Education Committee
April 7, 2022
8:45 a.m. – 10:15 a.m.

Laird Room/Room 230
Dreyfus University Center
1015 Reserve Street Stevens Point, Wisconsin
and Via Webex Videoconference

A. Calling of the Roll

B. Declaration of Conflicts

C. Proposed Consent Agenda
1. Approval of the Minutes of the February 10, 2022 Meeting of the Education Committee
2. UW-Madison: Approval of Doctor of Philosophy (Ph.D.) in Gender and Women's Studies
3. UW-Madison: Approval of a Master of Science in Data Engineering
4. UW-Madison: Approval of a Master of Science in Data Science
5. UW-Stout: Approval of a Bachelor of Science in Cybersecurity
6. UW-Superior: Approval of a Bachelor of Science in Business Analytics
7. Wisconsin Technical College System: Approval of a Collaborative Request for New Liberal Arts Transfer Programs for the Associate of Arts at Blackhawk Technical College; Fox Valley Technical College; Lakeshore Technical College; Mid-State Technical College; Moraine Park Technical College; Northeast Wisconsin Technical College; Waukesha County Technical College; and Western Technical College
8. Wisconsin Technical College System: Approval of a Collaborative Request for New Liberal Arts Transfer Programs for the Associate of Sciences at Blackhawk Technical College; Fox Valley Technical College; Lakeshore Technical College; Mid-State Technical College; Moraine Park Technical College; Northeast Wisconsin Technical College; and Waukesha County Technical College

D. Host Presentation by UW-Stevens Point: One Point—Many Futures

E. Student Needs and the Impact of COVID-19: A Panel Discussion with Senior Student Affairs Officers and Students

F. Report of the Vice President for Academic and Student Affairs
1. Student Telehealth Services Support
2. ACT/SAT Waiver Preliminary Data
3. UW System Office of Professional & Instructional Development Update

NEW PROGRAM AUTHORIZATION (IMPLEMENTATION) DOCTOR OF PHILOSOPHY IN GENDER AND WOMEN'S STUDIES, UW-MADISON

REQUESTED ACTION

Adoption of Resolution C.2., authorizing the implementation of the Doctor of Philosophy in Gender and Women's Studies program at the University of Wisconsin-Madison.

Resolution C.2.: That, upon the recommendation of the Chancellor of the University of Wisconsin-Madison and the President of the University of Wisconsin System, the Chancellor is authorized to implement the Doctor of Philosophy in Gender and Women's Studies program at the University of Wisconsin-Madison.

SUMMARY

UW-Madison proposes to establish a Ph.D. in Gender and Women's Studies (GWS). This program is appropriate to UW-Madison's mission as a comprehensive teaching and research university with a breadth of Ph.D. programs that contribute to new scholarships and train new scholars. This interdisciplinary program will engage in high-quality and creative instruction and generate new knowledge via scholarly research that extends understanding of complex cultural issues and how understanding informs action to address the immediate and long-range needs of society. The development of this program responds to the university's strategic initiative related to excellence in research and scholarship, building on major research advances in GWS and a growing trend of establishing Ph.D. programs in GWS at American universities. It reflects stewardship of resources, leveraging investments in the program that have grown the faculty and supported the successful Master of Art (M.A.) in Gender and Women's Studies and responds to student interest and trends in the discipline to expand to doctoral-level study.

This Ph.D. in Gender and Women's Studies will require a minimum of 51 credits that includes 30 credits of course work covering theory, research methods, scholarly work in GWS, and an area of concentration. Students must also complete a dissertation that comprises original scholarly work.

Graduates will be prepared to pursue faculty positions in teaching, research, and administrative occupations within academia, as well as positions in nonprofits and governmental organizations.

