

BOARD OF REGENTS OF THE UNIVERSITY OF WISCONSIN SYSTEM

Education Committee

Thursday, July 6, 2023
8:45 a.m. – 10:15 a.m.

Room 2120-2130
UW-La Crosse Student Union
521 East Avenue N.
La Crosse, Wisconsin
and Via Zoom Videoconference

- A. Calling of the Roll
- B. Declaration of Conflicts
- C. Proposed Consent Agenda
 - 1. Approval of the June 8, 2023 Meeting Minutes of the Education Committee
 - 2. UW-Eau Claire: Approval of a Master of Science in Exercise Physiology
 - 3. UW Oshkosh: Approval of a Bachelor of Science in Automation Engineering
- D. Approval of Modification of the UW System Undergraduate Application Fee Structure
- E. Host Presentation by UW-La Crosse: Imagine-ing Radiological Science – Undergraduate Health Profession Careers
- F. UW System Strategic Plan Implementation: Campus-Level Experience and Examples

**NEW PROGRAM AUTHORIZATION (IMPLEMENTATION)
MASTER OF SCIENCE IN EXERCISE PHYSIOLOGY,
UNIVERSITY OF WISCONSIN-EAU CLAIRE**

REQUESTED ACTION

Adoption of Resolution C.2., authorizing the implementation of the Master of Science Degree in Exercise Physiology at the University of Wisconsin-Eau Claire.

Resolution C.2. That, upon the recommendation of the Chancellor of the University of Wisconsin-Eau Claire and the President of the University of Wisconsin System, the Chancellor is authorized to implement the Master of Science Degree Program in Exercise Physiology at the University of Wisconsin-Eau Claire.

SUMMARY

The University of Wisconsin (UW)-Eau Claire proposes to establish a Master of Science (M.S.) in Exercise Physiology. The program aligns with the mission of UW-Eau Claire by adding a “strong, distinctive graduate program” and creating “educational opportunities responsive to the needs our communities, state, region and beyond.” It also builds on existing strengths in student-faculty research. The program aligns with and supports the Academic Strategic Plan’s focus on providing experiential learning opportunities and developing innovative graduate programs to meet regional needs. The program will also contribute to the array of graduate programs currently offered in the College of Education and Human Sciences at UW-Eau Claire. The program’s 36 credits of coursework are designed to provide foundational knowledge and clinical experiences to prepare students for work in preventative health programs, such as: medically-based fitness programs; cardiac rehabilitation and other clinically related areas, such as aging, diabetes management, cancer, and neurology; and rehabilitation programs for individuals with disabilities. The program will also prepare students for application to advanced professional degree programs. The M.S. in Exercise Physiology will meet growing demand for exercise physiologists. The Bureau of Labor Statistics projects employment to grow 13%

from 2020 to 2030.¹ In the next few years the program will pursue accreditation through Commission on Accreditation of Allied Health Education Programs (CAAHEP) to allow students to meet certification requirements for Exercise Physiologist (ACSM-EP) or Clinical Exercise Physiologist (ACSM-CEP) expected to be in place in August, 2027.

Presenter

- Dr. Patricia Kleine, Provost and Vice Chancellor for Academic Affairs

BACKGROUND

This proposal is presented in accord with UW System Administrative Policy 102: Policy on University of Wisconsin System Array Management: Program Planning, Delivery, Review, and Reporting (Revised April 29, 2022), available at <https://www.wisconsin.edu/uw-policies/uw-system-administrative-policies/policy-on-university-of-wisconsin-system-array-management-program-planning-delivery-review-and-reporting-2/>.

Related Policies

- Regent Policy Document 4-12: Academic Program Planning, Review, and Approval in the University of Wisconsin System
- UW System Administrative Policy 102: Policy on University of Wisconsin System Array Management: Program Planning, Delivery, Review, and Reporting

ATTACHMENTS

- A) Request for Authorization to Implement
- B) Cost and Revenue Projections Worksheet
- C) Cost and Revenue Projections Narrative
- D) Provost's Letter

¹ U.S. Bureau of Labor Statistics. (2021). *Occupational outlook handbook: Exercise physiologists*
<https://www.bls.gov/ooh/healthcare/exercise-physiologists.htm>

**REQUEST FOR AUTHORIZATION TO IMPLEMENT A
MASTER OF SCIENCE DEGREE IN EXERCISE
PHYSIOLOGY AT UNIVERSITY OF WISCONSIN-EAU
CLAIRE PREPARED BY UW-EAU CLAIRE**

ABSTRACT

The University of Wisconsin (UW)-Eau Claire proposes to establish a Master of Science (M.S.) in Exercise Physiology. The program aligns with the mission of UW-Eau Claire by adding a “strong, distinctive graduate program” and creating “educational opportunities responsive to the needs our communities, state, region and beyond.” It also builds on existing strengths in student-faculty research. The program aligns with and supports the Academic Strategic Plan’s focus on providing experiential learning opportunities and developing innovative graduate programs to meet regional needs. The program will also contribute to the array of graduate programs currently offered in the College of Education and Human Sciences at UW-Eau Claire. The program’s 36 credits of coursework are designed to provide foundational knowledge and clinical experiences to prepare students for work in preventative health programs, such as: medically-based fitness programs; cardiac rehabilitation and other clinically related areas, such as aging, diabetes management, cancer, and neurology; and rehabilitation programs for individuals with disabilities. The program will also prepare students for application to advanced professional degree programs. The M.S. in Exercise Physiology will meet growing demand for exercise physiologists. The Bureau of Labor Statistics projects employment to grow 13% from 2020 to 2030.¹ In the next few years the program will pursue accreditation through Commission on Accreditation of Allied Health Education Programs (CAAHEP) to allow students to meet certification requirements for Exercise Physiologist (ACSM-EP) or Clinical Exercise Physiologist (ACSM-CEP) expected to be in place in August 2027.

PROGRAM IDENTIFICATION

University Name

University of Wisconsin-Eau Claire

Title of Proposed Academic Degree Program

Exercise Physiology

¹ U.S. Bureau of Labor Statistics. (2021). *Occupational outlook handbook: Exercise physiologists*
<https://www.bls.gov/ooh/healthcare/exercise-physiologists.htm>

Degree Designation(s)

Master of Science

Mode of Delivery

Single university, face-to-face instruction in the classroom, laboratory, and clinical setting.

Department or Functional Equivalent

Department of Kinesiology

College, School, or Functional Equivalent

College of Education and Human Sciences

Proposed Date of Implementation

September 2024

Projected Enrollments and Graduates by Year Five

Table 1 represents enrollment and graduation projections for students entering the program over the next five years. By the end of year five, it is expected that 75 students will have enrolled in the program and 51 will have graduated. The average student retention rate is projected to be near 100% with a potential attrition rate of one student per year on average. This is based on the high retention rate of the undergraduate rehabilitation science program, which will be a main feeder program for the M.S. in Exercise Physiology program, and the current M.S. in Athletic Training program.

Table 1: Five-Year Academic Degree Program Enrollment Projections

Students/Year	Year 1	Year 2	Year 3	Year 4	Year 5
New Students	8	12	15	20	20
Continuing Students	0	7	11	14	19
Total Enrollment	8	19	26	34	39
Graduating Students	0	7	11	14	19

Tuition Structure

The M.S. in Exercise Physiology program will follow a cost-recovery model and will use service-based pricing. The degree will consist of 36 credits. Full-time students will be able to complete all degree requirements in two years. Part-time enrollment can be an option as the sequencing of graduate courses will allow students to complete their degree. The initial cost per credit hour will be \$550.

DESCRIPTION OF PROGRAM

Overview of the Program

The proposed M.S. in Exercise Physiology is a 36 credit program designed as a residential graduate degree to be completed over two years. This program will also be offered as a 4+1 option for students pursuing their undergraduate degree at UW-Eau Claire, so that students can receive both their undergraduate and graduate degree in five years. In Year 4, students will simultaneously complete requirements for the undergraduate degree while beginning graduate coursework. Prerequisite courses will be taken prior to acceptance into the graduate program. Students pursuing the 4+1 option must complete all undergraduate degree and university graduation requirements before matriculating into the graduate program. In addition, the graduate program will allow up to five freshmen, applying to the university for their undergraduate degree, the opportunity for direct admission into the M.S. in Exercise Physiology program. Admission to the M.S. program will be contingent upon completing an undergraduate degree, including prerequisite courses at the required grade level and meeting other program admission requirements prior to starting in the graduate program.

The curriculum for the degree (36 total credits) consists of a program core and an elective course array. The program core (26-29 credits) will provide students with a breadth and depth of foundational knowledge through courses such as advanced exercise physiology, laboratory procedures, clinical exercise physiology, and adapted physical activity; as well as theoretical knowledge regarding research methods and application of statistical procedures. Also, students will complete one of three capstone experiences (either a thesis, scholarly research paper, or internship) based on their professional goals. A list of electives (e.g., electrocardiography, psychology of sport and physical activity, aging/gerontology, cardiopulmonary physiology, etc.) will be provided for students from which to choose based on their professional interests.

Additionally, students will be required to engage in experiential learning and apply knowledge of therapeutic exercise program design while working with individuals from clinical populations in the department's outreach programs. These programs include: Community Fitness Program; Physical Activity and Recreation for Individuals with Disabilities in the Eau Claire Area (PRIDE); PRIDE4Adult; Parkinson's Exercise Program; and Cancer Recovery and Fitness. The programs are faculty-led; thus, students will be working alongside their peers and faculty while developing important clinical skills. Students can also seek internship opportunities in hospitals/clinics and earn credit for this through their capstone coursework. Currently, the department holds affiliation agreements with many hospitals and clinics in the Eau Claire area and regionally in western Wisconsin and eastern Minnesota. The department also holds affiliation agreements with select hospitals and clinics around the U.S for those students interested in looking outside the region for their capstone experience.

Student Learning Outcomes and Program Objectives

A major strength of the M.S. in Exercise Physiology will be its broad-based foundation in the science, and application of exercise physiology principles to a wide range of clinical populations. The program is designed to provide foundational coursework and experiential learning to prepare students for work in preventative health and wellness programs; medically-based fitness and secondary prevention programs; cardiac rehabilitation; other clinically related areas (e.g., aging, diabetes management, cancer recovery, weight management, etc.); and preventative and rehabilitation programs/services for individuals with disabilities. Beyond the traditional avenues of employment, this degree will be especially relevant for those students who elect to seek positions in clinical, university, or industry-based research laboratories, or to use this degree as a preparatory option for application to advanced professional degree programs (e.g., physical therapy, occupational therapy, physician assistant, medical school, etc.). The rigor of this program will also prepare students to enter research-based doctoral degree programs.

At the completion of the M.S. in Exercise Physiology program, students will:

1. Contribute to the development of knowledge about exercise physiology by conducting independent research.
2. Demonstrate a scientific, evidence-based foundation of knowledge regarding chronic disease, chronic conditions, and various disabilities (i.e. WHO/ADA definition of disability) as they occur across the lifespan and as they relate to desired outcomes of health, functional capacity, independence, and quality of life.
3. Utilize laboratory and field-based assessment competencies and data interpretation skills to address the consequences of poor overall health, physical function, cardiometabolic health, and fitness, and how this information can be utilized to build a prescription for achieving desired health outcomes.
4. Use theoretical and practical knowledge to design therapeutic exercise programs utilizing assessment data to enhance health, fitness, function, and quality of life of individuals from clinical populations.
5. Understand the significant role social determinants of health play in the current state of health, disease, and disability in the U.S. and identify solutions to address issues of health equity/disparity in their future profession.

