Graduating students | 0 | 0 | 0 | 10 | 15 |

Tuition Structure

Tuition is calculated as total student FTE (based on 12 hour load) per year. The current UW-Green Bay tuition is \$263 for resident students and \$515 for non-resident students. No tuition increase is anticipated. The cost and revenue model presented here anticipates 100% residential students. Additionally, similar to the engineering technology programs at UW-Green Bay and UW-Oshkosh and the mechanical engineering programs at UW-Green Bay and UW-Stout, we propose a \$700/semester fee for all students in the program.

DESCRIPTION OF PROGRAM

Overview of the Program

For the expected enrollment model that has been presented, 106 new FTE in electrical engineering would require the delivery of approximately 3300 SCH/Year to matriculate to graduate in 4 years (125 credits/4 years = 31.25 credits/year and 106 FTE x 31.25 credits/year = 3313 SCH). Based on the proposed curriculum for electrical engineering, this would include the following: 36 credits in general education; 32 credits in supporting courses like mathematics, science, and engineering (several of these courses would also meet general education requirements), and 57 credits in electrical engineering. Some capacity exists in general education, where class sizes are also significantly larger, so the additional faculty included in this proposal would be hired in electrical engineering and supporting areas in the sciences like mathematics and physics. Given the total of 89 credits in supporting courses and electrical engineering, and typical faculty teaching loads, approximately six new faculty would need to be hired to meet program needs at the projected 5-year enrollment target. It should be noted that credit hours and contact hours are not equal due to the prevalence of laboratory based courses in the electrical engineering curriculum where the credit hours are lower than the contact hours. Under this scenario, there would be a need for approximately 144 new faculty contact hours by year 5, which accounts for the need for multiple sections of some courses. This also accounts for instructional efficiencies obtained through larger lecture sections in the electrical engineering courses, although laboratory sections would still be capped at 24 students. These new faculty hires in electrical engineering would be done at a frequency of one/year in year 2 through year 5 of the program, with additional faculty hires mathematics and physics hired in year 3 and year 5. This corresponds to the credit hours listed in the table (increase of 24 credit hours/year for each new faculty member).

Student Learning and Program Outcomes

In addition to the UW-Green Bay Institutional Learning Outcomes that were adopted in 2017 (<https://www.uwgb.edu/provost/institutional-learning-outcomes/>), the curricular learning outcomes will be closely related to the ABET program criteria specific to Electrical Engineering, which states (<https://www.abet.org/wp-content/uploads/2019/12/E001-20-21-EAC-Criteria-Mark-Up-11-24-19-Updated.pdf>):

“The curriculum must include probability and statistics, including applications appropriate to the program name; mathematics through differential and integral calculus; sciences (defined as biological, chemical, or physical science); and engineering topics (including computing science) necessary to analyze and design complex electrical and electronic devices, software, and systems containing hardware and software components.

The curriculum for programs containing the modifier “electrical,” “electronic(s),” “communication(s),” or “telecommunication(s)” in the title must include advanced mathematics, such as differential equations, linear algebra, complex variables, and discrete mathematics.”

Additional employment and career related learning outcomes would be as follows:

1. Graduates in electrical engineering will secure and maintain employment in a position appropriate for education and training that they received.
2. Graduates will apply their knowledge and expertise in electrical engineering and related disciplines to the design, development and implementation of electrical systems.
3. Graduates will exhibit a desire for life-long learning through higher education, training, membership in professional societies, and other activities appropriate for their long-term career development.
4. Graduates will demonstrate a high level of communication skills, critical thinking, responsible and ethical behavior, teamwork, and appreciation for diversity and leadership.

Program Requirements and Curriculum

| BSE Major in Electrical Engineering | | |
|--|---|--|
| | General Ed | 36 credits |
| | Math | 17 credits |
| | Science | 15 credits |
| | Engineering | 9 credits |
| | Electrical Engineering | 48 credits |
| | Total | 125 credits |
| | Math | Credits |
| MATH 202 | Calculus I | 4 |
| MATH 203 | Calculus II | 4 |
| MATH 209 | Multivariable Calculus | 4 |
| MATH 260 | Introduction to Statistics | 4 |
| MATH 305 | Differential Equations | 4 |
| | Total credits | 20 (including 3 contributing to Gen Ed) |
| | Science | Credits |
| ET 206 | Chemistry for Engineers * | 5 |
| PHY 201 | Principles of Physics I * | 5 |
| PHY 202 | Principles of Physics II * | 5 |
| | Total credits | 15 |
| | Engineering | Credits |
| ENGR 142 | Introduction to C/C++ Programming | 3 |
| ENGR xxx | CAD Drawing | 3 |
| ENGR xxx | Engineering Project Management | 3 |
| | Total credits | 9 |
| | Electrical Engineering | Credits |
| ENGR xxx | Intro to Electrical Engineering (First Year Seminar)* | 3 |
| ENGR xxx | Electrical Circuits 1 | 3 |
| ENGR xxx | Electrical Circuits 1 Lab | 1 |
| ENGR xxx | Electrical Circuits 2 | 3 |
| ENGR xxx | Electrical Circuits 2 Lab | 1 |

| | | |
|----------|--|--|
| ENGR xxx | Introduction to Electronic Devices | 3 |
| ENGR xxx | Introduction to Electronic Devices Lab | 1 |
| ENGR xxx | Energy Conversion | 3 |
| ENGR xxx | Energy Conversion Lab | 1 |
| ENGR xxx | Digital Logic Design | 3 |
| ENGR xxx | Digital Logic Design Lab | 1 |
| ENGR xxx | Microcontroller and PLCs | 3 |
| ENGR xxx | Microcontroller and PLCs Lab | 1 |
| ENGR xxx | Electrical Codes, Safety, and Standards | 2 |
| ENGR xxx | Signals and Systems | 3 |
| ENGR xxx | Signals and Systems Lab | 1 |
| ENGR xxx | Electromagnetic Fields | 3 |
| ENGR xxx | Senior Design | 3 |
| ENGR xxx | EE Elective 1 | 3 |
| ENGR xxx | EE Elective 2 | 3 |
| ENGR xxx | EE Elective 3 | 3 |
| ENGR xxx | EE Elective 4 | 3 |
| | | |
| | Total Credits | 51 (including 3 contributing to Gen Ed) |
| | Electives | Credits |
| ENGR xxx | Advanced PLCs* | 3 |
| ENGR xxx | Supervisory Control and Data Acquisition (SCADA) * | 3 |
| ENGR xxx | Power Electronics | 3 |
| ENGR xxx | Electrical Power Transmission and Distribution Systems | 3 |
| ENGR xxx | Electrical Power System Analysis | 3 |
| ENGR xxx | Control Systems | 3 |
| ENGR xxx | Communications Systems | 3 |
| ENGR xxx | Wireless Communications Systems and Networks | 3 |
| ENGR xxx | Current Topics in EE | 3 |

Courses titles, in the above table, that are followed by * require a laboratory component. Costs associated with new laboratories and equipment is delineated in the accompanying Budget Narrative.

Assessment of Outcomes and Objectives

The chair of the program, in collaboration with the program faculty, will have responsibility for the assessment of student learning. As documented in the ABET accreditation for general program outcomes, the engineering program has documented student outcomes that prepare graduates to attain the program’s educational objectives. The curriculum committee of the program will set specific learning goals for each course that are designed to address identified core competencies related to ABET. The assessment plan will outline how each of the ABET competencies are assessed throughout the program. Direct and indirect assessments of program learning outcomes will take place throughout the students’ enrollment in the program. A more detailed assessment plan will be created as the courses are implemented during the next two years that is aligned to the ABET assessment matrix. The assessment plan will be evaluated for the clarity of the learning outcomes, the appropriate alignment of assessment

tools and the learning outcomes, the process used to collect, analyze and interpret data and the use of data to inform program changes and continuous improvement decisions.

Diversity

The College of Science, Engineering, and Technology (CSET) currently has a student population that includes 19.7% (233/1185) underrepresented students, which is consistent with the entire university population that is also 19.27% underrepresented; however, this is much less than our goal to better mirror the current Green Bay Public School demographics that has a minority-majority student population. It should also be noted that CSET has a student population that is 49.8% (590/1185) female and that the vast majority of the students in CSET (84.1%) are full-time students. Given the changing demographics of northeastern Wisconsin, attracting a diverse student population is a critical goal for this program, with long-standing efforts like Phuture Phoenix already providing a solid foundation for student recruitment. Since the formation of CSET in July of 2016, several other initiatives have also been implemented to enhance student recruitment and diversity, which should be easily transferrable to the new electrical engineering program. This includes a science open house held each fall, as well as structured visits by students from high schools in the region. Green Bay West would be one example of a high school with a high level of diversity that has taken advantage of these opportunities, particularly for students in their International Baccalaureate (IB) program that has now been in place for several years, as well as a Serious About Science program that has been implemented for female students interested in STEM. A Diversity Committee has also recently been established in CSET.

Collaborative Nature of the Program

The program would seek to collaborate with the electrical engineering programs in UW System, as this partnerships would leverage investments in regional engineering training, allow student access to some courses in an on-line format, and provide some flexibility, cost reduction and risk mitigation during the early years of the new program.

Projected Time to Degree

Students who apply to the Electrical Engineering program and have adequate preparation in mathematics will be able to complete the degree in four years, which could also be accelerated by taking summer and J-term courses.