Presenter

- Dr. John Karl Scholz, 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 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
E) Letter from Women & Gender Studies Consortium

REQUEST FOR AUTHORIZATION TO IMPLEMENT A
DOCTOR OF PHILOSOPHY
IN GENDER AND WOMEN'S STUDIES
AT THE UNIVERSITY OF WISCONSIN-MADISON
PREPARED BY UW-MADISON

ABSTRACT

The University of Wisconsin (UW)-Madison proposes to establish a Ph.D. in Gender and Women's Studies (GWS). This program is appropriate to UW-Madison's mission as a comprehensive teaching and research university with a breadth of Ph.D. programs that contribute to new scholarships and train new scholars. This interdisciplinary program will engage in high-quality and creative instruction and generate new knowledge via scholarly research that extends understanding of complex cultural issues and how understanding informs action to address the immediate and long-range needs of society. The development of this program responds to the university's strategic initiative related to excellence in research and scholarship, building on major research advances in GWS and a growing trend of establishing Ph.D. programs in GWS at American universities. It reflects stewardship of resources, leveraging investments in the program that have grown the faculty and supported the successful Master of Art (M.A.) in GWS. It responds to student interest and trends in the discipline that expand to doctoral-level study. This program will require a minimum of 51 credits which includes 30 credits of course work covering theory, research methods, scholarly work in GWS, and an area of concentration. Students must also complete a dissertation that comprises original scholarly work. Graduates will be prepared to pursue faculty positions in teaching, research, and administrative occupations within academia, as well as positions in nonprofits and governmental organizations.

PROGRAM IDENTIFICATION

Institution Name
University of Wisconsin-Madison

Title of Proposed Academic Program
Gender and Women's Studies

Degree Designation(s)
Doctor of Philosophy (Ph.D.)

Mode of Delivery
Single university, Face-to-face

Department or Functional Equivalent
Department of Gender and Women's Studies

College, School, or Functional Equivalent
College of Letters and Science

Proposed Date of Implementation
Fall 2023

Projected Enrollments and Graduates by Year Five

Table 1 represents enrollment and graduation projections for students entering the program over the next five years. Enrollment projections are guided by current enrollments in the M.A. in GWS that has been offered since 2006. On average, the M.A. program has enrolled 11 students and graduated between 3-9 students, each year. Students will be admitted directly to the Ph.D. program. Students will no longer be admitted to the M.A. program, but the degree may be awarded along the way to the Ph.D. The average student retention rate is projected to be 80%, based on data from a comparable Ph.D. program at Indiana University and the Psychology Ph.D. program at UW-Madison. That is, 80% of those who enter go on to complete their Ph.D. in 5 to 8 years. Students who drop out typically do so after the first or second year.

By the end of Year 5, it is expected that 25 students will have enrolled in the program and 4 students will have graduated from the program. The program will enroll approximately 19 students each year. The size of the proposed program is slightly smaller than other research doctorate programs in the College of Letters and Science at UW-Madison but comparable to other Ph.D. programs in the university's Arts and Humanities Division and other Ph.D. programs in GWS nationwide.

Table 1: Five-Year Academic Program Enrollment Projections

Students/Year	Year 1	Year 2	Year 3	Year 4	Year 5
New Students	5	5	5	5	5
Continuing	0	5	9*	14	14**
Total Enrollment	5	10	14	19	19
Graduating					4

*Assumes one Cohort 1 student leaves after two years
**Assumes one Cohort 3 student leaves after two years

Tuition Structure

It is expected students will enroll in this program full-time. Part-time enrollments are not anticipated. Standard tuition and fee rates will apply.[1] In 2021-22, residential tuition and segregated fees total $6,098 per semester for a full-time resident graduate student enrolled in 8 credits per semester or $762 per credit. Full-time enrollment is defined by Graduate School policy. Of this amount, $670 is attributable to tuition and $92 is attributable to segregated fees. Nonresident tuition and segregated fees total $12,762 per semester for a full-time student enrolled in 8 credits per semester or $1,595 per credit. Of this amount, $1,503 is attributable to tuition and $92 is attributable to segregated fees.

Additional program or course fees are not anticipated except for the cost of textbooks, which students will pay. Some students may need to travel for their dissertation research, e.g., travel to archives. Travel awards are available through the Department of GWS and UW-Madison to cover such costs. All UW-Madison students are assessed a one-time $130 document fee at the time of first enrollment.

DESCRIPTION OF PROGRAM

Overview of the Program

The Ph.D. program will be based on at least 51 credit hours of coursework that will include (1) completion of four required core courses in GWS covering theory, research methods, an overview of scholarship in the discipline, and pedagogy; (2) a 15 credit-hour concentration, which will give students expertise in questions, methods, and literature in a traditional discipline or interdisciplinary area; (3) a written qualifying exam; (4) a dissertation; and (5) elective courses and dissertation credits to achieve or exceed the minimum credit-hour requirement.