Program Requirements and Curriculum

At the time of admission to the M.S. in Exercise Physiology program, a student must have a Bachelor of Science or Bachelor of Arts degree from an accredited institution. Students seeking admission to the graduate program must have a cumulative 3.00 GPA in their undergraduate major and have completed the following courses in their undergraduate programs: general chemistry, anatomy, and physiology (two semesters), exercise physiology, statistics, general physics, and biomechanics. Exercise prescription/program design and exercise testing or laboratory procedures are additional prerequisite courses which are preferred but not required. Screening for these requirements will be completed via undergraduate transcript review during time of

application. No GRE will be required for admission to the program. Additionally, international students will need to achieve a total TOEFL score of 76 or a Duolingo score of 110 with the requirement to take three credits of ESL 305: Advanced Academic Writing (pending university approval).

Table 2 shows the program curriculum for the proposed program. The program requirements are comprised of 36 credits, of which 30-33 credits are required and 3-6 credits are chosen as elective credits. The range of required and elective credits within the graduate program is dependent upon the final capstone experience chosen by the student. The minimum number of credits to complete the degree is 36.

Table 2: M.S. in Exercise Physiology Program Curriculum

Program Prerequisites: General Chemistry I with lab; Human Anatomy and Physiology I; Human Anatomy and Physiology II; Exercise Physiology; Statistics; General Physics; Biomechanical Kinesiology

Exercise Physiology Core (30-33 cr):

KINS 546 Academic Apprenticeship in Kinesiology	3 credits
KINS 791 Evidence Based Practice & Research I	3 credits
KINS 792 Evidence Based Practice & Research II	2 credits
KINS 7XX Exercise Physiology Laboratory Procedures	4 credits
KINS 664 Clinical Exercise Physiology	3 credits
KINS 7XX Advanced Exercise Physiology	3 credits
KINS 7XX Clinical Practicum in Exercise Physiology	6 credits
KINS 7XX Graduate Seminar	3 credits
KINS 797 Independent Study or KINS 7XX Exercise Physiology Internship or KINS 799 Thesis	3 or 6 credits

Exercise Physiology Course Electives (3-6 cr):

KINS 645 Basic Electrocardiography	3 credits
KINS 684 Adapted Physical Activity	3 credits
KINS 687 Assessment in Adapted Physical Education	3 credits
KINS 7XX Aging and Gerontology	3 credits
KINS 7XX Cardiopulmonary Physiology	3 credits
KINS 650 Applied Nutrition in Kinesiology	3 credits
KINS 557 Essentials of Strength and Conditioning	3 credits
KINS 512 Psychology of Sports and Physical Activity	3 credits
KINS 763 Pharmacological Agents in Health Care	1 credit
KINS 591 Special Topics	1-3 credits

Total credits	36 credits
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Assessment of Outcomes and Objectives

The M.S. in Exercise Physiology curriculum will be assessed through methods already in place within the department and university. Prior to implementation, the program will develop its initial seven-year assessment plan to outline how learning in all program outcomes will be assessed at least twice in the seven-year cycle, concluding in its first academic program review. Each year the program will gather data on outcomes, analyze results, identify changes that can be made to enhance learning, and report those activities in an annual program assessment report. The program assessment plan will be reviewed by the University Assessment Committee. Annual reports will also be reviewed by the committee on a rotating basis. The UW-Eau Claire university assessment office coordinates efforts for consistent program review across all units in the university. Currently, the department has a curriculum assessment plan for all majors, which will include the exercise physiology program following final approval. The results of the assessment will be disseminated to department faculty and staff and be used as part of the curricular revision process.

Diversity

The teaching and discussion of issues surrounding health disparity/health equity are currently embedded in the department's undergraduate curriculum, especially as they pertain to understanding the role of social determinants of health (SDOH). In the graduate program, students will be asked to reflect more deeply on SDOH (race, ethnic background/culture, socioeconomic status, education level attained, sex, age, and especially geographical location) within courses that directly deal with topics of chronic disease and disability and how therapeutic exercise can help those conditions. Through these courses, they will also develop an understanding of their role and responsibility as a future healthcare provider and how they can minimize the impact of these issues on all their future patients and clients. Graduate students will practice their knowledge and gain hands-on experience within the department outreach programs that serve a diverse group of individuals such as those with a variety of disabilities and chronic conditions and learn practical ways to address SDOH factors to improve the health and well-being of their clients.

The experiential learning embedded in the curriculum provides students with an opportunity to work with clinical populations across the lifespan and in multiple settings (e.g., clinical, inpatient/outpatient, community-based, public/private, rural, and urban). These efforts will enrich the professional and personal development of students through interactions with diverse populations to better prepare them for careers. The program will be intentional about identifying practitioner and clinical sites from multiple settings (e.g., clinical, inpatient/outpatient, community-based, public/private, rural, and urban). Moreover, the curriculum leads students to an understanding of how systems of power contribute to health care disparities and how those disparities can be reduced.

The proposed graduate program will require engagement in five, community-based outreach programs delivered through the department. Students will provide leadership and serve in a clinician role interacting with various clinical populations to which they would otherwise not have exposure. The inclusive programs are Cancer Recovery and Fitness program (cancer survivors), Community Fitness Program (middle-aged to older adults), PRIDE and PRIDE4Adults (children and adults with disabilities), and the newly established Parkinson's Exercise program. Additionally, internship experiences will be available through existing partnerships with local health care systems (i.e., Mayo, Marshfield, HSHS, Prevea, Oakleaf). Specific efforts will be made to take advantage of the research agreement between UW-Eau Claire and Mayo Clinic Health System, the third of its kind in the U.S. The varied exposure to clinical populations and diverse settings will require students to utilize knowledge, skills, and abilities developed in the graduate program to be better prepared to serve the needs of current and future clients.

The faculty in the graduate program will intentionally pursue equitable approaches to student recruitment, access, retention, and degree completion. Faculty will work collaboratively with the institutional graduate studies office and other entities to ensure guidelines are followed and that additional resources are utilized as it relates to marketing, outreach, and financial aid procurement. Strategies to implement and areas of consideration will be explored from resources such as: "Faculty diversity and student success go hand in hand, so why are university faculties so white?"²; "How to (and how not to) recruit minority students"³; "Getting minority graduate students may not be easy"⁴; "FAEB Leadership Engagement and Appreciation of Differences (LEAD)"⁵; ACSM's Leadership & Diversity Training program;⁶ or through potential partnerships with Historical Black Colleges and Universities. The existing faculty that will comprise most of the instructional load for the proposed graduate program includes both African American and Japanese faculty. The recruitment and hiring of new staff will follow guidelines set forth by the institutional Affirmative Action office while also considering best practice strategies

² Bitar, J., Montague, G., & Ilano, L. (2022). *Faculty Diversity and Student Success Go Hand in Hand, So Why Are University Faculties So White?* The Education Trust. <https://edtrust.org/resource/faculty-diversity-and-student-success-go-hand-in-hand-so-why-are-university-faculties-so-white/>

³ Jaschik, S. (2022). *How to (and how not to) recruit minority students*. Inside Higher Ed. <https://www.insidehighered.com/admissions/article/2022/09/26/how-colleges-can-better-recruit-minority-students>

⁴ Jaschik, S. (2021). *Getting minority graduate students may not be easy*. Inside Higher Ed. <https://www.insidehighered.com/admissions/article/2021/09/20/search-minority-graduate-students-may-not-be-easy>

⁵ FAEB Leadership Engagement and Appreciation of Differences (LEAD). (2022). <https://fasebdiversity.secure-platform.com/a/page/lead1/lead>

⁶ Bustamante, E. E., Sawyer, C., Brown, M. D., Suman, O. E., & Keith, N. R. (2019). The American College of Sports Medicine (ACSM) Leadership and Diversity Training Program (LDTP): Harnessing Mentorship to Diversify Organizational Leadership. *Journal of Best Practices in Health Professions Diversity*, 12(2), 165–180. <https://www.jstor.org/stable/26954207>

highlighted in “The challenges of recruiting and retaining diverse faculty and administrators”⁷ and “Diversity and inclusion in faculty recruitment: best practices checklist.”⁸ The program will be intentional about identifying practical and clinical sites from multiple settings (e.g., clinical, inpatient/outpatient, community-based, public/private, rural, and urban).

Collaborative Nature of the Program

Students in the M.S. in Exercise Physiology will have the opportunity to collaborate on research projects, including through the Mayo Clinic Health System research collaboration. In addition, Exercise Physiology will be part of ongoing initiatives at UW-Eau Claire to increase interdisciplinary collaboration among health science focused departments in areas such as curriculum development, research, and service while working to provide advising and clinical learning experiences for students in these select departments. Agencies in the area including Mayo Clinic Health System sites, Marshfield Clinic, Sacred Heart and St. Joseph’s hospitals, and other outpatient rehabilitation clinics will serve as placement sites for students to gain experience working with a wide range of clientele. In addition, it is anticipated that the partnership between Mayo Clinic Health System and UW-Eau Claire will allow the inclusion of select clinicians as adjunct faculty to deliver content and provide clinical expertise and oversight within the graduate program.

Projected Time to Degree

Students who are enrolled full-time, will be able to complete the 36-credit program within two years. This program will be offered as a 4+1 option for UW-Eau Claire students so that students can receive both their undergraduate and graduate degree in five years. Prerequisite courses will be taken prior to acceptance into the graduate program. M.S. in Exercise Physiology courses will be offered in fall and spring semesters, with some courses offered in both, with additional elective courses offered in the winterim and summer terms.

Program Review

Review of this program will take place in conjunction with the review of the Department of Kinesiology as part of the established seven-year program review process at UW-Eau Claire. The process includes a departmental self-study, a review by an internal review committee comprised of faculty at UW-Eau Claire who reside outside of the department, and a review by an appointed external evaluator who also participates in a site visit. The perspectives and recommendations for improvement from these reviewers

⁷ Lederman, D. (2020). The challenges of recruiting and retaining diverse faculty and administrators. Inside Higher Ed. <https://www.insidehighered.com/content/challenges-recruiting-and-retaining-diverse-faculty-and-administrators>

⁸ Interfolio. Diversity and inclusion in faculty recruitment: best practices checklist. (2017). <https://www.interfolio.com/resources/research/best-practices-checklist-faculty-diversity-inclusive-excellence/>

are forwarded to the university Academic Policies Committee and Office of the Provost for review and comment. The proposed M.S. in Exercise Physiology program will be included in the department's next program review cycle (2026-2027 academic year).

Accreditation

Currently, it is not a requirement for individuals entering the field of exercise physiology or seeking a specialty certification to graduate from an accredited program. However, by August 2027, the American College of Sports Medicine (ACSM) will require candidates seeking certification as an Exercise Physiologist (ACSM-EP) or Clinical Exercise Physiologist (ACSM-CEP) to have a baccalaureate or master's degree from a Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredited program.⁹ It is anticipated that graduates of the M.S. in Exercise Physiology program will be interested in obtaining one of these certifications prior to entering the job market. Thus, the department will pursue accreditation through CAAHEP for the graduate program. This degree would require no additional authorization from HLC.