Program Review

UW-Green Bay's Academic Affairs Council (AAC) is charged with oversight of all undergraduate programs on campus, including review and approval of all coursework and academic program development at the undergraduate level. In compliance with UW-Green Bay's Academic Program Review and Student Learning Outcome Policy and Procedure, the BS in Electrical Engineering program will be reviewed on a five-year cycle by the department, the Dean of the College of Science, Engineering, and Technology, the AAC, and the Provost. The AAC forwards all recommendations and decisions to the Faculty Senate, and provides advice regarding issues of undergraduate-level education policy and implementation. In addition, program chairs (or designees) are responsible for coordinating an annual student learning outcome assessment and submitting a report for review by the Academic Program Assessment Subcommittee of the University Accreditation and Assessment Committee.

Accreditation

The program will seek accreditation by the Accreditation Board for Engineering and Technology (ABET). Accreditation by ABET requires that at least one class has graduated from the program before

accreditation may be pursued. We anticipate pursuing accreditation approximately two years after the program implementation date.

JUSTIFICATION

Rationale and Relation to Mission

This proposal for a new electrical engineering degree at UWGB is part of an intensive and coordinated transformation of the University to meet the needs of the third largest urban area in the State of Wisconsin, as well as the three communities associated with the branch campuses. The new Urban Serving Vision of the University is designed to: (a) significantly increase access to post-secondary education in an area with one of the lowest degree attainment rates in the country, (b) reshape academic programs to meet the current and future workforce needs in the region particularly in the areas of technology, manufacturing, health care, and global business; and (c) become a major regional thought leader in meeting social, economic, and educational challenges in the region. To operationalize this new imperative, the Resch School of Engineering was founded in 2018 with a significant endowment from regional industry and manufacturing companies. It offers programs in Mechanical, Electrical, and Environmental Engineering Technology and a program in Mechanical Engineering. This new school is part of the College of Science, Engineering, and Technology, which was originally launched on July 1, 2016 as the College of Science and Technology.

The new institutional focus of UWGB complements and is being closely coordinated with intensive efforts in the Green Bay region to significantly shift the historical mill culture economy to an innovation economy focused in advanced manufacturing, health care, and professional sports, with a more nurturing entrepreneurial ecosystem. UWGB has taken a leadership role in the strategic planning that was conducted by the Greater Green Bay Chamber with assistance from Tip Strategies of Austin, Texas. That process has clearly demonstrated the need for engineering degree programs at UWGB.

Northeast Wisconsin is one of two places in the state where the population of 25 to 55 year olds is expected to increase in the next ten years (see need section below). Despite this trend, growth in that age group must be increased via recruitment if the region is to have continued opportunities for economic expansion. It is well recognized in the Green Bay region that to attract and retain individuals of this age category will require the development of more vibrant economic and social opportunities. This is the primary goal of the Green Bay Packers Titletown Development now under way west of Lambeau Field, a project in which UWGB is involved. There is a clear recognition that this will require UWGB to quickly develop and deploy more relevant programs in science, math, business, and engineering and, importantly, it must position itself to be a value-added partner in nurturing a sustainable entrepreneurship and innovation culture in the region. The long-term prospects of some of the most important local business partners, including the Green Bay Packers, depend on this institutional transformation. Engineering programs are key to this transformation.

Engineering is not new to UWGB. Historically, UWGB has offered pre-professional programs in engineering, with students transferring to other regional institutions offering Bachelor of Science degrees in engineering, including: UW-Madison, UW-Milwaukee, UW-Platteville, the Milwaukee School of Engineering, Marquette University, and Michigan Technological University. UWGB also has a formalized cooperative program (the NEW Program) providing for direct, upper-level transfer into the College of Engineering and Applied Sciences at UW-Milwaukee. The two institutions also collaborate on a 3+2 dual degree program in which students can earn two bachelor's degrees over five years of study: a Bachelor's of Science in Environmental Sciences from UWGB and a Bachelor's of Science in

Civil/Environmental Engineering from UW-Milwaukee. The current proposal is expected to enhance general interest in these programs and provide other avenues for inter-institutional collaboration.

In spring 2015, UWGB established three new programs in Electrical, Environmental, and Mechanical Engineering Technology, which will be entering their fifth full year during 2019-20. Most recently, a Mechanical Engineering program was launched in fall 2018. Enrollments in these programs are at or above expectation, and job placement for graduates in Engineering Technology are nearly 100%. The Engineering Technology Programs will apply for ABET accreditation in 2019. To support these programs and future expansion, UW-Green Bay renovated two spaces on campus in summer 2018 to create new lower level and upper level electronics labs. More significantly, a new STEM innovation Center on campus is under construction and will house labs for Mechanical Engineering, student research, maker spaces, and faculty offices for Mechanical Engineering.

Institutional Program Array

UW-Green Bay currently provides pre-engineering courses that transfer to other accredited engineering schools within UW System and other public and private universities in the region. UW-Green Bay also has as BS in Mechanical Engineering program that started in Fall 2018 and three Engineering Technology programs in electrical, mechanical, and environmental that started in Fall 2015. These programs have demonstrated strong enrollment growth since their inception and have been providing a strong source of talent for the workforce in northeastern Wisconsin. In addition to general education and Electrical Engineering courses, other coursework will be drawn from chemistry, mathematics, and physics. This program aims to retain students from northeastern Wisconsin and furthers program development in the Resch School of Engineering, which also includes computer science and mathematics and statistics.

Other Programs in the University of Wisconsin System

There are several other UW System institutions with Electrical Engineering programs, with the closest one being the UW-Platteville-UW Fox Valley-UW Oshkosh partnership.

Need as Suggested by Current Student Demand

During review of the Notice of Intent to Plan for mechanical engineering, the question was raised whether a new mechanical engineering program at UW-Green Bay would diminish the very strong enrollments in the three currently existing engineering technology programs already there (mechanical, electrical and environmental). At that time, two approaches were used to examine that possibility: (1) the graduation rates of twenty-three universities outside the UW System that established engineering programs where previously only engineering technology programs existed were examined¹ and (2) a survey of current UW-Green Bay mechanical engineering technology students was conducted to determine the likelihood those student would have chosen the mechanical engineering degree instead of one of the three engineering technology degrees had the mechanical engineering degree been available at the time of their enrollment.

Twenty-three universities with engineering technology degrees in 2004-2005 introduced engineering degrees after 2004-2005. Between 2004-2005 and 2014-2016 the number of engineering technology

¹ Vermont Technical College, University of Maryland Eastern Shore, SUNY Polytechnic Institute, Western Illinois University, Purdue University-North Central Campus, Ferris State University, Missouri State University, Bowling Green State University, The University of West Florida, Georgia Southern University, Morehead State University, University of Southern Mississippi, East Carolina University, Western Carolina University, Middle Tennessee State University, Norfolk State University, Marshall University, Texas A&M University – Corpus Christi, Texas Southern University, Central Washington University, Eastern Washington University, Western Washington University

graduates and the number of engineering graduates increased on average across the universities. In 2004-2005 (prior to the introduction of engineering), the average percent of graduates with engineering technology degrees was 3.8%. In 2014-2015, the average percent of graduates with engineering technology degrees was 3.0% and the average number of engineering degrees was 1.6%. These results suggest enrollments in engineering technology remained stable and the overall percent of engineering graduates increased because of the new engineering majors.

From the fall of 2018 to the fall of 2019, enrollments in mechanical engineering and the three engineering technology programs increased from 154 declared majors to 226 (47% increase). When combined, enrollments in mechanical engineering and mechanical engineering technology increased from 85 to 149 (75% increase), with some decrease in mechanical engineering technology, which was consistent with the student survey data. However, enrollments in electrical engineering technology and environmental engineering technology also both increased during this time period by 4% and 27%, respectively. Similar trends have also been seen in enrollment data for the spring semester in 2020. Therefore, it is expected that, after an initial redistribution of students, engineering and engineering technology programs will continue to experience strong growth.

Need as Suggested by Market Demand

As demonstrated by the NCHEMS report, the need for the next generation of engineers is not being met by the current schools and programs in the UW System. That report indicates the need for electrical engineers in Wisconsin and in the New North in particular, where electrical engineers are imported from other states.² This is also true of Mechanical and Civil Engineering, where Wisconsin lags behind national and regional educational production trends. The New North region in particular demonstrates need for several types of engineers, especially electrical engineers, while lacking the educational programs to develop them locally. The Greater Green Bay Chamber Economic Development Strategic Plan also emphasized the need for more engineers in the region and called for the expansion of engineering education programs, specifically at UW Green Bay.³ National projections for growth in electrical engineering also remain strong at 8.6% through 2026.⁴ In Wisconsin, growth in electrical engineering is projected to be 24%.⁵

These reports demonstrate a need for local access to engineering education. Many students who may wish to pursue a career in electrical engineering may not have the wherewithal to leave the area to pursue that education, being place-bound to Green Bay or Brown County due to financial limitations, family obligations, or the need to maintain local employment while pursuing their educational goals.