The Department of GWS has successfully offered an M.A. in Gender and Women's Studies since 2006. The master's program has been regularly reviewed and recommended for continuation. The review committee noted that, in addition to a record of effective graduate program administration, the program can call upon the experience of faculty who teach and supervise doctoral level students in their tenure-home or affiliated departments. Thus, the university can implement the program using existing faculty. The faculty in the department have GWS appointments and joint appointments with other units and collectively offer the expertise required to deliver an interdisciplinary doctoral-level program. Furthermore, implementation of the proposed program will leverage the current course inventory available for the master's, for the doctoral minor, and the graduate certificate. Also utilized will be graduate courses offered in partner departments. This readiness, coupled with student demand, suggests that the GWS program is prepared to

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[1]See https://mbo.wisc.edu/wp-content/uploads/sites/194/2020/07/Student-Fee-Table-FY2020-21-Final-7-21-20.pdf

expand its graduate profile to the doctoral level. Resources currently dedicated to the master's program will be reallocated to support the Ph.D. program. The M.A. in GWS will be retained as a "non-admitting" program that will serve as a progression milestone for students in the Ph.D. program.

Student Learning Outcomes and Program Objectives

The Ph.D. in GWS will provide advanced training in gender analysis for students with a variety of academic backgrounds and career plans. The degree engages the multidisciplinary perspectives associated with gender studies and women's studies: queer studies, transgender studies, sexuality studies, race and ethnicity studies, disability studies, area and global studies, cultural studies, postcolonial, and transnational studies. Graduates of the program will be prepared for a range of careers in academia, government, private business, and the nonprofit sector. Students who complete the program will:

1. Demonstrate a broad understanding of major theories, methods, and scholarship in gender and women's studies.
2. Develop significant research questions that will advance the contributions of Gender and Women's Studies scholarship to society; create individualized research programs that match their specific interests and goals, and that harness the tools from their concentration.
3. Acquire the analytical tools to apply gender and women's studies in a range of academic and non-academic careers
4. Demonstrate ethical and professional conduct in research, teaching, and with colleagues.

Program Requirements and Curriculum

Admission requirements for the Ph.D. in GWS will follow those set by UW-Madison Graduate School policies. Applicants must hold a bachelor's degree from an accredited U.S. institution, or a comparable degree from an international institution. Application requirements are as follows: three letters of recommendation; transcript (unofficial until admit, then official); TOEFL or IELTS score for international students whose first language is not English or whose undergraduate instruction was not in English; resume (CV); writing sample (10-20 pages, no more than 25 pages); statement of purpose. Admissions will be based on the evaluation of these materials.

Table 2 illustrates the program curriculum for this 51-credit program. In addition to completion of coursework, students must pass a written qualifying examination and complete and defend a doctoral dissertation. The program will align with UW-Madison Graduate School policy governing graduate programs, including policies governing student grievances and monitoring timely student progress to degree. The Graduate Program Coordinator will monitor student progress in consultation with the Director of Graduate Studies. In addition, all students will be assigned a faculty mentor, with whom they will be required to meet regularly to discuss course selection and research plans.