JUSTIFICATION

Rationale and Relation to Mission

The M.S. in Exercise Physiology program will contribute directly to the mission of the UW System by developing future professionals with "...heightened intellectual, cultural and humane sensitivities, scientific, professional, and technological expertise..." who will serve and improve the health and well-being of individuals in their communities.¹⁰ Additionally, the program exists to "...discover and disseminate knowledge, to extend knowledge and its application beyond the boundaries of its campuses..." through research conducted by faculty and students leading to discoveries that serve the residents of Wisconsin. The UW-Eau Claire mission states, "We foster in one another creativity, critical insight, empathy, and intellectual courage..." through "...strong and distinctive professional and graduate programs...exemplary student-faculty research and scholarship that enhances teaching and learning...educational opportunities responsive to the needs of our communities, state, region and beyond...."¹¹ The proposed M.S. in Exercise Physiology program supports the mission of UW-Eau Claire by adding a distinctive graduate program built on a framework of service to populations traditionally underserved in both the Eau Claire community and rural areas (health equity) and training students in aspects of therapeutic exercise application for preventative health, chronic disease, and disability management.

⁹ American College of Sports Medicine. (2020). Updated ACSM-EP and ACSM-CEP certification requirements and accreditation. <https://www.acsm.org/certification/get-certified/clinical-exercise-physiologist>

¹⁰ UW System mission statement.

https://www.wisconsin.edu/regents/download/policy_attachment/All-Mission-Statements.pdf

¹¹ UW-Eau Claire mission statement. (2023). <https://www.uwec.edu/acadaff/university-mission/>

The program will also build on currently existing strengths in student-faculty research within the department and further develop research collaborations with entities focused on improving health and well-being in the community.

The proposed program at UW-Eau Claire supports major themes in the university's strategic plan. These major themes are distinguishing UW-Eau Claire teaching and learning experiences using experiential learning; expanding student engagement through work in the community; and developing innovative graduate programs that build on existing strengths and meet regional needs.¹² Central to this strategic plan is the commitment to serve students through meaningful engagement in their academic experience.

The main factor that prompted the development of the M.S. in Exercise Physiology program was its inclusion in the \$9.4 million Wisconsin Economic Development Corporation Workforce Innovation Grant awarded to UW-Eau Claire in 2021. The graduate program is centered within the portion of the grant that involves the development of new degree programs in high-demand health care fields with the goal of developing professionals to improve rural health and well-being.¹³ Support for the program has been expressed by colleagues from the Mayo Clinic Health System in Eau Claire.

University Program Array

The program will be housed within the Department of Kinesiology and complement the M.S. in Athletic Training program with shared faculty expertise, facilities, and program support. Both programs focus on health care and align with 2025 Strategic Plan goals for developing national distinction in health and human well-being; addressing the broader needs of the region and state; and building on strengths of the undergraduate programs. Two department undergraduate programs, rehabilitation science and exercise science, would serve as preparatory degrees for students applying to the graduate program. The program will expand the array of graduate programs currently offered in the College of Education and Human Sciences (M.S. in Communication Sciences and Disorders and Master of Education (M.Ed.) in Professional Development) and university overall.

Other Programs in the University of Wisconsin System

Within the UW system, there are related graduate programs that offer a traditional model of instructional delivery (e.g., UW-La Crosse, UW-Madison, UW-Milwaukee, and UW-River Falls), and one that offers online delivery (e.g., UW-Whitewater). The programs at UW-La Crosse and UW-River Falls focus on clinical exercise physiology in preparation for the cardiac rehabilitation profession. The remaining three programs offer a graduate program in applied exercise science, kinesiology, and applied kinesiology (online). These programs

¹² 2025 UW-Eau Claire Academic Strategic Plan. (2022). <https://www.uwec.edu/acadaff/academic-strategic-plan/>

¹³ WEDC Workforce Innovation Grant. (2022). <https://www.uwec.edu/news/news/collaboration-at-the-heart-of-uw-eau-claire-s-9-4-million-workforce-innovation-grant-4966/>

have certain aspects that focus on sport, fitness, and basic physiology with some application of exercise to clinical populations. The UW-Eau Claire proposed M.S. in Exercise Physiology program would be the only graduate program that combines both features of clinical and applied exercise physiology; is offered in person at a comprehensive institution; includes multiple, practical experiences on campus with clinical populations under the supervision of program faculty; and is grounded in principles of health equity across the lifespan.

Need as Suggested by Current Student Demand

Over the last several years, the Department of Kinesiology has tracked students who have transitioned into both professional and graduate programs at the regional level (e.g., UW-Madison, UW-River Falls, UW-La Crosse, Concordia University Wisconsin, University of Minnesota, College of St. Scholastica, etc.) and national level (e.g., programs in NC, TX, FL, CO, OR, WA, IA, etc.). Most of these students have come from the rehabilitation science undergraduate major, which is a program suited to prepare students for entering professional and graduate programs. Combined with the undergraduate exercise science major (the other potential feeder program), the department has a population of over 500 students from which to draw for the proposed M.S. in Exercise Physiology graduate program. With the program in place, the department would be able to retain a portion of these students who are leaving the university, the UW System, or the state in some cases. Through personal conversations over the last year, students have expressed interest in pursuing a graduate degree in the department if one existed in this content area and in remaining at UW-Eau Claire. Thus, the program could attract those students who enjoy working with the faculty, providing further service to the clinical outreach programs; continuing research they started as undergraduate students; or developing a new study along a different line of interest.

Another subset of students this program could capture is the increasing number of students electing to take a “gap year” between undergraduate and graduate degrees. Students often use this time to plan next steps in their career; figure out to which graduate programs to apply; work on a second application to graduate programs due to initial denial of acceptance; or finish prerequisite courses for graduate programs. It is possible students may choose to apply to the M.S. in Exercise Physiology program for additional training before professional school or a new path before a final career decision is made.

Another feature for students at UW-Eau Claire is the 4+1 delivery option that would help speed time to degree while still welcoming students from other institutions seeking a traditional graduate timeline. The uniqueness of the program, a combined clinical and applied exercise physiology focus with hands-on experience working on campus, should partially drive demand for enrollment. The knowledge, skills, and abilities from the program will meet the expected job demands of the market for professionals trained more broadly to work with a variety of clinical and apparently healthy populations. Together, these factors will provide a sustained demand for the proposed graduate program.

Need as Suggested by Market Demand

According to the CAAHEP, the profession of exercise physiology includes both clinical exercise physiology and applied exercise physiology.¹⁴ Applied exercise physiologists assess, design, and implement exercise and fitness programs (individual and group) for both apparently healthy individuals and those who are at risk for or have controlled chronic disease or disabilities. Clinical exercise physiologists assess, design, implement and supervise therapeutic exercise programs for individuals with chronic disease and/or chronic conditions and disability.¹⁵ Both professionals utilize physical activity and behavioral interventions that are grounded in scientific rationale to improve the physical function, fitness, and health of their individual clients.

The M.S. in Exercise Physiology program would meet growing demand for exercise physiologists in Wisconsin and nationwide. The Bureau of Labor Statistics projects exercise physiologist employment to grow 13% from 2020 to 2030, faster than the average for all occupations.¹⁶ Wisconsin is listed in the top five states with the highest concentration of jobs (300) and location quotient (2.23) for exercise physiologists with an annual mean wage of \$55,980.¹⁷ According to the Clinical Exercise Physiologist Association (CEPA) survey in 2020, individuals with a master's degree and professional certification began careers at a higher median salary compared to those with a bachelor's degree.¹⁸ The gap in salary between bachelor's and master's prepared exercise physiologists also increased as years of experience were gained.¹⁹ Most exercise physiologists practicing in the U.S. have earned a master's degree (58%), which, according to Berry and colleagues, has functionally become the terminal degree for the profession.²⁰ This is consistent with the growing demand for specialized knowledge and training for working in the field and for earning additional credentials such as certification.

¹⁴ Commission on Accreditation of Allied Health Education Programs. (2017). Standards and Guidelines for the Accreditation of Educational Programs in Exercise Physiology. <https://www.caahep.org/committees-on-accreditation/exercise-science>

¹⁵ Clinical Exercise Physiology Association. (2022). What is a Clinical Exercise Physiologist? <https://www.exerciseismedicine.org/wp-content/uploads/2021/02/WhatisaCEP20121119.pdf>

¹⁶ U.S. Bureau of Labor Statistics. (2022). Occupational Outlook Handbook: Exercise Physiologists. <https://www.bls.gov/ooh/healthcare/exercise-physiologists.htm>

¹⁷ U.S. Bureau of Labor Statistics. (2021). Occupational Employment and Wages: 29-1128 Exercise Physiologists. <https://www.bls.gov/oes/current/oes291128.htm#ind>

¹⁸ Hargens, T., Richardson, L., Brawner, C., Perry, D., Verrill, D., Porcari, J., & Kerrigan, D. (2022). CEPA 2020 Clinical Exercise Physiology Practice Survey. <https://www.acsm-cepa.org>

¹⁹ Berry, R., Neric, F., & Dwyer, G. (2020). The State of Clinical Exercise Physiology in the U.S. *Journal of Clinical Exercise Physiology*, 9(4), 148–154.

²⁰ Ibid.

About 1,700 openings for exercise physiologists are projected each year, on average, over the decade with an employment change of 1,900.²¹ Many of these openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as retiring. Demand for these workers may also rise because of health care providers emphasizing supervised exercise therapy and preventive care to manage cardiovascular, pulmonary, metabolic, neurological, and other chronic conditions and for those with either developmental or acquired disability across the lifespan. In addition, the need for exercise professionals to work with older adult populations is going to continue to grow along with the aging of America. With a significant rise in the number of U.S. adults over the age of 65 projected from now (54.1 million) until 2060 (94.7 million), a focus on maintaining functional abilities and independent living, along with reducing the impact of chronic disease and disability, can reduce the burden of health care costs in the state (~18% of Wisconsin residents are 65 or older) and nationwide.²² Lastly, disease prevention strategies utilizing exercise and related options to improve overall public and employee health and wellness will continue to be utilized and exercise physiologists will be well suited to perform in these roles.²³

²¹ U.S. Bureau of Labor Statistics. (2022). Occupational Outlook Handbook: Exercise Physiologists. <https://www.bls.gov/ooh/healthcare/exercise-physiologists.htm>

²² United States Department of Health and Human Services Administration for Community Living. (2020). 2020 Profile of Older Americans <https://acl.gov/aging-and-disability-in-america/data-and-research/profile-older-americans>

²³ Corporate Wellness Magazine.com. (2023). Top 5 health trends for worksite wellness that are yielding companies major rewards. <https://www.corporatewellnessmagazine.com/article/worksite-wellness-trends>