- The region is the leading manufacturing area in Wisconsin and the third largest business sector in Wisconsin. Among regional companies are some of the largest in the state many with multinational operations. There are 90 engineering companies in Brown and Door Counties. The leaders of this large and important sector fully support the expansion of engineering at UWGB and have pledged and provided internships for students, helped recruit new students

² National Center for Higher Education Management Systems (NCHEMS), "Baccalaureate and Master's Engineering Degree Supply and Demand in Wisconsin" submitted to the University of Wisconsin System (2015).

³ Greater Green Bay Chamber, "Economic Development Strategic Plan" (May 2017), <https://www.greatergbc.org/media/3045/strategic-plan-booklet-web.pdf>.

⁴ Bureau of Labor Statistics, Employment Projections, <https://www.bls.gov/emp/tables/occupational-projections-and-characteristics.htm>.

⁵ U.S. Department of Labor, Career Onestop, Projected Employment for Electrical Engineers in Wisconsin, <https://www.onetonline.org/link/wages/17-2071.00?e=1&st=WI&g=Go>.

and hired graduates from the programs. The boards of the New North and the NEW Manufacturing Alliance are also fully supportive and eager to assist in the establishment and expansion of engineering programs at UW Green Bay, which has been demonstrated through significant financial contributions to date.

- Local businesses, particularly in manufacturing, and local business organizations (Chamber, New North, Manufacturing Alliance, etc.) strongly support the expansion of engineering programs at UWGB. This support extends beyond simple words. All of the companies and organizations we have worked with have committed to fund scholarships, develop paid internships, and provide space, equipment, or engineering expertise or help recruit students to the program.
- Companies with strong needs for electrical engineers such as Faith Technologies, Georgia-Pacific, Paper Converting Machine Company, etc., strongly advocated for UW Green to renovate space to provide more opportunities for electrical engineering technology and electrical engineering programs.
- Through its new vision and recently approved mission statement, UWGB is committed to becoming an access-oriented university in a dynamic and diverse urban area, which now goes from Marinette in the north to Sheboygan in the south. To accomplish this, the University has reshaped its operations to focus both on recruiting and supporting under-represented groups in local schools. The results of these efforts speak for themselves – the freshman cohort diversity continues to increase exponentially, the University is attracting more first generation college students, many of whom are from disadvantaged socioeconomic backgrounds. For example, this year’s freshman class is 24% non-White compared to last year’s 13%, and 53% is first generation college-goer compared to last year’s 49%. Approximately 34% are Pell-grant eligible students. For a high percentage of our students, attending an institution of higher education is not a typical choice, and often comes with a need to balance complex work-life circumstances. The place-bound circumstances of our under-represented minority students, coupled with the strong local need for electrical engineers, supports UW-Green Bay’s desire to serve its local community with a new Electrical Engineering bachelor degree option. In fact, the University’s student body is very local – 20% of the fall 2019 freshman class being from Brown County alone, and 93% of them being Wisconsin residents.
- Unlike nearly every other county in Wisconsin, the Brown County population is growing and getting younger. The Wisconsin Department of Administration (DOA) predicts Brown County will grow by over 25% between 2010 and 2040 (average state growth is 14%). The percentage of 25 to 55 year-olds is projected to grow only 2% statewide. This cohort is expected to grow by more than 10% in only Kenosha and Brown counties.
- Currently, the population of the City of Green Bay includes over 22% people of underrepresented minority background. The poverty rate in the city is 17%.⁶ The Green Bay Area Public Schools is a minority-majority school district, with 54% of its student body being of non-White.⁷ The proportion of both Hispanic and non-white, non-Hispanic populations is increasing and the White, non-Hispanic populations are decreasing. These students are also

⁶ United States Census Bureau, Quick Facts, Green Bay, Wisconsin, <https://www.census.gov/quickfacts/fact/table/greenbaycitywisconsin/PST045218>.

⁷ Green Bay Area Public Schools, Our District, https://www.gbaps.org/our_district.

economically disadvantaged and thus, many are place-bound and have no access to engineering degrees.

- Northeast Wisconsin accounts for 12% of the Wisconsin population but has one of the lowest degree attainment rates in the state. With respect to STEM degrees, UWGB delivers only 2% of the state's non-health STEM degrees and 3% of the state's health-related STEM degrees. This deficiency in meeting regional needs is a direct result of a mismatch between the program array at UWGB, a legacy array not revised in decades, and the workforce and talent needs of the region.
- At the beginning of 2016, NWTC had 313 students enrolled in its engineering technology associates degree programs, 48% of whom had completed more than 31 credits. This pipeline of engineering-ready students portends a much higher annual transfer population than would be expected.
- NWTC is a full partner with UWGB in engineering technology and mechanical engineering and has committed to continuing this partnership with new engineering programs. UWGB faculty and staff are collaborating with NWTC personnel as they build and equip new engineering spaces. These spaces will be available for UWGB programs. Close collaboration with NWTC has led to the development of an electrical engineering technology program that will be implemented at UW Green Bay's Marinette campus.

The program will offer local students a more affordable way to obtain an engineering degree. In concordance with the Green Bay area's increasing diversity, and clearly indicating that the Electrical Engineering profession is of interest to local students, is the fact that our Electrical Engineering Technology program enrollments are 27% non-White compared to the 18% minority of our overall student body. Another support for local need for this degree program comes from the 2016 IPEDS Fall Enrollment Report, indicating that Wisconsin students make up roughly 11% of the freshman class at Michigan Tech University. If that percentage is reflected in the number of electrical engineering majors at Michigan Tech we would expect 39 of the 351 Michigan Tech EE majors to be from Wisconsin.

AMENDED TABLE 1

**University of Wisconsin - Green Bay
Cost and Revenue Projections For Proposed BS in Electrical Engineering**

| | | Items | Projections | | | | |
|------------|------------------------------|--|-------------|-----------|-----------|-------------|-----------|
| | | | 2021 | 2022 | 2023 | 2024 | 2025 |
| | | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| I | a | Enrollment (New Student) Headcount | 16 | 24 | 36 | 40 | 44 |
| | b | Enrollment (Continuing Student) Headcount | 0 | 14 | 32 | 58 | 73 |
| | c | Enrollment (New Student) FTE | 14 | 22 | 32 | 36 | 40 |
| | d | Enrollment (Continuing Student) FTE | 0 | 12 | 29 | 52 | 66 |
| | e | TOTAL FTE | 14 | 34 | 61 | 88 | 106 |
| II | a | Total New Credit Hours (# new sections x credits per section) | 0 | 24 | 48 | 24 | 48 |
| | b | Existing Credit Hours | 30 | 30 | 54 | 102 | 126 |
| III | a | FTE of New Faculty/Instructional Staff | 0 | 1 | 2 | 1 | 2 |
| | b | FTE of Current Fac/IAS | 3 | 3 | 4 | 6 | 7 |
| | c | FTE of New Admin Staff | 0 | 0 | 0 | 0 | 0 |
| | d | FTE Current Admin Staff | 2 | 2 | 2 | 2 | 2 |
| IV | New Revenues | | | | | | |
| | a | <i>From Tuition (new credit hours x FTE)</i> | \$88,368 | \$214,608 | \$385,032 | \$555,456 | \$669,072 |
| | b | <i>From Fees</i> | \$19,600 | \$47,600 | \$85,400 | \$123,200 | \$148,400 |
| | c | <i>Program Revenue - Other Community Investment</i> | \$350,000 | \$350,000 | \$200,000 | \$150,000 | \$150,000 |
| | d | <i>Reallocation</i> | \$50,000 | \$50,000 | \$50,000 | \$50,000 | \$50,000 |
| e | Total New Revenue | \$507,968 | \$662,208 | \$720,432 | \$878,656 | \$1,017,472 | |
| V | New Expenses | | | | | | |
| | Salaries plus Fringes | | | | | | |
| | a | <i>Faculty/Instructional Staff</i> | \$0 | \$150,000 | \$420,000 | \$570,000 | \$840,000 |
| | b | <i>Other Staff</i> | \$0 | \$0 | \$0 | \$0 | \$0 |
| | Other Expenses | | | | | | |
| | c | <i>Facilities</i> | \$10,000 | \$10,000 | \$10,000 | \$10,000 | \$10,000 |
| | d | <i>Equipment</i> | \$300,000 | \$300,000 | \$250,000 | \$200,000 | \$100,000 |
| e | <i>Other:</i> | \$5,000 | \$15,000 | \$25,000 | \$35,000 | \$45,000 | |
| | Total Expenses | \$315,000 | \$475,000 | \$705,000 | \$815,000 | \$995,000 | |
| VI | a | Net Revenue | \$192,968 | \$187,208 | \$15,432 | \$63,656 | \$22,472 |

Narrative: Explanation of the Numbers and Other Ongoing Commitments that will Benefit the Proposed Program

Attached

a - Number of students enrolled

b - To be based on 12 credits at the undergraduate level and 7 credits at the graduate level

c - Number of faculty/instructional staff providing significant teaching and advising for the program

d - Number of other staff providing significant services for the program

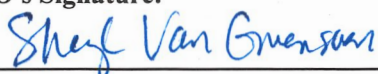
Provost's Signature:



Date:

2/12/2020

CBO's Signature:



Date:

2/13/2020

BUDGET NARRATIVE UW – GREEN BAY B.S. IN ELECTRICAL ENGINEERING

One table accompanies this narrative: (1) Table 1- *Cost & Revenue Projections for Newly Proposed UW-Green Bay Program in Electrical Engineering*.