University of Wisconsin - Eau Claire						
Cost and Revenue Projections For Master's in Exercise Physiology Program						
	Items	Projections				
		2024-5	2025-6	2026-7	2027-8	2028-9
		Year 1	Year 2	Year 3	Year 4	Year 5
I	Enrollment (New Student) Headcount	8	12	15	20	20
	Enrollment (Continuing Student) Headcount	0	7	11	14	19
	Enrollment (New Student) FTE	8	12	15	20	20
	Enrollment (Continuing Student) FTE	0	7	11	14	19
II	Total New Credit Hours	18	36	36	36	36
	Existing Credit Hours					
III	FTE of New Faculty/Instructional Staff	1	1.5	2	2	2
	FTE of Current Fac/IAS					
	FTE of Non-Departmental Faculty					
	FTE of New Admin Staff	0.5	0.5	0.5	0.5	0.5
	FTE Current Admin Staff					
IV	Revenues					
	<i>From Tuition</i>	\$79,200	\$188,100	\$257,400	\$336,600	\$386,100
	<i>From Fees*</i>					
	<i>Program Revenue (Grants)</i>	\$119,762				
	<i>Program Revenue - Other</i>		\$39,548	\$3,792		
	<i>GPR (re)allocation</i>			\$28,722		
	Total New Revenue	\$198,962	\$227,648	\$289,914	\$336,600	\$386,100
V	Expenses					
	Salaries plus Fringes					
	<i>Faculty/Instructional Staff</i>	\$122,622	\$183,527	\$244,628	\$254,413	\$264,589
	<i>Other Staff</i>	\$28,000	\$29,120	\$30,285	\$31,496	\$32,756
	Other Expenses					
	<i>Equipment</i>	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
	<i>Recruitment/Marketing</i>		\$10,000	\$10,000	\$10,000	\$10,000
	Total Expenses	\$155,622	\$227,647	\$289,913	\$300,909	\$312,345
VI	Net Revenue	\$43,340	\$1	\$1	\$35,691	\$73,755

Submit budget narrative in MS Word Format

Provost's Signature:

Date:

Chief Business Officer's Signature:

Date:

COST AND REVENUE PROJECTIONS NARRATIVE UNIVERSITY OF WISCONSIN-EAU CLAIRE MASTER OF SCIENCE IN EXERCISE PHYSIOLOGY

Introduction

The Master of Science in Exercise Physiology program (36 credits) will provide foundational coursework and clinical experiences to prepare students for work in preventative health programs, medically-based fitness programs, cardiac rehabilitation and other clinically related areas (e.g., aging, diabetes management, cancer recovery, etc.), and rehabilitation programs for individuals with disabilities. Additionally, this program will prepare students for positions in clinical, university, or industry-based research laboratories, and as a preparatory option for application to advanced professional degree programs. The program will also contribute to the array of graduate programs currently offered in the College of Education and Human Sciences at UW-Eau Claire. The M.S. in Exercise Physiology would build on that reputation and meet growing demand for exercise physiologists. The program will follow a cost-recovery model and will use service-based pricing of \$550 per credit hour.

Section I – Enrollment

When fully implemented, the program will admit 20 students per year as a cohort. We anticipate a first-year enrollment of eight students, followed by enrollments of 12 in Year 2 and 15 in Year 3 before enrolling a full cohort in Year 4. Attrition of one student per cohort is assumed. Since this is a new graduate program, all the students will be new students; no existing students will be changing their course of study to this program. UW-Eau Claire assumes students will enroll full-time in the program. Therefore, headcount and FTE are the same.

Section II – Credit Hours

This will be a typical 36 credit master's degree. While it will share some courses with the Master of Science in Athletic Training program, when both programs are fully subscribed, multiple sections of those courses will be needed. Therefore, UW-Eau Claire needs to plan for 36 new credits of instruction for this program.

Section III – Faculty and Staff Appointments

The program will require 2.0 FTE faculty to fully implement and sustain the program. One of those FTE will be a new graduate program director. The other 1.0 FTE will come either from continuing faculty/instructional staff with current appointments or a new position, depending on enrollment in our current programs within the kinesiology department. When fully implemented, the program will support the salary and fringe for the 2.0 FTE. We will need 1.0 FTE to staff the program in the first year; 1.5 FTE to staff in the second year; and 2.0 FTE beginning in the third year.

The program will require a half-time administrative support person to assist with marketing, recruitment, and admission activities as well as with clinical placement processes.

Section IV – Program Revenues

Tuition Revenues

This program will operate on a cost-recovery basis. The program is receiving seed money from the WEDC grant to pay the program director and provide marketing through AY 2024-25.

Tuition Revenues:

Proposed service-based pricing for this graduate program is at a rate similar to competitive programs. The proposed rate is \$550/credit hour. Tuition estimates follow this formula: \$550/credit hour x 18 credits per year x # of students = tuition estimates.

Program/Course Fees:

Students will be charged graduate level segregated fees of \$82.86 per credit to the university; those fees are not included in this model because those fees go to fund items not listed on this budget.

Grants/Extramural Funding:

The WEDC Workforce Innovation Grant will provide \$119,762 to support the start-up of new programs to meet regional workforce needs. This funds the program director for the first year of the program.

Program Revenue (PR):

First year program revenue of \$31,083 will be applied to the deficit for the second year of the program. The remainder of the first-year program revenue of \$12,257 will be applied to the deficit for the third year of the program.

General Program Revenue (GPR) (re)allocation:

The university has allocated \$28,722 in Year 3 from GPR to support the M.S. in Exercise Physiology as it builds enrollment to become self-sustaining.

Section V – Program Expenses

Salary and Fringe Expenses

The program will provide support for the 2.0 FTE when fully implemented. Beginning in Year 1, the program director will be paid with a salary of \$80,437 for the academic year; the budget assumes a 4% raise each year and a fringe rate of 40%. The program director will also be paid for 40% for two months in the summer as work with the programs warrants.

Beginning in Year 2, the program will provide support for a 0.5 FTE second faculty member to provide enough FTE for the first year and second year cohort. This position is at \$80,000/academic year with an assumed 4% raise and a fringe rate of 40%. Beginning in Year 3, the program will provide full support for 2.0 FTE.

The program will require .5 FTE in administrative support at an annual salary of \$40,000 with an anticipated raise of 4% per year. The chart outlines all personnel costs for the first five years of the program.

Year		1	2	3	4	5
Program Year	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
Instruction & Administrative Personnel						
Faculty Position (1 FTE): Program Director	\$ 69,949	\$ 80,437	\$ 83,654	\$ 87,001	\$ 90,481	\$ 94,100
Faculty Position (1 FTE)			\$ 40,000	\$ 80,000	\$ 83,200	\$ 86,528
Summer program director	\$ 6,218	\$ 7,150	\$ 7,436	\$ 7,733	\$ 8,043	\$ 8,364
Administrative Support		\$ 20,000	\$ 20,800	\$ 21,632	\$ 22,497	\$ 23,397
SALARY SUBTOTAL	\$ 76,167	\$ 107,587	\$ 151,890	\$ 196,366	\$ 204,221	\$ 212,390
Fringe	\$ 30,467	\$ 43,035	\$ 60,756	\$ 78,546	\$ 81,688	\$ 84,956
TOTAL SALARIES	\$ 106,633	\$ 150,622	\$ 212,647	\$ 274,912	\$ 285,909	\$ 297,345

Other Expenses

There are two areas of other expenses for the program. First, UW-Eau Claire allocated \$5,000/year for equipment. This will be sufficient, in conjunction with other funds within the department, for equipment shared across programs. Similarly, \$10,000/year is allocated for marketing the program. Pooled resources from multiple graduate programs will provide sufficient budget for graduate marketing activities.

Section VI – Net Revenue

The WEDC grant will allow the program to be self-sustaining in the first year. In the second year, internal reallocation of \$28,722 will provide a bridge allowing enrollments to build until the programming is again self-sustaining by the conclusion of the third year. Once there is positive net revenue, the program revenue will be distributed to the Chancellor's Division, Academic Affairs, and the Dean's office to cover indirect and direct overhead costs such as student support services, financial aid, facilities and campus resources, and administrative costs. Additional revenue will then be used to reinvest in new programs and initiatives across the university.



University of Wisconsin-Eau Claire

105 Garfield Avenue • P.O. Box 4004 • Eau Claire, WI 54702-4004

May 11, 2023

Jay Rothman, President
University of Wisconsin System
1720 Van Hise Hall
1220 Linden Drive
Madison, WI 53706-1559

Dear President Rothman:

I am submitting this letter and associated materials in support of the University of Wisconsin-Eau Claire's (UW-Eau Claire's) proposed Master of Science (M.S.) in Exercise Physiology program for review, consideration, and approval by University of Wisconsin System Administration and the University of Wisconsin System Board of Regents.

As outlined in the authorization document, the M.S. in Exercise Physiology is designed to prepare students for work in preventative health programs, medically-based fitness programs, cardiac rehabilitation and other clinically related areas, and in rehabilitation programs for individuals with disabilities. It will also prepare students for positions in clinical, university, or industry-based research labs and for admission to advanced professional degree programs. This degree will provide a broad-based foundation in the science and application of exercise physiology principles to a wide range of clinical populations, thus creating graduates with the knowledge and skills to advance the health of individuals across the state and region. The program will be offered in a fully face-to-face format.

The program has been designed to meet the university's definition and high standards for delivering a quality master's degree program. This program builds on and advances the development of an array of health and wellness-related graduate programs at UW-Eau Claire, including nursing, communication sciences and disorders, athletic training, and school psychology, a health care management emphasis in the MBA, and a public health program (pending June Board of Regents approval). This constellation of programs allows UW-Eau Claire to help meet the health and wellness needs of the state and region.

Students in the M.S. in Exercise Physiology program will complete 36 credits of coursework designed to assist them in meeting learning outcomes including the ability to conduct independent research, acquire evidence-based knowledge of disease, use research skills to identify practices to improve health outcomes, design therapeutic exercise programs, and understand the role of social determinants of health. In addition to coursework, students will complete a capstone requirement (thesis, scholarly research paper, or internship) aligned with their professional goals. Students will collaborate with faculty on both research and clinical practice, including through UW-Eau Claire's Mayo Clinic Health System research

Excellence. Our measure, our motto, our goal.

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collaboration. The Department of Kinesiology currently offers experiential learning opportunities through a range of outreach programs. Students in the M.S. in Exercise Physiology will work with a variety of clinical populations through the following existing programs: Community Fitness Program, PRIDE (Physical activity and Recreation for Individuals with Disabilities in the Eau Claire area), PRIDE4Adults, Parkinson's Exercise Program, and Cancer Recovery and Fitness. A full-time graduate student can complete the program in four semesters and one summer session. Part-time enrollment will also be allowed.

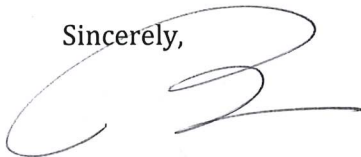
After reviewing the proposal, I am confident projected enrollment will align with available resources to support the program. A \$9.4 million grant from the Wisconsin Economic Development Corporation provided start-up funding, including funding to add 1.0 FTE as a director for the program through 2025. As a service-based program, tuition revenue will provide future funding for this position and others needed as program enrollment expands. Highly qualified faculty currently working in the Department of Kinesiology will also provide coursework in the program.

The proposed program was approved through UW-Eau Claire's shared governance program approval process on May 2, 2023. All programs at the University are subject to an in-depth review every seven years. Assessment of student learning on program outcomes will be conducted each year in keeping with standard UW-Eau Claire practice. Student retention, time-to-graduation, and graduation rates will be monitored as part of program review and in decisions about allocation of instructional positions.

In closing, I enthusiastically support the proposal for a Master of Science in Exercise Physiology and look forward to UW System Administration and UW System Board of Regents' granting UW-Eau Claire the authority to offer this degree.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in dark ink, appearing to read 'PKleine', written over a horizontal line.

Patricia A. Kleine
Provost and Vice Chancellor for Academic Affairs

cc: Tracy Davidson, Associate Vice President for Academic Planning and Faculty Advancement

**NEW PROGRAM AUTHORIZATION (IMPLEMENTATION)
BACHELOR OF SCIENCE IN AUTOMATION ENGINEERING,
UW OSHKOSH**

REQUESTED ACTION

Adoption of Resolution C.3., authorizing the implementation of the Bachelor of Science in Automation Engineering program at the University of Wisconsin Oshkosh.

Resolution C.3. That, upon the recommendation of the Chancellor of the University of Wisconsin Oshkosh and the President of the University of Wisconsin System, the Chancellor is authorized to implement the Bachelor of Science in Automation Engineering program at the University of Wisconsin Oshkosh.

SUMMARY

The University of Wisconsin Oshkosh (UWO) proposes to establish a Bachelor of Science (B.S.) in Automation Engineering (AE). The program will complement the university's existing engineering technology offerings and aid in research, economic development, entrepreneurship, and sustainability in Wisconsin, consistent with the mission of UWO to provide, "a high-quality liberal education to all of its students in order to prepare them to become successful leaders in an increasingly diverse and global society." The program will help the university achieve Strategic Goal A.3 of the current strategic plan: "Prepare students for today's careers, future employment and high quality of life." The program requirements consist of 129 credits, of which 44 credits meet the general education and degree requirements for the UWO College of Letters and Science. The remaining 85 credits are specific to the B.S. in AE program. The proposed curriculum will prepare graduates to enter a wide range of careers in automation engineering, with this field being in high demand in the manufacturing sector. The Bureau of Labor Statistics (BLS) does not list data for automation engineers since the field is so new. According to the BLS, the number of positions for mechanical engineers (the closest analogous occupation) will rise by 6,400 between 2021 and 2031, and the median 2021 pay for mechanical engineers was \$95,300 in 2021.¹ The Accreditation Board for Engineering and Technology (ABET) accreditation will be sought to ensure program quality.

¹ <https://www.bls.gov/ooh/architecture-and-engineering/mechanical-engineers.htm>

The tuition charged for participants in this program will be the same as for the Engineering Technology Program, standard tuition rate plus an additional \$700 per semester for full-time students to offset higher engineering faculty salaries and laboratory costs.

Presenter

- Edwin Martini, Provost and Vice Chancellor for Academic Affairs, UW Oshkosh

BACKGROUND

This proposal is presented in accord with UW System Administrative Policy 102: Policy on University of Wisconsin System Array Management: Program Planning, Delivery, Review, and Reporting (revised March 31, 2020, available at <https://www.wisconsin.edu/uw-policies/uw-system-administrative-policies/policy-on-university-of-wisconsin-system-array-management-program-planning-delivery-review-and-reporting-2/>).

Related Policies

- Regent Policy Document 4-12: Academic Program Planning, Review, and Approval in the University of Wisconsin System
- UW System Administrative Policy 102: Policy on University of Wisconsin System Array Management: Program Planning, Delivery, Review, and Reporting

ATTACHMENTS

- A) Request for Authorization to Implement
- B) Cost and Revenue Projections Worksheet
- C) Cost and Revenue Projections Narrative
- D) Provost's Letter

**REQUEST FOR AUTHORIZATION TO IMPLEMENT A
BACHELOR OF SCIENCE IN AUTOMATION ENGINEERING
AT UNIVERSITY OF WISCONSIN OSHKOSH
PREPARED BY UW OSHKOSH**

ABSTRACT

The University of Wisconsin Oshkosh (UWO) proposes to establish a Bachelor of Science (B.S.) in Automation Engineering (AE). The program will complement the university's existing engineering technology offerings and aid in research, economic development, entrepreneurship, and sustainability in Wisconsin, consistent with the mission of UWO to provide, "a high-quality liberal education to all of its students in order to prepare them to become successful leaders in an increasingly diverse and global society." The program will help the university achieve Strategic Goal A.3 of the current strategic plan: "Prepare students for today's careers, future employment and high quality of life." The program requirements consist of 129 credits, of which 44 credits meet the general education and degree requirements for UWO College of Letters and Science. The remaining 85 credits are specific to the B.S. in AE program. The proposed curriculum will prepare graduates to enter a wide range of careers in AE, with this field being in high demand in the manufacturing sector. The Bureau of Labor Statistics (BLS) does not list data for automation engineers since the field is so new. According to the BLS, the number of positions for mechanical engineers (the closest analogous occupation) will rise by 6,400 between 2021 and 2031, and the median 2021 pay for mechanical engineers was \$95,300 in 2021.¹ The Accreditation Board for Engineering and Technology (ABET) accreditation will be sought to ensure program quality. The tuition charged for participants in this program will be the same as for the Engineering Technology Program, standard tuition rate plus an additional \$700 per semester for full-time students to offset higher engineering faculty salaries and laboratory costs.

PROGRAM IDENTIFICATION

University Name

University of Wisconsin Oshkosh

¹ <https://www.bls.gov/ooh/architecture-and-engineering/mechanical-engineers.htm>

Title of Proposed Academic Degree Program

Automation Engineering

Degree Designation(s)

Bachelor of Science

Mode of Delivery

The engineering curriculum will be offered in a face-to-face delivery format.

Department or Functional Equivalent

Department of Engineering and Engineering Technology

College, School, or Functional Equivalent

College of Letters and Science

Proposed Date of Implementation

September 2024

Projected Enrollments and Graduates by Year Five

Table 1 represents enrollment and graduation projections for students entering the program over the first five years. By the end of Year 5, it is expected that 115 students will have enrolled in the program and 29 students will have graduated from the program. The average student retention rate is projected to be 90%, based on existing data for the UWO Engineering Technology majors.

Table 1: Five-Year Academic Degree Program Enrollment Projections

Students/Year	Year 1	Year 2	Year 3	Year 4	Year 5
New Students	8	25	25	25	30
Continuing Students	2	9	30	50	59
Total Enrollment	10	34	55	75	89
Graduating Students				9	20

Tuition Structure

For the 2023-24 academic year, standard residential tuition and segregated fees are projected to total \$ 4,128.95 per semester for a full-time student enrolled in 12-18 credits per semester. Of this amount, \$3,402.84 is attributable to tuition and \$726.11 is attributable to segregated fees. In addition, all students enrolled in the program will pay \$700 per semester in additional tuition to offset the higher faculty salaries found in engineering as well as costs associated with specialized laboratory equipment, software, and program resources that must be regularly maintained and updated. Nonresident tuition and segregated fees total \$8,085.83 per semester for a full-time student enrolled in

12-18 credits per semester. Of this amount, \$7,359.72 is attributable to tuition and \$726.11 is attributable to segregated fees. Additional tuition of \$700 per semester will apply.

Students will be responsible for procuring textbooks for all classes, either by purchase or rental. UWO estimates the average cost of textbooks at \$500 per semester for full-time students.

DESCRIPTION OF PROGRAM

Overview of the Program

This degree consists of a total of 129 credits. This credit total accommodates the math and science courses required by ABET in addition to the university's general education and Bachelor of Science requirements. Students will take a core liberal arts curriculum that consists of nine credits of communication (writing and speaking), 12 credits across the social science disciplines, and 12 credits across the culture and humanities disciplines. In addition, students in the AE degree program will take an additional 15 credits of math and 20 credits of science courses to build a foundation for professional engineering coursework. Together, these courses meet the requirements for UWO's University Studies (general education) Program.

The engineering major itself totals 61 credits, which includes 52 credits of foundational engineering and technology courses and nine credits of core AE courses. The breakdown of coursework is specifically designed to give students a solid theoretical foundation as well as experience in a broad spectrum of electro-mechanical engineering disciplines with a particular focus on automation.

Student Learning Outcomes and Program Objectives

Student learning outcomes for the B.S. in AE degree are two-fold. The first set of outcomes is defined by the UWO general education requirements and more specifically the degree requirements for the College of Letters and Science. Per the UWO University Studies Program, all UWO students will gain knowledge of human cultures as well as the physical and natural world "through study in fine and performing arts, humanities, mathematics and science, and social science focused by engagement with big questions, both contemporary and enduring."²

² <https://uwosh.edu/usp/about-usp/essential-learning-outcomes/>

The second set of outcomes, specifically for the AE major, are defined by ABET's Student Outcomes for engineering program accreditation.³ The list of seven outcomes are an ability to:

1. identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics;
2. apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors;
3. communicate effectively with a range of audiences;
4. recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts;
5. function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives;
6. develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions; and
7. acquire and apply new knowledge as needed, using appropriate learning strategies.

Graduates of this program will be prepared to take the National Council of Examiners for Engineering and Surveying (NCEES) Fundamentals of Engineering (FE) Exam, the first step to becoming a licensed Professional Engineer.

Program Requirements and Curriculum

There are no set requirements for admission to the degree program that are separate from admission to the university. However, the program's plan assumes that students would begin in calculus as their first math class.

Table 2 illustrates the curriculum for the proposed program. The program requirements consist of 129 credits, of which 44 credits are required to meet the general education and degree requirements for the UWO College of Letters and Science. The remaining 85 credits are specific to the AE program. Of those 85 credits, 14 are for additional supporting mathematics and general science courses, and the remaining 71 credits are taken within the UWO Department of Engineering and Engineering Technology.