The Green Bay –UWGB Partnership

UW-Green Bay has delivered engineering courses for over fifty years and the UW-Green Bay proposal for Electrical Engineering is a community partnership. With the support of the community, the Richard J. Resch School of Engineering was established on July 1, 2018, and currently hosts mechanical engineering and three engineering technology programs (electrical, mechanical, and environmental) whose enrollments have expanded rapidly. A strong foundation for engineering (facilities, faculty, preparatory curriculum, support services) exists at the University. Thus, UW-Green Bay is not starting from scratch in developing electrical engineering. Nevertheless, there are startup costs (mostly new equipment) required for the electrical engineering program. Because of the urgency of the need for engineering programs at UW-Green Bay (for both talent development and economic transformation), the Green Bay, Brown County and New North communities joined in a partnership with the University to secure the mechanical engineering program. Community partners also pledged to fund a significant portion of the startup costs for the program through financial, material and other types of support (e.g., internships) and to secure the future of the program through endowment support. It is a testament to the very strong desire of the Green Bay community to have engineering at UW-Green Bay that these pledges were made prior to approval of the Resch School of Engineering and the mechanical engineering program. Based on similarly strong interest in electrical engineering, it is anticipated that community support will also be provided for this program.

In addition, as part of the plan for mechanical engineering program, the Brown Count STEM Innovation Center was successfully designed, constructed, and became operational on September 4, 2019. The facility was funded in part from the state budget, in part from Brown County, and in part from private sources. However, this once again demonstrates the strength of the community partnership and the strong desire for engineering programs in northeastern Wisconsin. This facility now houses the UWGB mechanical engineering program along with units of the UW Extension, the Einstein Project, and other community partners.

The System *Cost & Revenue Projections* template does not anticipate community partnerships such as this. Therefore, we have added “Program Revenue – Other Community Investment” to the template.

Enrollment Implications on Existing UW-Green Bay Engineering Programs

During review of the Notice of Intent to Plan for mechanical engineering, the question was raised whether a new mechanical engineering program at UW-Green Bay would diminish the very strong enrollments in the three currently existing engineering technology programs already there (mechanical, electrical and environmental). At that time, two approaches were used to examine

that possibility: (1) the graduation rates of twenty-three universities outside the UW System that established engineering programs where previously only engineering technology programs existed were examined¹ and (2) a survey of current UW-Green Bay mechanical engineering technology students was conducted to determine the likelihood those student would have chosen the mechanical engineering degree instead of one of the three engineering technology degrees had the mechanical engineering degree been available at the time of their enrollment.

Twenty-three universities with engineering technology degrees in 2004-2005 introduced engineering degrees after 2004-2005. Between 2004-2005 and 2014-2016 the number of engineering technology graduates and the number of engineering graduates increased on average across the universities. In 2004-2005 (prior to the introduction of engineering), the average percent of graduates with engineering technology degrees was 3.8%. In 2014-2015, the average percent of graduates with engineering technology degrees was 3.0% and the average number of engineering degrees was 1.6%. These results suggest enrollments in engineering technology remained stable and the overall percent of engineering graduates increased because of the new engineering majors.

From the fall of 2018 to the fall of 2019, enrollments in mechanical engineering and the three engineering technology programs increased from 154 declared majors to 226 (47% increase). When combined, enrollments in mechanical engineering and mechanical engineering technology increased from 85 to 149 (75% increase), with some decrease in mechanical engineering technology, which was consistent with the student survey data. However, enrollments in electrical engineering technology and environmental engineering technology also both increased during this time period by 4% and 27%, respectively. Similar trends have also been seen in enrollment data for the spring semester in 2020. Therefore, it is expected that, after an initial redistribution of students, engineering and engineering technology programs will continue to experience strong growth.

Facilities

The State of Wisconsin has approved an appropriation of \$5.7 million for the renovation of a portion of the Instructional Services building at UW-Green Bay. This renovation will provide approximately 12,000 sq. ft. of instructional space for electrical engineering technology, electrical engineering, physics, and communications, which is part of the College of Arts, Humanities and Social Sciences. It should be noted that two laboratories for electrical engineering technology were previously constructed in this space on a temporary basis, with the renovation providing additional space to accommodate growth in engineering and engineering technology. It is anticipated that this project will be initiated in spring 2021 and be completed by January 2022, which coincide well with the implementation of the proposed Electrical Engineering program.

¹ Vermont Technical College, University of Maryland Eastern Shore, SUNY Polytechnic Institute, Western Illinois University, Purdue University-North Central Campus, Ferris State University, Missouri State University, Bowling Green State University, The University of West Florida, Georgia Southern University, Morehead State University, University of Southern Mississippi, East Carolina University, Western Carolina University, Middle Tennessee State University, Norfolk State University, Marshall University, Texas A&M University – Corpus Christi, Texas Southern University, Central Washington University, Eastern Washington University, Western Washington University

Cost & Revenue Projections – Expected Enrollment (Table 1)

Enrollment (Table 1; I.a-f)

Table 1 depicts an expected enrollment pattern for electrical engineering based on our experience with mechanical engineering, engineering technology, local demand, a decade-long pattern of demand for engineering among applying students, analysis of transfer preparation at our partner university NWTC, and other factors. In this projection, the initial enrollment of 16 new and transfer students in fall 2021 increases by 50% in years 2 and 3 followed by 10% growth in years 4 and 5 resulting in a total student enrollment of approximately 106 FTE in year 5.

The new electrical engineering program would be in addition to the existing electrical engineering technology program. The existing electrical engineering technology program at UWGB has a calculus-based curriculum (Calculus I and II are currently required), which would allow students to start the lower level engineering curriculum (mathematics, physics, and basic engineering courses like Electrical Circuits I and II, Introduction to Electronic Devices, etc.). Subsequently, students would determine if they prefer the applied and hands-on curriculum of electrical engineering technology or the more theoretical curriculum of electrical engineering. Therefore, we anticipate that there could be a flow of students in either direction when both programs are fully implemented. Given that there are different accreditation requirements for electrical engineering technology and electrical engineering, there would need to be distinct curriculum for each program at the upper level that students would need to meet to fulfill graduation requirements.

The enrollment model for the electrical engineering program provided in the budget narrative demonstrates financial viability over the 5-year implementation period. Importantly, electrical engineering technology and electrical engineering are both revenue-based programs (131 funding, as opposed to 102 funding), so having students move from one program to the other would not affect the overall revenue for the Resch School of Engineering and the management of faculty resources for upper level courses will reflect enrollment dynamics of each program.

Credit Hours

The pattern of new credit hour introduction is shown in **Table 1; II.a-b**. For the expected enrollment model that has been presented, 106 new FTE in electrical engineering would require the delivery of approximately 3300 SCH/Year to matriculate to graduate in 4 years ($125 \text{ credits}/4 \text{ years} = 31.25 \text{ credits/year}$ and $106 \text{ FTE} \times 31.25 \text{ credits/year} = 3313 \text{ SCH}$). Based on the proposed curriculum for electrical engineering, this would include the following: 36 credits in general education; 32 credits in supporting courses like mathematics, science, and engineering (several of these courses would also meet general education requirements), and 57 credits in electrical engineering. Some capacity exists in general education, where class sizes are also significantly larger, so the additional faculty included in this proposal would be hired in electrical engineering and supporting areas in the sciences like mathematics and physics. Given the total of 89 credits in supporting courses and electrical engineering, and typical faculty teaching loads, approximately six new faculty would need to be hired to meet program needs at the projected 5-year enrollment target. It should be noted that credit hours and contact hours are not equal due to the prevalence

of laboratory based courses in the electrical engineering curriculum where the credit hours are lower than the contact hours. Under this scenario, there would be a need for approximately 144 new faculty contact hours by year 5, which accounts for the need for multiple sections of some courses. This also accounts for instructional efficiencies obtained through larger lecture sections in the electrical engineering courses, although laboratory sections would still be capped at 24 students. These new faculty hires in electrical engineering would be done at a frequency of one/year in year 2 through year 5 of the program, with additional faculty hires mathematics and physics hired in year 3 and year 5. This corresponds to the credit hours listed in the table (increase of 24 credit hours/year for each new faculty member).

FTE

UW-Green Bay currently offers most of the foundation courses for electrical engineering and has two tenure-track electrical engineers and a lecturer with a MS in electrical engineering on staff that are currently assigned to the electrical engineering technology program. Based on contact hour analysis for the electrical engineering degree, to serve the students will require the addition of four electrical engineers and two additional STEM related faculty. The plan is to recruit electrical engineering faculty in years 2–5 and non-engineering STEM related faculty in years 3 and 5 (**Table 1; III.a-d**). No new administrative support will be needed for this program.

New Revenue

Tuition is calculated as total student FTE (based on 12 hour load) per year (**Table 1; IV.a**). The current UW-Green Bay tuition is \$263 for resident students and \$515 for non-resident students. No tuition increase is anticipated. The cost and revenue model presented here anticipates 100% residential students. Additionally, similar to the engineering technology programs at UW-Green Bay and UW-Oshkosh and the mechanical engineering programs at UW-Green Bay and UW-Stout, we propose a \$700/semester fee for all students in the program (**Table 1; IV.b**).

Pledged community investment to initiate the program is shown in line **IV.c** in the table. Based on UW-Green Bay Foundation experience in Green Bay (most recently for mechanical engineering), we expect the default rate on pledges to be very low. However, to be conservative, Table 1 presents the following scenario:

- (1) We present a total amount in gifts and pledges roughly equal to 95% of the total received reflecting a 5% pledge default rate. The default rate is consistent with the current capital campaign for mechanical engineering.

The university reallocation (**Table 1; IV.d**) is primarily related to adjusting capacity in the general education program to accommodate the growth in engineering students. Currently, capacity exists in the general education program to accommodate engineering student growth in the early years of this program. Thus, this projection is higher than expected for the early years of this program.

New Expenses

Faculty and instructional staff expenses are accumulated across the five years of the projection (**Table 1; V.a**) (different than the template instructions). Salary and fringe benefits are set at \$150,000 for engineering faculty and \$120,000 for non-engineering STEM faculty. These levels greatly exceed the salary levels for recently recruited engineers and non-engineering STEM faculty at UW-Green Bay, so this is a conservative estimate.

Electrical engineering faculty that are currently on staff, as well as the new faculty and instructional staff hired for the electrical engineering program, would teach courses in both electrical engineering technology and electrical engineering. This would allow for greater diversity of faculty and staff expertise, which would be particularly important for teaching upper level courses required for program accreditation or aligned with regional electrical engineering needs. The program staffing presented in the proposal indicate that new electrical engineers will be added on an incremental basis as enrollments increase during the first five years of program implementation. In the model, no new faculty are added in the first year, which accounts for existing instructional capacity and the potential to increase section sizes in some lower level courses in general education, mathematics, physics and basic engineering. Existing electrical engineering faculty would also be able to teach a limited number of upper level electives in the first year of the program. Therefore, the numbers for current faculty included in the model do not all come from existing engineering staff. Also, as noted under enrollment dynamics, both electrical engineering technology and electrical engineering are revenue based programs, so any growth beyond the numbers provided in the enrollment model would be supported by additional program revenue.

The UW-Green Bay electrical engineering program will be housed in current facilities (some under renovation) or in the STEM Innovation Center adjacent to UW-Green Bay science facilities (Brown County-UW-Green Bay-Community Partnership). New expenses related to facilities and other new expenses (**Table 1; V.c and V.e**) are included to provide flexibility regarding facilities and other needs during program development. Projected revenue balances shown in **Table 1: VI.a** are also available for program development. Similar to mechanical engineering, excess revenue or donations from the community could be placed in an endowment to provide long-term support for scholarships, equipment, and faculty support for research.

| AMENDED TABLE 1 | | | | | | | |
|--|----------|--|-------------|-----------|-----------|-----------|-------------|
| University of Wisconsin - Green Bay | | | | | | | |
| Cost and Revenue Projections For Proposed BS in Electrical Engineering | | | | | | | |
| | | Items | Projections | | | | |
| | | | 2021 | 2022 | 2023 | 2024 | 2025 |
| | | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| I | a | Enrollment (New Student) Headcount | 16 | 24 | 36 | 40 | 44 |
| | b | Enrollment (Continuing Student) Headcount | 0 | 14 | 32 | 58 | 73 |
| | c | Enrollment (New Student) FTE | 14 | 22 | 32 | 36 | 40 |
| | d | Enrollment (Continuing Student) FTE | 0 | 12 | 29 | 52 | 66 |
| | e | TOTAL FTE | 14 | 34 | 61 | 88 | 106 |
| II | a | Total New Credit Hours (# new sections x credits per section) | 0 | 24 | 48 | 24 | 48 |
| | b | Existing Credit Hours | 30 | 30 | 54 | 102 | 126 |
| III | a | FTE of New Faculty/Instructional Staff | 0 | 1 | 2 | 1 | 2 |
| | b | FTE of Current Fac/IAS | 3 | 3 | 4 | 6 | 7 |
| | c | FTE of New Admin Staff | 0 | 0 | 0 | 0 | 0 |
| | d | FTE Current Admin Staff | 2 | 2 | 2 | 2 | 2 |
| IV | | New Revenues | | | | | |
| | a | <i>From Tuition (new credit hours x FTE)</i> | \$88,368 | \$214,608 | \$385,032 | \$555,456 | \$669,072 |
| | b | <i>From Fees</i> | \$19,600 | \$47,600 | \$85,400 | \$123,200 | \$148,400 |
| | c | <i>Program Revenue - Other Community Investment</i> | \$350,000 | \$350,000 | \$200,000 | \$150,000 | \$150,000 |
| | d | <i>Reallocation</i> | \$50,000 | \$50,000 | \$50,000 | \$50,000 | \$50,000 |
| | e | Total New Revenue | \$507,968 | \$662,208 | \$720,432 | \$878,656 | \$1,017,472 |
| V | | New Expenses | | | | | |
| | | Salaries plus Fringes | | | | | |
| | a | <i>Faculty/Instructional Staff</i> | \$0 | \$150,000 | \$420,000 | \$570,000 | \$840,000 |
| | b | <i>Other Staff</i> | \$0 | \$0 | \$0 | \$0 | \$0 |
| | | Other Expenses | | | | | |
| | c | <i>Facilities</i> | \$10,000 | \$10,000 | \$10,000 | \$10,000 | \$10,000 |
| | d | <i>Equipment</i> | \$300,000 | \$300,000 | \$250,000 | \$200,000 | \$100,000 |
| | e | <i>Other:</i> | \$5,000 | \$15,000 | \$25,000 | \$35,000 | \$45,000 |
| | | Total Expenses | \$315,000 | \$475,000 | \$705,000 | \$815,000 | \$995,000 |
| VI | a | Net Revenue | \$192,968 | \$187,208 | \$15,432 | \$63,656 | \$22,472 |

Laboratory Space and Equipment

Laboratory Space

A newly renovated space in the Instructional Services building will be scheduled for occupancy in January of 2022. This space will be shared by Electrical Engineering Technology program, Electrical Engineering, and the supporting program in Physics, as well as Communications.

The Electrical Engineering Technology and Electrical Engineering program space will include the following laboratory facilities:

- Circuits Lab
- Electronics Lab
- Electrical Machines Lab
- PLCs and SCADA Lab
- Computer Lab
- Senior Design Lab

Identification of Required Laboratory Equipment.

A summary of the initial equipment costs for the electrical engineering laboratories is summarized below. The expenditures are in relation to the laboratories and facilities that would be included in the renovation of the space in the Instructional Services building as discussed previously.

| LABORATORY | COST ESTIMATE | COMMENTS |
|-------------------------|------------------|---|
| Circuits Lab | N/A | Existing space and equipment from ET program's Circuit Laboratory will be shared by the proposed EE program. The existing equipment is located in IS building (IS-1067). |
| Electronics Lab | \$50,000 | New Electronics Laboratory will be built, which is expected to be located in IS Building. |
| Electrical Machines Lab | \$300,000 | New Electrical Machines Laboratory will be built, which is expected to be located in IS Building. |
| PLCs and SCADA Lab | \$40,000 | Existing space and equipment from ET program's Automation Laboratory will be shared by the proposed EE program. The existing equipment is located in IS building (IS-1048). However, some additional units will be added in order to increase the capacity of the current laboratory. |
| Computer Lab | \$70,000 | New Computer Laboratory for the proposed EE program will be built, which is expected to be located in IS Building. |
| Senior Design Lab | \$25,000 | New Students Design Laboratory for the proposed EE program will be built, which is expected to be located in IS Building. |
| TOTAL COST | \$485,000 | |

Detailed information on the equipment for the individual laboratories can be found in the following tables, while noting that the estimates have been increased in the summary table to account for potential cost increases at the time of program implementation. As noted previously, similar to mechanical engineering, investments from the community would be used to support initial equipment needs, primarily in years 1 and 2 of the program.

Circuits Laboratory:

The existing Electrical Circuits Laboratory has the following equipment, which will be shared by the proposed electrical engineering program.

| Existing Equipment | Vendor | Qty |
|---|--------------------------|------------|
| Workstation Computers | HP | 9 |
| Digital Storage Oscilloscope | GWInstek | 8 |
| Analog oscilloscope | BK Precision | 8 |
| Function Generator | BK Precision, Tektronics | 12 |
| Digital Multimeter | Fluke | 15 |
| Digital Multimeter | BK Precision | 4 |
| Trainer Board | Knight Electronics | 10 |
| DC Power Supply | BK Precision, Keithley | 12 |
| Required electrical components to conduct the laboratory (resistors, capacitors, inductors, breadboards, wires, cables, etc.) | | |

Additional existing equipment:

| Equipment | Vendor | Unit Cost (\$) | Qty |
|---|---------------|---------------------------------|------------|
| Used AC Machines (for demonstration purposes) | Various | Received donated from industry. | 5 |

Electronics Laboratory:

The following list of equipment is needed to set up a new Electronics Laboratory.