³ ABET Engineering Accreditation Commission, *Criteria for Accrediting Engineering Programs*, 2022 – 2023, <https://www.abet.org/wp-content/uploads/2022/01/2022-23-EAC-Criteria.pdf>

Table 2: Bachelor of Science in Automation Engineering Program Curriculum

➤ General education courses required for graduation:	
Communication (Writing, Speaking)	9 credits
Cultural and Humanities (XC, HU, Literature)	12 credits
Social Sciences (XS, SS, History)	12 credits
➤ Program prerequisites or support courses:	
<u>Mathematics</u>	15 credits
• Math 171/172 – Calculus 1, Calculus 2	
• Math 301 – Statistics	
• Math 371 – Differential Equations	
<u>General Science</u>	20 credits
• Physics 191/192 – General Physics I/II	
• EGR 201 – Statics	
• EGR 202 – Dynamics	
• EGR 203 – Mechanics of Materials	
➤ Academic degree program or major course requirements:	
<u>Engineering & Technology</u>	49 credits
• EGR 105 – Engineering Fundamentals	
• EGR 110 – Engineering Graphics	
• EGR 130/131* – Basic Electrical Circuits I/II	
• EGR 221** – Machine Components	
• EGR 232* – Semiconductor Devices	
• EGR 242 – Programming for engineers	
• EGRT 240 – Logic & Control Devices	
• EGRT 320 – Motors and Drives	
• EGR 325** – Signals & Systems	
• EGR 330* – Thermodynamics	
• EGR 342** – Measurements Control and Data Acquisition	
• EGRT 390 – Industrial Robots/Mechatronics	
• EGR 360 – Project Management	
• EGR 400 – Capstone Project (or Internship)	
<u>Automation Engineering Core</u>	9 credits
• EGR NEW – Control Systems	
• EGR NEW – Kinematics and Dynamics of Machinery	
• EGR NEW – Automation Systems Design	
<u>Automation Engineering Major Elective</u>	3 credits
(Choose 3 credits from the following:)	
• EGRT 116 – Basic Manufacturing Processes	
• EGR 282 – Engineering Economics	
• EGRT 375 – Renewable Energy	
• EGRT 335 – Heat Transfer	
Total Credits	129 credits

Assessment of Outcomes and Objectives

Program and degree assessments will follow the requirements of the ABET accreditation process. The Engineering Technology department at UWO already has a robust assessment procedure for the Engineering Technology degrees as they relate to ABET, and this assessment will be extended to the new AE degree. In general practice, ABET accredits AE programs under General Engineering or Mechanical Engineering criteria. Assessment instruments will be developed as needed to ensure specific ABET-required student outcomes for the program:

- a) principles of engineering, basic science, and mathematics (including multivariate calculus and differential equations);
- b) applications of these topics to modeling, analysis, design, and realization of physical systems, components, or processes;
- c) coverage of both thermal and mechanical systems; and
- d) in-depth coverage of either thermal or mechanical systems.

Since ABET is the national accrediting body for engineering programs, their criteria, assessment tools, and guidelines will also be followed for the evaluation and assessment of eight General Criteria, including:

1. Students
2. Program Educational Objectives
3. Student Outcomes
4. Continuous Improvement
5. Curriculum
6. Faculty
7. Facilities
8. Institutional Support

The policies, procedures, and instruments used for each criterion in the assessment can be found in the 66-page ABET Accreditation Policy and Procedure Manual (APPM).⁴ ABET accreditation provides assurance that programs meet the quality standards for the engineering profession.

At the curricular level, ABET establishes student outcomes for each engineering discipline, and the department develops the continuous improvement process that assesses student achievement in these areas. Each student outcome is broken into several performance indicators that can be assessed in appropriate courses. Typically, performance indicators are assessed in higher-level courses after the skills and desired outcomes have been introduced at the lower level and reinforced at the intermediate level. Instructors use rubrics to evaluate various student products such as written reports, oral

⁴ <https://www.abet.org/accreditation/accreditation-criteria/accreditation-policy-and-procedure-manual-appm-2022-2023/>

presentations, examples of problem solving, capstone projects, etc. The data generated is aggregated from courses across the curriculum and compared to results from prior years and to goals set by the department in its annual assessment review. The review is shared with the advisory board and feedback is solicited.

In addition to these processes, the Faculty Senate Assessment Committee reviews academic program assessment plans, and each department reports the findings of its outcomes assessment to the Faculty Senate Assessment Committee triennially. A required element of these reports is a plan for using the results for continual improvement of student learning.

Diversity

Inclusive Excellence is highly valued at UWO and within the Department of Engineering and Engineering Technology. The faculty work to include diverse perspectives throughout the engineering and engineering technology curriculum through interdisciplinary course offerings and integrated examples in engineering content courses. The faculty believe it is necessary for engineers to understand the role of engineering in designing and building a just and inclusive world, not simply a mathematically optimized world. The assessments of criteria two and four of the ABET student outcomes assure that the program will be actively engaged in providing an inclusive learning environment.

The curriculum for the B.S. in AE degree has several components which increase inclusivity. First, there are no additional entrance requirements beyond those required by the university. Removing additional barriers provides an accessible path to an engineering degree for many students. The first two years of the program are largely foundational and assume students will not begin their studies with backgrounds in physics, or advanced mathematics, thus starting all students on an equal footing. In addition, though the 4-year plan assumes students will begin in Calculus 1, students can begin in pre-calculus without extending their degree timeline. The department is also committed to a liberal arts educational base, which fosters exploration, diversity, and inclusivity. Geographically, providing an option for AE in northeast Wisconsin offers a wide swath of students an opportunity to pursue higher education while staying close to home, which is a particular economic advantage to first-generation and low-income students.

Given the small nature of the department at UWO, students have access to a wide range of support services, one-on-one advising opportunities, student clubs and organizations, and research opportunities. The department engages with a wide range of companies in the surrounding area, including women and minority-owned businesses. Students routinely engage with these and other area employers during Advisory Board meetings, guest speaker opportunities, and site visits.

The department employs a dedicated recruitment specialist, who works to reach a wide variety of potential student populations. The university also has a robust recruitment and retention program. Students in the program will have access to services on campus such as tutoring, writing assistance, the Women's Center, and Academic Support of Inclusive Excellence (ASIE).

If enrollment targets are met and demonstrate the ability to support a new faculty hire in future years, the university is committed to inclusive faculty and staff recruitment. As stated on the UWO employment page, "Diversity drives innovation, creativity, and progress. At UWO, the culture, identities, life experiences, unique abilities, and talents of every individual contribute to the foundation of campus success. Creating and maintaining an inclusive and equitable environment is of paramount importance to us. This pursuit prepares all of us to be global citizens who will contribute to the betterment of the world. UWO is committed to a university culture that provides everyone with the opportunity to thrive."⁵

Collaborative Nature of the Program

The department will work actively to create transfer plans with area technical colleges to assist incoming students who have a background in electrical and mechanical engineering. The new program will also encourage collaboration with other departments at UWO by sharing lab and teaching facilities. The department will communicate continually with departments providing math and science background courses to ensure that seats will be available to students as needed and that the requirements of the program remain relevant as any changes are made to background courses in other departments. UW-Stout has received approval to plan a B.S. in Automation Leadership. When their program is implemented, UWO will explore opportunities for collaboration between institutions.

Projected Time to Degree

The projected time to achieve the degree is four years for a full-time student who begins their higher education career with no incoming college credits and who is calculus ready. Pre-college credit (from CAPP, dual enrollment, or Advanced Placement), particularly in math and science, could shorten the degree pathway. Students who are part-time, or who begin at a math level below pre-calculus, can expect a longer time to degree completion.

⁵ <https://uwosh.edu/hr/careers/>

Program Review

Each program at UWO is required to conduct a self-study and commission an external review as part of a program review every seven years, as outlined in the Faculty and Academic Staff Handbook. The review includes an analysis of curriculum, assessment, resources, enrollment, alumni feedback and other measures of capacity and productivity. The national ABET accreditation will be used for the external review of the program. The self-study and external program reviews are then reviewed by a college committee, the dean of the college, the faculty senate, and the provost. Each level of review provides its own comments and suggestions. UWO administration members will also review the program for adherence to university policy and standards.

Accreditation

The B.S. in AE program will be accredited by the Engineering Accreditation Commission (EAC) of ABET. The program will not require prior approval by the Higher Learning Commission.

JUSTIFICATION

Rationale and Relation to Mission

This proposal is driven by several factors. First, there are no other AE programs in northeast Wisconsin. Second, a 2021 survey commissioned by the NEW Manufacturing Alliance showed that there is a need for AE professionals in Wisconsin.⁶ The Advisory Board (a body of engineering professionals from the manufacturing sector) has confirmed this need for the UWO Department of Engineering and Engineering Technology.

The B.S. in AE at UWO will contribute directly to the mission of the UW System by expanding the offerings of professional degrees to a region of Wisconsin that is currently underserved. The UW System's mission statement includes a stated need to "extend knowledge and its application...by developing in students heightened intellectual, cultural and humane sensitivities, scientific, professional and technological expertise."⁷ In addition, the UWO mission statement states that the university prepares students to, "become successful leaders in an increasingly diverse and global society" through "innovative teaching, research, economic development, entrepreneurship and community engagement."⁸ The proposed B.S. in AE program supports the university mission by contributing to the economic development of the region and by developing professional and technical skills, to prepare students to enter the workforce as practicing engineers.

⁶ NEW Manufacturing Alliance, 2021. *Industry 4.0 Needs, Skills & Talent Survey*.
<https://newmfgalliance.org/3d-flip-book/industry-4-0-survey/>

⁷ <https://www.wisconsin.edu/about-the-uw-system/>

⁸ <https://uwosh.edu/about-uw-oshkosh/mission-vision-core-values/>

The proposed program at UWO supports major themes in the university's Strategic Plan.⁹ The program supports the theme of opportunity by adding a high-demand program to the university's array that will "ensure graduates are ready for fulfilling lives, engaged citizenship, and rewarding careers." In addition, the program supports the themes of innovation and distinction by providing an innovative new program that responds directly to the needs of the region's business community.

University Program Array

Currently, UWO offers a full suite of ABET accredited Engineering Technology Programs: Mechanical, Electrical, and Environmental. A new engineering major with a focus on AE, constructed on a foundation of existing Electrical and Mechanical Engineering Technology programs, creates synergy and perfectly complements existing programs. The department is currently implementing a new program in Biomedical Engineering. The two engineering programs will share some core science and technology courses but will provide two contrasting engineering programs to attract a broad range of student interest.

Other Programs in the University of Wisconsin System (and area)

While UW-Stout offers a B.S. in Manufacturing Engineering and an Industrial Automation concentration within their B.S. in Engineering Technology program, there is currently no B.S. in AE offered in Wisconsin. The nearest alternative is located in Houghton Michigan, where Michigan Technological University offers a Robotics Engineering program and Mechatronics emphasis.

There are at least 25 schools in the United States offering similar programs (Robotics, Automation, Mechatronics, or similar).¹⁰ The proposed structure of the program is modeled after the successfully implemented one in the University of Michigan (U of M) system. The main U of M campus in Ann Arbor offers an "Automation Engineering" major, hosted under the Bachelor of Science in Mechanical Engineering, while the University of Michigan-Dearborn campus offers a separate degree, Bachelor of Science in Engineering-Robotics Engineering.

Need as Suggested by Current Student Demand

The proposed AE program will be the only program in Northeastern Wisconsin. There are 1.3 million residents in this region, and it is recognized as a hub of manufacturing in Wisconsin. The proposed degree will fill a significant geographic and programming gap for students who wish to pursue an AE degree (the closest alternative degree being approximately 250 miles from Oshkosh and outside Wisconsin). NewEngineer.com shows

⁹ <https://uwosh.edu/strategicplan/wp-content/uploads/sites/66/2022/12/Strategic-Plan-UWO-2030-FINAL-.pdf>

¹⁰ 25 best affordable robotics, mechatronics and AE degree programs (bachelor's) 2020: <https://affordableschools.net/bachelors-robotics-mechatronics-automation-engineering>

that of the eight “Most In-Demand Engineering Jobs for 2021,”¹¹ Automation and Robotics Engineering is the second highest. To estimate enrollments, a survey of 25 universities with similar programs was conducted. In addition, feedback from the UWO Engineering Advisory Board and enrollment data from regional two and four-year campuses was utilized. The new program will attract new students to UWO as well as retain students who now leave UWO to seek engineering degrees in this field. Sustained enrollment of 80-100 AE students upon full implementation, yielding approximately 20 AE graduates per year is expected.