| Equipment | Vendor | Unit Cost (\$) | Qty | Total Cost (\$) |
|--|--------------------|-----------------------|------------|------------------------|
| 2231A-30-3 Keithley Triple-Channel DC Power Supply | ValueTronics | \$535 | 9 | \$4,815 |
| AFG1022 Tektronix Arbitrary /Function Generator | ValueTronics | \$670 | 9 | \$6,030 |
| 2121C BK Precision Analog Oscilloscope | ValueTronics | \$525 | 9 | \$4,725 |
| DS1054Z 50 MHz Digital Oscilloscope | ValueTronics | \$350 | 9 | \$3,150 |
| 115 Fluke True-RMS Digital Multimeter | ValueTronics | \$160 | 12 | \$1,920 |
| ML2010 Analog Digital Trainer Board | Knight Electronics | \$600 | 9 | \$5,400 |
| Miscellaneous electrical/electronic components to conduct labs (Example: Resistors, capacitors, semiconductor kits etc.) | | | | \$10,000 |
| Workstation Computers with monitors Specifications: Xeon processor, 16 GB memory, 512 GB PCIe SSD, Nvidia Quadro P620 | HP | \$1,500 | 9 | \$13,500 |

| | |
|---------------------|-----------------|
| Total Budget | \$49,540 |
|---------------------|-----------------|

Electrical Machines Laboratory

The following list of equipment is needed to set up a new Electrical Machines Laboratory.

| Equipment | Vendor | Unit Cost (\$) | Qty | Total Cost (\$) |
|--|---------------|-----------------------|------------|------------------------|
| Workstation | Festo-LabVolt | \$2,700 | 9 | \$24,300 |
| DC Motor/Generator | Festo-LabVolt | \$3,000 | 9 | \$27,000 |
| Squirrel Cage Induction Motor | Festo-LabVolt | \$1,225 | 9 | \$11,025 |
| Three-Phase Synchronous Motor/Generator | Festo-LabVolt | \$1,750 | 9 | \$15,750 |
| Resistive Load | Festo-LabVolt | \$625 | 9 | \$5,625 |
| Inductive Load | Festo-LabVolt | \$1,000 | 9 | \$9,000 |
| Capacitive Load | Festo-LabVolt | \$775 | 9 | \$6,975 |
| Single-phase transformer | Festo-LabVolt | \$750 | 27 | \$20,250 |
| Synchronizing Module / Three-Phase Contactor | Festo-LabVolt | \$1,125 | 9 | \$10,125 |
| Three-Phase Power Supply | Festo-LabVolt | \$3,500 | 9 | \$31,500 |
| Timing Belt | Festo-LabVolt | \$25 | 9 | \$225 |
| Connection Leads | Festo-LabVolt | \$300 | 9 | \$2,700 |
| Data Acquisition and Control Interface | Festo-LabVolt | \$5,300 | 9 | \$47,700 |
| Four-Quadrant Dynamometer / Power Supply (including the following functions ...) | Festo-LabVolt | \$4,800 | 9 | \$43,200 |
| Instructor and students lab manuals | Festo-LabVolt | \$400 | 9 | \$3,600 |
| Storage Cabinet | Festo-LabVolt | \$2,000 | 2 | \$4,000 |
| Festo Installation, Commissioning, & Training Services | Festo-LabVolt | \$2,000 | 1 | \$2,000 |
| Estimated Freight | | | | \$5000 |
| Workstation Computers with monitors | HP | \$1,500 | 9 | \$13,500 |

| | | | | |
|---|--|--|--|------------------|
| Specifications: Xeon processor, 16 GB memory, 512 GB PCIe SSD, Nvidia Quadro P620 | | | | |
| Total Budget | | | | \$283,475 |

PLCs and SCADA Laboratory:

The existing Automation Laboratory has the following equipment, which will be shared by the proposed EE program.

| Existing Equipment | Vendor | Qty |
|---|---------------|------------|
| Data Acquisition System Specification: NI myDAQ | NI | 6 |
| Microcontroller Unit Specification: Arduino Uno | Arduino | 8 |
| PLC Allen-Bradley MicroLogix 1200 with Case | Festo-Labvolt | 3 |
| PLC Allen-Bradley MicroLogix 1100 with Case | Festo-Labvolt | 2 |
| Traffic Light System: includes Push-Buttons and Lights. | Festo-Labvolt | 1 |
| Level Process System: includes Push-Buttons and Lights, Toggle Switches and Lights, Rotary Switches, Emergency Switch and Level Sensor. | Festo-Labvolt | 1 |
| Bottling Process System: includes Air Compressor, Conditioning Unit, Push-Buttons and Lights, Toggle Switches and Lights, Rotary Switches and Emergency Switch. | Festo-Labvolt | 1 |
| Wind Turbine System: includes Push-Buttons and Lights and Analog Expansion Kit. | Festo-Labvolt | 1 |
| Electro-Mechanical System Using Stepper Motor: includes Push-Buttons and Lights, Toggle Switches and Lights, Rotary Switches, Emergency Switch and Optical Encoder. | Festo-Labvolt | 1 |
| Workstation computers with monitors Specifications: Xeon processor, 16 GB memory, 512 GB PCIe SSD, Nvidia Quadro P620 | HP | 5 |

In addition to the existing equipment, the following list of equipment is requested to upgrade the capacity of the laboratory.

| Equipment | Vendor | Unit Cost (\$) | Qty | Total Cost (\$) |
|--|---------------|-----------------------|------------|------------------------|
| Data Acquisition System Specification: NI myDAQ | NI | \$400 | 20 | \$8,000 |
| Microcontroller Unit Specification: Arduino Uno | Arduino | \$150 | 12 | \$1,800 |
| PLC Allen-Bradley MicroLogix 1200 with Case | Festo-Labvolt | \$3,100 | 3 | \$9,300 |

| | | | | |
|---|---------------|---------|---|-----------------|
| PLC Allen-Bradley MicroLogix 1100 with Case | Festo-Labvolt | \$3,300 | 3 | \$9,900 |
| Estimated Shipping cost from Festo-Labvolt | | | | \$250 |
| Workstation computers with monitors | HP | \$1,500 | 5 | \$7,500 |
| Total Budget | | | | \$36,750 |

Computer Laboratory:

The following list of equipment is needed to set up a new Computer Laboratory.

| Equipment | Vendor | Unit Cost (\$) | Qty | Total Cost (\$) |
|--|--------------------|----------------|-----|-----------------|
| Workstation Computers Specifications: Xeon processor, 16 GB memory, 512 GB PCIe SSD, Nvidia Quadro P620 | HP | \$1,300 | 30 | \$39,000 |
| 24-inch Monitors Specifications: 1920x1200 resolution | HP | \$210 | 30 | \$6,300 |
| Software List | | | | |
| Matlab and Matlab Simulink (site licence) | Mathworks | \$15,500 | | \$15,500 |
| Multisim (site licence) | NI | \$6,000 | | \$6,000 |
| IGSS SCADA | Schneider Electric | Free Version | | 0 |
| CodeBlocks | CodeBlocks | Free Version | | 0 |
| Total Budget | | | | \$66,800 |

Senior Design Laboratory:

The following list of equipment is needed to set up a new Senior Design Laboratory

| Equipment | Vendor | Unit Cost (\$) | Qty | Total Cost (\$) |
|--|--------------|----------------|-----|-----------------|
| 2231A-30-3 Keithley Triple-Channel DC Power Supply | ValueTronics | \$550 | 4 | \$2,200 |
| AFG1022 Tektronix Arbitrary /Function Generator | ValueTronics | \$700 | 4 | \$2,800 |

| | | | | |
|--|--------------------|---------|---|-----------------|
| 2121C BK Precision Analog Oscilloscope | ValueTronics | \$525 | 4 | \$2,100 |
| DS1054Z 50 MHz Digital Oscilloscope | ValueTronics | \$350 | 4 | \$1,400 |
| 115 Fluke True-RMS Digital Multimeter | ValueTronics | \$160 | 8 | \$1,280 |
| ML2010 Analog Digital Trainer Board | Knight Electronics | \$600 | 4 | \$2,400 |
| Workstation Computers with monitors Specifications: Xeon processor, 16 GB memory, 512 GB PCIe SSD, Nvidia Quadro P620 | HP | \$1,500 | 4 | \$6,000 |
| Miscellaneous electrical/electronic components to conduct labs (Example: Resistors, capacitors, semiconductor kits etc.) | | | | \$3,000 |
| Total Budget | | | | \$20,180 |

Identify the funding to cover the costs of the new equipment and space, as well as the plan for renewal and replacement of that equipment.

As noted previously, a \$5.7 million renovation is scheduled for the Instructional Services building, with an estimated completion date of January 2022. Community support has been included in the budget to cover the initial equipment costs, with projected revenue on ongoing community support being available for future equipment needs.



MEMORANDUM

TO: Michael Alexander
Provost and Vice Chancellor

FROM: John F. Katers
Dean, College of Science, Engineering, and Technology

DATE: February 7, 2020

SUBJECT: Establishment of BS in Electrical Engineering

Given the successful establishment of the Richard J. Resch School of Engineering and the BS in Mechanical Engineering on July 1, 2018, I would like to express my support for the establishment of a BS in Electrical Engineering at the University of Wisconsin-Green Bay. This program would be housed in the Resch School of Engineering, joining Mechanical Engineering, three programs in Engineering Technology (electrical, environmental, and mechanical), Computer Science, and Mathematics and Statistics. It should be noted that enrollment in Mechanical Engineering has greatly exceeded expectations during the first two years, demonstrating the strong demand for engineering degrees in northeastern Wisconsin. I am confident that the proposed BS in Electrical Engineering will receive the support of faculty governance and will also have the same level of community support as mechanical engineering, with numerous letters of support already received.

cc: Sheryl Van Gruensven, Interim Chancellor
Patricia Terry, Chair of Engineering



UNIVERSITY of WISCONSIN
GREEN BAY

Date: February 12, 2020
To: Ray Cross, UW-System President
From: Michael Alexander, Provost and Vice Chancellor for Academic Affairs *MA*
Subject: Authorization to Implement: B.S. in Electrical Engineering

I confirm the University of Wisconsin-Green Bay's commitment to adding a Bachelor of Science (BS) in Electrical Engineering to our undergraduate program array. The program gained final, formal support from shared governance at Faculty Senate on _____. The program responds to a number of local, regional, and national needs to produce more graduates in the field. It will also build upon the momentum of the newly formed Richard J. Resch School of Engineering and has been designed to satisfy all accreditation requirements set forth by the Accreditation Board for Engineering and Technology.