Need as Suggested by Market Demand

Many job portals indicate that Automation & Robotics Engineering positions are the engineering professions with the highest expected growth. Automation Engineers in America make an average salary of \$82,908 per year or \$40 per hour. The top 10% make over \$108,000 per year.¹²

According to the “2019 NEW Manufacturing Alliance: Needs, Skills, & Talent Survey,”¹³ 61% of companies surveyed plan to hire a process engineer, 56% intend to hire an industrial computer programmer, and 55% a data management analyst. All these areas are included in the AE Program. The most recent study, “Industry 4.0 Needs, Skills & Talent Survey 2021,” published by the NEW Manufacturing Alliance,¹⁴ shows that 79% (compared to 63% from the 2019 study) of local companies plan to invest in automation industry 4.0 technologies. The same study shows that automation and robotics are on the list of top skills sought by manufacturers.

The Bureau of Labor Statistics (BLS) does not list data for automation engineers since the field is so new. According to the BLS, the number of positions for mechanical engineers (the closest analogous occupation in their database) will rise by 6,400 between 2021 and 2031; due to retirements and staff turnover, the BLS projects an average of 17,900 openings per year. The BLS also notes that the median annual salary for mechanical engineers was \$95,300 in 2021.¹⁵

¹¹ Ranking: 8 of the Most In-Demand Engineering Jobs for 2021, website:

<https://newengineer.com/advice/8-of-the-most-in-demand-engineering-jobs-for-2021-1126177>

¹² What is an automation engineer: website <https://www.zippia.com/automation-engineer-jobs/>

¹³ 2019 NEW Manufacturing Alliance needs, skills and talent survey:

<https://newmfgalliance.org/media/2341/newma-needs-skills-talent-survey-results6-18-2019.pdf>

¹⁴ Industry 4.0 needs, skills, and talent survey 2021: <https://newmfgalliance.org/3d-flip-book/industry-4-0-survey/>

¹⁵ <https://www.bls.gov/ooh/architecture-and-engineering/mechanical-engineers.htm>

From the educational point of view, a new AE program addresses the needs for a revolutionary approach in engineering education indicated by experts.¹⁶ The profile of the program is aligned with current trends in the manufacturing sector, which is demanding engineering professionals with interdisciplinary knowledge in mechanical and electrical engineering and with programming skills.

The proposed AE program directly addresses a recommendation made by the UWO Engineering Advisory Board (meeting held by the UWO Department of Engineering and Engineering Technology on May 6th, 2021). The board suggested an automation program that will provide professionals for the local manufacturing job market. The ABET organization states, *"Responding to the recommendations of your advisory board members is exactly what we desire for new programs."*¹⁷ ABET certification of this new program will be a great benefit to graduating students and the staff is familiar with the necessary steps to obtain accreditation. In preparation for this proposal, 25 existing mechatronics, automation, or similarly named programs at other universities were contacted. The feedback was overwhelmingly positive. Below are several citations from received e-mail responses upon UWO's request for feedback:

- *"Our board of advisors seem to always ask- for one thing: More graduates. We are growing, with the Mechatronics Program gaining students at a 10% year over year pace." (Utah Valley University).*
- *"Our mechatronic engineering program has been a solid major (...). It's ABET accredited and a majority of our graduates have jobs when they leave. It is in relatively high demand. We have approximately 160 students in the major. For reference we have approximately 350 mechanical engineering majors. Many of our classes are offered to both mechatronic and mechanical engineering students. It's definitely worth pursuing this area." (California State University Chico).*
- *"Our program has grown to a healthy 100+ students (we are a small campus). The graduates from the program are snapped up as fast as we can graduate them. It is also important to note that SWPA (Southwestern Pennsylvania) is quite a manufacturing and robotics mecca, though my understanding is that Wisconsin is growing rapidly in that area as well. At its core, if manufacturing is coming back to the US, it is going to do so automated. I think it is definitely worth developing in that direction, especially since it sounds like you already have a significant portion of the foundational elements among the existing programs. I took a look at your Engineering Technology programs, and it is really impressive what you have been able to do since 2015." (California University of Pennsylvania).*

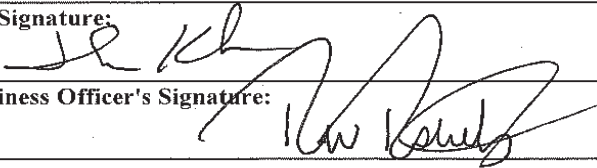
¹⁶ Sorby S., Fortenberry N. L., Bertoline G., Stuck in 1955, Engineering Education Needs a Revolution, September 13, 2021, Issues in Science and Technology, <https://issues.org/engineering-education-change-sorby-fortenberry-bertoline/>

¹⁷ from an e-mail thread with the ABET committee regarding potential accreditation of the proposed AE IAE program

University of Wisconsin - UW Oshkosh						
Cost and Revenue Projections For Newly Proposed Program - Automation Engineering						
	Items	Projections				
		2025	2026	2027	2028	2029
		Year 1	Year 2	Year 3	Year 4	Year 5
I	Enrollment (New Student) Headcount	8	25	25	25	30
	Enrollment (Continuing Student) Headcount	2	9	30	50	59
	Enrollment (New Student) FTE		25	25	25	30
	Enrollment (Continuing Student) FTE		9	30	50	59
II	Total New Credit Hours	144	450	450	450	540
	Existing Credit Hours	36	162	540	900	1062
III	FTE of New Faculty/Instructional Staff			1.5	1.5	1.5
	FTE of Current Fac/IAS	0.125	0.125			
	FTE of New Admin Staff					
	FTE Current Admin Staff	0.125	0.125	0.125	0.125	0.125
IV	Revenues					
	From Tuition	\$49,234	\$209,243	\$338,481	\$461,565	\$547,724
	From Fees					
	Program Revenue (Grants)					
	Program Revenue - Other					
	GPR (re)allocation					
	Total New Revenue	\$49,234	\$209,243	\$338,481	\$461,565	\$547,724
V	Expenses					
	Salaries plus Fringes					
	Faculty/Instructional Staff	\$15,588	\$15,899	\$174,000	\$177,480	\$181,030
	Other Staff	\$7,306	\$7,452	\$7,598	\$7,745	\$7,891
	Other Expenses					
	Facilities: Renovation of Existing Facilities		\$100,000			
	Equipment		\$60,000	\$150,000	\$60,000	
	Instructional Supply & Equipment Maintenance	\$5,000	\$5,000	\$10,000	\$10,000	\$10,000
	Marketing	\$3,000	\$3,000			
	Total Expenses	\$30,894	\$191,352	\$341,598	\$255,225	\$198,921
VI	Net Revenue	\$18,340	\$17,891	-\$3,117	\$206,340	\$348,803

Submit budget narrative in MS Word Format

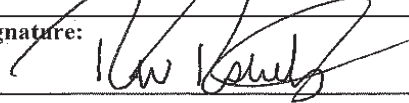
Provost's Signature:



Date:

5/30/2023

Chief Business Officer's Signature:



Date:

5/30/2023

COST AND REVENUE PROJECTIONS NARRATIVE UNIVERSITY OF WISCONSIN OSHKOSH BACHELOR OF SCIENCE IN AUTOMATION ENGINEERING

Introduction

The University of Wisconsin Oshkosh (UWO) proposes to establish a Bachelor of Science (BS) in Automation Engineering (AE). The program will complement the university's existing engineering technology offerings and aid in research, economic development, entrepreneurship, and sustainability in Wisconsin, consistent with the Mission of UWO to provide "a high-quality liberal education to all of its students in order to prepare them to become successful leaders in an increasingly diverse and global society." The program will help the university achieve Strategic Goal A.3 of the current strategic plan: "Prepare students for today's careers, future employment and high quality of life." The program requirements consist of 129 credits, of which 44 credits meet the general education and degree requirements for UWO's College of Letters and Science. The remaining 85 credits are specific to the B.S. in AE program. The proposed curriculum will prepare graduates to enter a wide range of careers in automation engineering, with this field being in high demand in the manufacturing sector. The Bureau of Labor Statistics (BLS) does not list data for automation engineers since the field is so new. According to the BLS, the number of positions for mechanical engineers (the closest analogous occupation) will rise by 6,400 between 2021 and 2031, and the median 2021 pay for mechanical engineers was \$95,300 in 2021.¹ The Accreditation Board for Engineering and Technology (ABET) accreditation will be sought to ensure program quality. The tuition charged for participants in this program will be the same as for the Engineering Technology Program: standard tuition rate plus an additional \$700 per semester for full-time students to offset higher engineering faculty salaries and laboratory costs.

Section I – Enrollment

Student enrollment is expected to be 115 students over the first five years of the program. Consistent with other engineering technology programs at UWO, a retention rate of 90% was used to calculate enrollment. All anticipated enrollments are based on information provided by 25 other universities that have been interviewed with similar programs, advisory board feedback, enrollment data from regional two and four-year campuses, and available feedback from potential students that have contacted UWO about these programs. The enrollment estimates are conservative, and an increase in demand is expected as marketing and outreach efforts increase. The program complements other programs already offered at UWO and will have no competition from other academic institutions in this region.

¹ <https://www.bls.gov/ooh/architecture-and-engineering/mechanical-engineers.htm>

Section II – Credit Hours

Students will complete 71 required credits in engineering and engineering technology. Dividing 71 credits by four years, a typical full-time student will take 18 credits of Automation Engineering classes per year. Total credit hours were calculated by multiplying the number of new and continuing students each year by 18 credits.

Section III – Faculty and Staff Appointments

This program leverages existing faculty in Engineering Technology and the allied STEM departments that will offer courses as part of the new program. In Year 1 of this program, UWO anticipates shifting responsibility for one class, or 0.125 FTE, to this program. In Year 2 of the program, UWO anticipates hiring a new faculty member at 1.0 FTE (who would begin teaching in Year 3), which will allow the previous 0.125 FTE to return to Engineering Technology. In Year 3 of the program, it is also likely that 0.25-0.5 FTE of instructional academic staff may be required, but a ready pool of candidates is available locally. This new program would require an additional 0.125 FTE of administrative support. This is available by re-assigning FTE from current staff to the new program.

Section IV – Program Revenues

Tuition Revenues

For students enrolled in this program, standard undergraduate tuition and fee rates will apply. For the 2023-24 academic year, standard residential tuition and segregated fees are projected to total \$ 4,128.95 per semester for a full-time student enrolled in 12-18 credits per semester. Of this amount, \$3,402.84 is attributable to tuition and \$726.11 is attributable to segregated fees. In addition, all students enrolled in the program will pay \$700 per semester in additional tuition to offset the higher faculty salaries found in engineering as well as costs associated with specialized laboratory equipment, software, and program resources that must be regularly maintained and updated.

To calculate tuition revenue in Year 1, tuition of \$ 341.90 per credit (\$3,402.84 plus \$700 divided by 12 credits = \$341.90) was applied to new student credit hours (\$341.90 x 144 credit hours). For subsequent years, the tuition revenue for each year of the program was calculated by multiplying the sum of the total new and existing credit hours by \$341.90 per credit.

While the program will likely attract out-of-state students in time, only the in-state tuition rate is used to calculate a conservative estimate of revenue.

Section V – Program Expenses

Salary and Fringe Expenses

Salary is estimated based on existing salaries in the Engineering and Engineering Technology department. A 45% fringe rate is used. In Year 1, a salary cost of \$15,588 for faculty is anticipated ($\$86,000 \times .125 \text{ FTE} \times 1.45$). An additional salary cost for administrative staff is calculated using the same 45% fringe rate and the current salary of the current administrative staff member ($\$40,310 \times .125 \text{ FTE} \times 1.45 = \$7,306.19$). These figures are projected to remain relatively static through Year 2; only a projected 2% pay plan increase is added into the Year 2 salary figures.

Starting in Year 3, instructional FTE is expected to rise to 1.5. The salary cost for instructional FTE for Years 3 through 5 was calculated using the same faculty salary as above ($\$86,000 \times 1.5 \text{ FTE} \times 1.45$). This number is a bit inflated because the Instructional Academic Staff salary will be lower than the faculty salary, but the faculty salary amount is used to project a conservative net revenue amount.

A further projected 2% annual pay plan increase is calculated in the Years 4 and 5 salary figures.

Other Expenses

Other expenses for this new program include renovation of existing campus space, purchase of new equipment for the program, and minimal costs to create marketing materials for the new program in the first two years.

Renovation of Existing Facilities

In Year 3, students will start taking the advanced engineering courses, so the following renovations will need to be made in Year 2:

Upgraded electrical and compressed air	\$50,000
Movement of doors and internal lab benches and equipment.	\$25,000
Larger doors, a gantry, and improved lighting.	<u>\$25,000</u>
	\$100,000

Equipment

The purchase of new equipment can also be spaced out over the first few years as the first students move through the program:

Year 2:	
Grip force and material density testing equipment	\$20,000
Measurement and position detection sensors	<u>\$40,000</u>
	\$60,000
Year 3:	
Fanuc or ABB Robotics Cell ($\$75,000 \times 2$)	\$150,000

Year 4:	
Manufacturing cell components	\$60,000
<u>Annual Instructional Supplies & Equipment Maintenance</u>	
Years 1 and 2	\$5,000
Years 3 - 5	\$10,000

Section VI – Net Revenue

The net revenue in the spreadsheet is calculated by subtracting the total projected expenses from the projected revenue each year. Net revenue is used to support the operation and administration of the department, overhead expenses, and support services. The small projected deficit in Year 3 will be covered by carrying over part of the net revenue from Year 2.

Should the program reach a point of sustained net revenue, UWO envisions an investment in a multi-disciplinary research and innovation center to encourage and support collaboration, experiential learning, and innovation. The center will provide students with experience and hands-on training by partnering with area businesses. This center will also provide an avenue for businesses to gain access to resources, knowledgeable faculty and staff, and a strong pool of student talent.



UNIVERSITY OF WISCONSIN
OSHKOSH

May 10, 2023

Jay O. Rothman, President
University of Wisconsin System Administration
1720 Van Hise Hall
1220 Linden Drive
Madison, WI 53706

Dear President Rothman,

UW Oshkosh proposes a new Bachelor of Science in Automation Engineering. I am writing to confirm the full commitment of the Office of the Provost and Vice Chancellor to this new addition to our program array.

The proposed program will align well with the strategic plan and mission of UW Oshkosh by expanding our programming while utilizing the expertise of our current faculty and academic staff. The program will provide new professional opportunities to the university's students and support the workforce needs of northeast Wisconsin's manufacturing industry.

The College of Letters and Science, the Academic Policies Committee and the Faculty Senate have all approved the development and implementation of the new program. The College has the resources, faculty, and courses in place to launch this program. If program growth meets projections, the resulting need for additional resources will be funded by the increased tuition revenue. Given the potential for future growth and the ability to offer it initially through existing resources, the program will remain fiscally viable into the foreseeable future. The space needs and other costs will not require any request for capital funds.

Finally, the proposed new Automation Engineering major will benefit from assessment processes and program review procedures that already exist at the college and university levels, thereby ensuring its academic quality and continuous improvement.

If you have any questions, I would be happy to discuss them with you.

A handwritten signature in black ink that reads "John Koker".

John Koker
Provost and Vice Chancellor

Cc: Dr. Tracy Davidson, Interim Associate Vice President, Academic Programs and Faculty Advancement

OFFICE OF THE PROVOST AND VICE CHANCELLOR

800 Algoma Blvd. | Oshkosh, WI 54901

PHONE (920) 424-0300 | FAX (920) 424-0247 | WEB uwosh.edu/provost

OSHKOSH

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FOX CITIES

**MODIFICATION OF UW SYSTEM UNDERGRADUATE
APPLICATION FEE STRUCTURE**

REQUESTED ACTION

Adoption of Resolution D., authorizing the assessment of an application fee after three free applications have been submitted to all UW universities, excepting UW-Eau Claire, UW-La Crosse, and UW-Madison.

Resolution D. That, upon recommendation of the President of the UW System, the UW System Board of Regents approves a proposed request to modify the application fee of \$0 for all undergraduate admission to UW universities, excepting UW-Eau Claire, UW-La Crosse, and UW-Madison. The modification will be to assess a \$25 fee for each application submitted after three free applications for those universities not otherwise assessing a fee.

SUMMARY

The proposed request would maintain the current application fee of \$0 for new undergraduate admission, as established in December 2020 and extended in February 2022, to all UW System universities excepting UW-Eau Claire, UW-La Crosse, and UW-Madison. After three free applications, all subsequent applications will incur a \$25 fee. UW-Eau Claire, UW-La Crosse, and UW-Madison will continue to charge undergraduate applicants their current fees of \$25, \$25, and \$70, respectively. All institutions would retain the right to waive undergraduate application fees for those students who meet the conditions of financial hardship previously set forth in UW System Administrative Policy 805.6.A.19. The proposed request would take effect immediately upon publication with a review of its impact on student applications to the UW System and overall enrollment yield to be conducted on an annual basis.

Presenter

- Julie Amon, Ph.D., Associate Vice President for Enrollment & Student Success, UW System

BACKGROUND

There have been three resolutions that have reduced the undergraduate application fee in recent years. [Resolution 11415](#) adopted April 2, 2020, reduced the application fee from \$50 to \$25 for all institutions besides UW-Madison, which remained at \$60. [Resolution 11564](#), adopted December 10, 2020, reduced the application fee to \$0 for two years for all campuses besides UW-Eau Claire, UW-La Crosse, and UW-Madison. UW-Eau Claire and UW-La Crosse remained at \$25 and UW-Madison at \$60. [Resolution 11802](#) adopted February 2022 extended Resolution 11564 indefinitely. Resolution 12037, adopted June 9, 2023 raised the UW-Madison undergrad application fee to \$70, for applications received on or after August 1, 2023. Note: Prior to the December 2020 resolution, many campuses had application fee waiving campaigns from August-October, so the application fee was effectively \$0 for the majority of Fall 2021 term applications.

The waiver of application fees at UW institutions has significantly increased the number of applications at UW institutions and led to smaller declines in freshman enrollment than seen during the same time period nationwide. At the same time, for many institutions, the influx of additional applications has introduced significant challenges in determining where to direct scarce resources to maximize yield. At the System level, approximately 16% of students complete applications to three or more UW universities; however, at the individual university level, this rate exceeds 60% in some cases, making it difficult to discern which applicants are seriously interested in attending their university, and which are simply taking advantage of free applications. It is expected that reducing the number of free applications will help students to be more focused on the schools they are most interested in attending, and thus help universities better target their time and resources to improve yield.

Setting the application fee at \$0 for 10 institutions signaled the UW System's commitment to educational access for all students. This modification maintains this commitment, while also responding to intuitional concerns about being good stewards of scarce resources. Note that under this resolution, students who have financial hardship will maintain the ability to request an application waiver if they wish to apply to more than three UW universities. The impact on applications and enrollment will continue to be monitored to consider additional modifications in the future.

Previous Action

The current application fee structure was approved by the Board of Regents in February, 2022.

Related Policies

- Regent Policy Document 32-8: "[Application Fees and Waiver](#)"
- UW System Administrative Policy 805.6.A.19: "[Application Fees and Waiver](#)"

**HOST PRESENTATION BY UW-LA CROSSE: "IMAGINE-ING
RADIOLOGICAL SCIENCE – UNDERGRADUATE HEALTH PROFESSION
CAREERS"**

REQUESTED ACTION

For information and discussion.

SUMMARY

This presentation will focus on UWL's programs associated with radiologic science including Radiation Therapy and Nuclear Medicine Technology. In addition, UWL recently added programs in Sonography and Radiography. The presentation will include a short video and discussions with students regarding why they chose this field. Similarities and differences among the fields will be highlighted with a focus on why this field is a strong choice for students interested in an undergraduate health profession career.

Presenters

- Betsy Morgan, PhD, Provost and Vice Chancellor for Academic Affairs, UW-La Crosse
- Melissa Weege, MS, Radiation Therapy Program Director; Program Director for Radiologic Technology and Diagnostic Medical Sonography
- Angela Weiler, MBA, Nuclear Medicine Program Director
- Students from the program

UW SYSTEM STRATEGIC PLAN IMPLEMENTATION: CAMPUS-LEVEL EXPERIENCE AND EXAMPLES

REQUESTED ACTION

For information and discussion.

SUMMARY

Representatives from four UW institutions will discuss the processes, strategies, and initiatives on their campuses aligned with the UW System Strategic Plan.¹ UW-Platteville Interim Provost Wayne Weber will facilitate campus panels to provide examples showing: 1) how the nine strategic priorities identified in the plan apply in their unique contexts;² 2) how campuses work with UW System and collaborate with campus partners; and 3) future strategic priorities, actions, and potential impacts.

Presenters

- Wayne Weber, Interim Provost and Vice Chancellor for Academic Affairs, UW-Platteville
- Patricia Kleine, Provost and Vice Chancellor for Academic Affairs, UW-Eau Claire
- Billy Felz, Interim Vice Chancellor for Enrollment Management, UW-Eau Claire
- David Travis, Provost and Vice Chancellor for Academic Affairs, UW-River Falls
- Laura King, Vice Chancellor for Student Affairs and Strategic Enrollment, UW-River Falls
- Kristen Plessel, Associate Vice Chancellor for Academic Affairs, UW-Whitewater
- Jackie Briggs, Assistant Vice Chancellor for Enrollment and Retention, UW-Whitewater

¹ <https://www.wisconsin.edu/president/strategic-plan/>

² See, for example the UW-Whitewater Strategic Plan: <https://www.uww.edu/strategic-plan>

BACKGROUND

At the June, 2023 meeting of the Education Committee, the UW System Office of Academic and Student Affairs (OASA) provided an overview and update on initiatives OASA supported during the 2022-23 fiscal year and how they align with the UW System Strategic Plan. This discussion will build upon that presentation to provide further details, perspectives, and practical examples from across UW campuses.

Discussion Questions

- How do campuses approach strategic plan alignment?
- What campus strategies or initiatives are most promising or exciting?
- How have campuses and UW System worked together to implement strategies?
- If a campus is successful in implementation, what kind of impact will it have?