The program will be funded by new program revenue, gifts and pledges of \$1.2 million dollars over the next five years, and supplemental support from existing resources within the College of Science and Technology. The proposal does require the addition of 6.0 FTE over the first five years, which has been included in the budget projections. The budget will also cover the necessary equipment to build out the program. The approved construction project of our Instructional Services Building will create lab space for the program to be delivered.

The B.S. in Electrical Engineering is in alignment with UW-Green Bay's Mission and Urban Serving Vision, which aims to "reshape academic programs to meet the current and future workforce needs in the region particularly in the areas of technology, manufacturing..." We have received 31 letters of support for the degree program from regional engineering firms, 2-year colleges, and community leaders. Graduates from the program are needed by our region to be able to continue to grow economically and retain local talent in the area.

I am fully supportive of the development of a B.S. in Electrical Engineering at UW-Green Bay. Please let me know if you require any additional information regarding the program, and thank you for your consideration. I look forward to bringing this degree program to the Board of Regents for consideration to implement.



GREATER GREEN BAY
CHAMBER

November 7, 2019

Dean John Katers
College of Science, Engineering and Technology
University of Wisconsin-Green Bay
2420 Nicolet Drive
Green Bay, WI 54311

Dear Dean Katers,

The Greater Green Bay Chamber supports launching a Bachelor of Science in Electrical Engineering at the University of Wisconsin-Green Bay through the Richard J. Resch School of Engineering.

The Greater Green Bay Chamber is a diverse group of 1,200 businesses, non-profit organizations and municipalities who work collaboratively on economic and workforce development for the improvement of our community and region. As we work toward our mission, we routinely hear from our members of the need for skilled labor, especially in the engineering field.

In May of 2017, the Chamber released a community-wide economic development strategic plan. This plan outlines the direct correlation between higher education and economic success. This is critically important to our large manufacturing sector in Northeast Wisconsin which relies on UW-Green Bay to supply the skilled labor they need to be successful. Unfortunately, electrical engineering is a missing component our region needs to grow.

Thank you for your service to our community, and please let me know if you have any additional questions.

Sincerely,

Laurie Radke
President & CEO

November 5, 2019

Dean John Katers
University of Wisconsin – Green Bay
2420 Nicolet Drive
Green Bay, WI 54311

Dear Dean Katers:

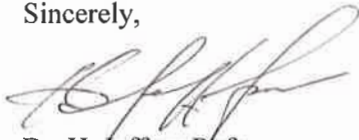
Northeast Wisconsin Technical College (NWTC) fully supports establishing a Bachelor of Science in Electrical Engineering at the University of Wisconsin-Green Bay (UWGB) through the Richard J. Resch School of Engineering. Working together, NWTC and UWGB have brought engineering technology degrees in the mechanical, electrical, and environmental fields, instituted a mechanical engineering bachelor degree, and developed fully transferable pathways between NWTC Associate degrees and UWGB Bachelor degrees. The final missing piece is a transferable option into electrical engineering. In the last two years, NWTC has enrolled 299 students in programs that would provide an avenue into the electrical engineering program.

As you know, northeast Wisconsin has one of the densest concentrations of manufacturing in the Midwest and nation (24% of its workforce). As such, it is highly dependent on a ready supply of engineers in the mechanical and electrical fields. The need for electrical engineers is only going to grow as the region's manufacturing enterprises adopt Industry 4.0 strategies such as the introduction of artificial/machine intelligence, data analytics, additive manufacturing and the integration of augmented and virtual reality tools.

Northeast Wisconsin Technical College will continue to add and grow its programs supporting Industry 4.0. Many of its students will wish to continue their education by completing an electrical engineering bachelor degree. Many of NWTC's students have been out of high school for a few years and most of its students have jobs, families, or few resources; all of which make remaining in the northeast region critical. We also know that students are more likely to remain in the area where they receive their post-secondary education. This is essential for the continued growth and good health of the region's manufacturers.

Northeast Wisconsin Technical College will continue to provide support, expertise, students, and resources to make sure that the electrical engineering partnership between our institutions is implemented and is strong.

Sincerely,



Dr. H. Jeffrey Rafn
President

HJR/mjt

TOLL FREE 800-422-NWTC

GREEN BAY
920-498-5400
2740 W. Mason Street | P.O. Box 19042
Green Bay, WI 54307-9042

MARINETTE
715-735-9361
1601 University Drive
Marinette, WI 54143

STURGEON BAY
920-746-4900
229 N. 14th Avenue
Sturgeon Bay, WI 54235



November 18, 2019

Dean John Katers
College of Science, Engineering, and Technology
University of Wisconsin-Green Bay
2420 Nicolet Drive
Green Bay, WI 54311

Dear Dean Katers,

Faith Technologies, Inc. supports launching a Bachelor of Science in Electrical Engineering at the University of Wisconsin – Green Bay through the Richard J. Resch School of Engineering.

Faith Technologies is a growing, nationally recognized, Electrical design-build construction firm. Headquartered in Menasha, WI, we employ in excess of 100 electrical engineering personnel to support the design-build electrical projects that we perform.

We believe that the shortage of available engineering talent is real and will continue to get worse over time. We view the proposed program at UW-Green Bay to be an avenue to enable prospective students who are unwilling or unable to attend universities outside of the area to obtain an engineering degree that would otherwise be unavailable to them. We also believe enabling students to obtain advanced degrees from a university close in proximity encourages them to remain in the local communities following graduation.

Thank you for your service to the communities of northeast Wisconsin.

Please let me know if you have any questions that I can help answer on behalf of Faith Technologies, Inc.

Sincerely,

A handwritten signature in black ink that reads "Bill Lynch". The signature is written in a cursive, flowing style.

Bill Lynch
Vice President of Engineering

CC Jill Hermans, Executive Vice President, Talent



CORPORATE HEADQUARTERS: P.O. BOX 47 ■ WAUKESHA, WI 53187-0047
PHONE: 262-506-6700 ■ TOLL FREE: 866-899-3204 ■ FAX: 262-506-6124 ■ www.atcllc.com

November 21, 2019

Dean John Katers
College of Science, Engineering and Technology
University of Wisconsin-Green Bay
2420 Nicolet Drive
Green Bay, WI 54311

Dear Dean Katers,

American Transmission Co. supports launching a Bachelor of Science in Electrical Engineering at the University of Wisconsin-Green Bay through the Richard J. Resch School of Engineering.

American Transmission Co. was founded in 2001, as the first multi-state, transmission-only utility in the United States. Unlike most other utilities, we have a single focus: transmission. Our transmission system allows energy producers to transport electric power from where it's generated to where it's needed. ATC provides electric transmission service in an area from the Upper Peninsula of Michigan, throughout the eastern half of Wisconsin and into portions of Illinois. Our more than 9,890 miles of high-voltage transmission lines and more than 568 substations provide communities with access to local and regional energy sources.

Our mission is to provide reliable electric transmission service to these customers and part of delivering this service is to ensure that we have qualified professionals in the field of engineering. We ensure a future workforce by partnering with universities in our service area to hire engineers for both internship and full-time opportunities. We have three offices in the State of Wisconsin and having an electrical engineering program at University of Wisconsin-Green Bay will allow us to prepare for future company workforce needs, particularly in our De Pere office which is close to the university.

Thank you for your service to our community and please let me know if you have any additional questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Davis", is written over a light blue horizontal line.

Mark Davis
EVP and Chief Operating Officer
American Transmission Co.

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December 2, 2019

Dean John Katers
College of Science, Engineering and Technology
University of Wisconsin-Green Bay
2420 Nicolet Drive
Green Bay, WI 54311

Dear Dean Katers,

I am writing in support of launching a Bachelor of Science in Electrical Engineering at the University of Wisconsin-Green Bay through the Richard J. Resch School of Engineering.

I retired from my position as CEO and Chairman of Integrys Energy Group a few years ago, after serving more than 35 years at many of its subsidiaries. I began my career at Wisconsin Public Service Corporation in Green Bay after earning a Bachelor and Master of Engineering in Nuclear Engineering at the University of Michigan. My career included many management positions, including Plant Manager at the Kewaunee Nuclear Power Plant; President of Generation at Wisconsin Public Service; President of Power Development, Incorporated; President of Wisconsin Public Service Corporation; and President, Chief Executive Officer and Chairman of Integrys Energy Group.

Through these experiences, I saw first-hand how important it is to have well-educated, skilled technical employees. The availability of technical talent was critical to our success in hiring the talent we needed. Of course, this remains true today for any and all employers in need of technical and engineering talent. I firmly believe that a Bachelor of Science in Electrical Engineering program developed at UW-Green Bay will be instrumental in providing the talent pool that is so critical to the success of the businesses in our area. Importantly, I note that UW-Green Bay plans to have the Electrical Engineering Program accredited by the Accreditation Board for Engineering Technology. Having the program accredited is important for prospective employers as it provides a benchmark for the quality of the program. This is also re-assuring for students, as an accredited program will help provide confidence in the quality of their education.

An additional advantage in providing this program is the offering of a reasonable-cost degree to potential students in the area - especially when working in collaboration with the Northeast Wisconsin Technical College, where students can take many of the program prerequisites prior to transferring to the University of Wisconsin-Green Bay. Such a program provides opportunities to students that they might otherwise not have. In addition, this also increases the likelihood that these students will remain in the area, making positive contributions to our communities.

I worked with many UW-Green Bay graduates over the course of my career and was impressed with the academic knowledge, business acumen and work ethic of many of them. I suspect that their education from UW-Green Bay provided a strong platform for their success. I am confident that in developing an Electrical Engineering Program, UW-Green Bay will have similar success in shaping the lives of students and helping the business community.

Sincerely,



Charles Schrock
P.O. Box 136
Florence, WI. 54121-0136

**Academic Affairs Council Report
AAC Courseleaf Decisions 11 December 2019**

The self-study report for First Nations Studies was received from Chair Lisa Poupart. This report will be reviewed by AAC before the end of the semester.

The committee approved the following courses courseleaf requests:

1. **FRENCH 102 : Introduction to the French Language II** – was now correctly routed through the GEC.
2. **HLTH_MGT : Healthcare Management in Health Systems Certificate** – Change in program title.
3. **INFO SCI 341 : Survey of Gaming and Interactive Media** – Updated prerequisites
4. **INFO SCI 342 : Game Design** – Updated, college, effective date of action, and prerequisites.
5. **MATH 329 : Applied Regression Analysis** – Updated college, budgetary unit, effective date of action, and prerequisites.
6. **MATH 430 : Design of Experiments** – Updated college, budgetary unit, effective date of action, and prerequisites.
7. **MATH 431 : Multivariate Statistical Analysis** – Updated college, budgetary unit, effective date of action, and prerequisites.
8. **MATH STATISTICS: Statistics Emphasis** – Updated college, budgetary unit, effective date of action, and prerequisites.
9. **PSYCH Brain Beha : Brain, Behavior, and Health Emphasis** – Updated budgetary unit name and code, added PSYCH 483 to choice of electives.
10. **PSYCH DEVELOP : Development Emphasis** – Updated budgetary unit name and code, added PSYCH 483 to choice of electives.
11. **PSYCH GENERAL : Psychology Major-General Emphasis** – Updated budgetary unit name and code, added PSYCH 483 to choice of electives.
12. **PSYCH MENTAL : Mental Health Emphasis** – Updated budgetary unit name and code, added PSYCH 483 to choice of electives.
13. **SOCIOLOGICAL 203 : Ethnic and Racial Identities** – Updated program, college, effective date of action, catalog description.

The following requests were rolled back

COMM 305 : Principles of Public Relations/Corporate Communications
UR RE ST 360: Three Dimensional Modeling

The committee wanted a rationale for the change in the default section size for both requests.

**Academic Affairs Council Report
AAC Courseleaf Decisions 7 February 2020**

The AAC approved the following Courseleaf requests:

1. ACCTG PRO: Professional Accounting Certificate
2. ART 443: Advanced Problems in Photography
3. BUS ADM 384: Supply Chain Management
4. BUS ADM 497: Internship
5. CHEM 104: Survey of General Chemistry
6. CHEM 105: Survey of Organic and Biochemistry
7. CHEM 107: Survey of Organic and Biochemistry Lab
8. CHEM 214: Principles of Chemistry II Laboratory
9. CHEM 304: Organic Chemistry Laboratory I
10. CHEM 496: Teaching Assistant in Chemistry
11. EDUC 281: Conceptual Foundations of Elementary Mathematics I
12. EMBI-I: Sustainability Minor
13. FIN 415: Employee Benefits and Retirement Planning
14. FIN 425: Estate and Trust Planning
15. FIN 475: Financial Plan Development
16. GEOSCI GEO SC: Geoscience Emphasis
17. GEOSCI GEO-ED: Geoscience Emphasis for Students Seeking Teaching Certification
18. HUM BIOL 403: Human Physiology Laboratory
19. HUM BIOL 413: Neurobiology
20. MATH 328: Abstract Algebra Introduction to Algebraic Structures
21. MATH-I MATH-GEN: Mathematics Emphasis
22. ORG LEAD 348: Organizational Behavior Across Sectors
23. PHYSICS 103: Fundamentals of Physics I
24. WATER_SCI: Water Science

The following courses were held over to get more info on the prerequisites:

CHEM 211: Principles of Chemistry I
 CHEM 212: Principles of Chemistry II

The AAC asked for more clarification on the updated periodicity of the following courses:

PSYCH 302: Developmental Research Methods
 PSYCH 310: Drugs and Behavior
 PSYCH 315: Social Cognitive Affective Neuroscience
 PSYCH 321: Sport and Performance Psychology
 PSYCH 344: Dying, Death, and Loss
 PSYCH 345: Human Sexuality
 PSYCH 350: Cultural Psychology
 PSYCH 380: Conservation Psychology
 PSYCH 390: Environmental Psychology
 PSYCH 420: Psychological Testing
 PSYCH 450: Health Psychology

Respectfully Submitted,

Michael McIntire, Chair of AAC

Graduate Academic Affairs Council Report
GAAC Courseleaf Approvals through 4 December 2019

GAAC Meetings – 14 October 2019 and 18 November 2019

Program Change Requests

1. Updates to **MSW (Social Work) Program** to reflect approved course changes. Approved Nov. 18th by GAAC.
 - a. Remove SW 703, 705, 736, 738 (deactivated courses)

Course Change Requests

1. **FNED 880**: Special Topics in Indigenous Education- change fall 2018 to fall 2019
Approved by Chair 11/4/19
2. **AT 551**: Clinical Kinesiology **Title Change** (formerly Pathophysiology and Mechanics of Injury) Approved by GAAC at Nov. 18, 2019 meeting
3. **AT 705**: Therapeutic Interventions (4 credits) (replaced deactivated course AT 706 Therapeutic Interventions II- 3 credits). Approved by GAAC at Nov. 18, 2019 meeting

Program Reviews

1. **MSW Program Review** GAAC Summary report sent to Matt Dornbush Assoc Vice Chancellor/Director of Graduate Studies November 19, 2019

Graduate Academic Affairs Council Report
GAAC Courseleaf Approvals December 4, 2019 to February 17, 2020

GAAC Meetings- Jan. 21, 2020 & Feb. 17, 2020

Course Change Requests

1. **ED/S. Sports Psychology**- The following **new** courses were approved by GAAC at the 1/21/20 meeting
 - a. PSYCH 605: Advanced Psychological Statistics
 - b. PSYCH 610: Empathetic Listening Skills
 - c. PSYCH 621: Theories of Sport, Exercise, and Performance Psychology
 - d. PSYCH 627: Professional Ethics in Psychology
 - e. PSYCH 700: Advanced Psychological Research Methods
 - f. PSYCH 721: Applied Sport and Performance Psychology
 - g. PSYCH 740: Multicultural Psychology

2. **MS MGT Course changes**
 - a. **736: Analysis & Design of Business Information Systems-** removed course prerequisite- MGMT 735; approved by GAAC at the 1/21/20 meeting.
 - b. The following Course changes were approved by the GAAC chair on 2/14/20 (per committee recommendation):
 - i. **MGMT 730: Leading the Self-** Change in periodicity from every spring to every fall
 - ii. **MGMT 753: Organizational Theory and Behavior-** Changed required prerequisite from graduate standing and BUS ADM 382 to Graduate standing

3. **Master of Athletic Training-** The following AT course changes were approved by GAAC at the 1/21/20 meeting
 - a. AT 700: Evidence Based Patient Care- changed required prerequisite from AT 601 to Admitted to MAT.
 - b. AT 750: Athletic Training Administration- reduced credits from 3 to 2.
 - c. AT 760: Clinical Education I- changed required prerequisite from AT 601 & 720 to AT 601 & 710.
 - d. AT 790: Athletic Training Capstone Project- changed from Seminar to IST.

4. **BUS ADM Program-** the following new courses were approved by GAAC at the 2/17/20 meeting.
 - a. BUS ADM 573: Entrepreneurial Finance- new course proposal
 - i. Cross listed with BUS ADM 373
 - b. BUS ADM 635: Foundations of Strategic Information Management- changed course number from 735 to 635.
 - c. BUS ADM 636: Analysis & Design of Business Information Systems- changed course number from 736 to 636.

5. **ENV S&P 702: Stable Isotopes in the Environment. 1 credit-** approved by GAAC at the 2/17/20 meeting. Course previously taught as special topic. Was well enrolled so being taught on a more regular basis.

Program Reviews

1. **MS MGT Program Review** GAAC Summary report Pieter deHart, Assoc Vice Chancellor for Graduate Studies on February 10, 2020