Table 2. Curriculum for the Ph.D. in Gender and Women's Studies

Required Courses	13 credits
GEN&WS 800. Research Methods in Gender and Women's Studies	3 credits
GEN&WS 810. Gender and Women's Studies: The Emergence and Transformation of a Field	3 credits
GEN&WS 830. Contemporary Theorizing in Gender and Women's Studies	3 credits
GEN&WS 840. Pedagogy in Gender and Women's Studies	3 credits
GEN&WS 860. Proseminar in Gender and Women's Studies	1 credit
Advanced Electives	
Complete 3 courses from the list below.	**9 credits**
GEN&WS 904. Sociological Perspectives on Gender	3 credits
GEN&WS 920. Anthropology of Gender	3 credits
GEN&WS 932. Psychology of Women and Gender	3 credits
GEN&WS 933. Feminist Political Theory	3 credits
GEN&WS 938. History of Sexuality	3 credits
Concentration	**15 credits**
Complete a substantial concentration or doctoral minor in a discipline or interdisciplinary area. Numerous possibilities are available. Examples are given here for one discipline (Political Science) and one interdisciplinary area (Health).	
Discipline-focused Example: Political Science	
POLI SCI 812 Introduction to Statistical Methods in Political Science	3 credits
POLI SCI 813 Multivariate Statistical Inference for Political Research	3 credits
POLI SCI 817 Empirical Methods of Political Inquiry	3 credits
POLI SCI 856 Field Seminar in Comparative Politics	3 credits
POLI SCI 948 Introduction to African Politics (or other region)	3 credits
Interdisciplinary Example: Social Science Approaches to Health	
POLI SCI 812 Introduction to Statistical Methods in Political Science	3 credits
POLI SCI 813 Multivariate Statistical Inference for Political Research (or equivalent course in Sociology or qualitative methods course)	3 credits
SOC/C&E SOC 750: Research Methods in Sociology	3 credits
SOC/POP HEALTH 797: Introduction to Epidemiology	3 credits
GEN&WS 950. Gender and Health	3 credits
Research and Dissertation	**6 credits**
GEN&WS 990. Research and Thesis	1-6 credits
Additional Credits	**8 credits**
Complete this requirement in additional Gender and Women's Studies or other approved coursework or research.	
Total Credits	**51 credits**

The assessment plan follows UW-Madison's assessment requirement that programs engage in "at least one assessment activity each year, and at least one direct assessment every 3 years."[2] The described assessments are s tied to Program Learning Outcomes.

1. **Demonstrate a broad understanding of major theories, methods, and scholarship in GWS.**
   Assessment activities:
   a. Rubric assessment of the final paper/project/exam in GEN&WS 800 (methods), 810 (overview of the field), and 830 (theory).
   b. Demonstrate mastery of knowledge in the preliminary exam.

2. **Develop significant research questions that will advance the contributions of GWS scholarship to society; create individualized research programs that match students' specific interests and goals, and that harness the tools from their concentration.**
   Assessment activities:
   a. Create and gain approval for a Ph.D. dissertation proposal that focuses on a significant question and uses appropriate, well-conceptualized methods.
   b. Evidence of timely scholarly progression
   c. Successful Ph.D. dissertation defense

3. **Acquire the analytical tools to apply GWS in a range of academic and non-academic careers.**
   Assessment activities:
   a. Evaluation of teaching portfolio
   b. Demonstrate professional development via presentation of research.
   c. Exit interviews on prospective career opportunities.
   d. Alumni survey on career progression

4. **Demonstrate ethical and professional conduct in research, in teaching, and with colleagues.**
   Assessment activities:
   a. Complete trainings (online, in person) on ethical and professional conduct, as specified in the Graduate Handbook
   b. Successful research presentations
   c. Evidence from the dissertation proposal that the student is using ethical research methods

In September of each year, the Director of Graduate Studies (DGS) will lead the Graduate Committee in gathering and reviewing the data, synthesizing it, and preparing a report that assesses the Ph.D. program and whether students, as a whole, are achieving

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[2] https://assessment.provost.wisc.edu/academic-program-assessment-plans-guidelines-and-templates/

the learning outcomes. Additionally, the DGS will survey the faculty to obtain their views on the strengths of the program and issues that need to be addressed; this material will also be included in the report. The annual assessment report will include this data, as well as an evaluation of orientation activities, academic advising, and climate. The report will highlight strengths as well as areas for improvement and recommendations for changes to the program. The Department of GWS will review the report at its first meeting in October and decide on which changes to implement. The report will be submitted to the provost's office annually in the Fall as required by the university. Information collected in the assessments will also be used in the regularly scheduled program reviews.

Diversity

Curriculum: Diversity is a cornerstone of scholarship in GWS. In this department, many dimensions of diversity are addressed, including ethnicity, gender, sexual orientation, disability, and social class, using an intersectional approach. As such, readings and discussions about diversity will be integrated throughout the curriculum and will be included in all courses. The program has a proven track record of integrating this material in courses for Master's students and will continue these practices. Students in this field should be well prepared to function in a multicultural world, including diverse universities and workplaces.

There is also an informal curriculum outside classes, in which graduate students learn much from engaging with their peers in the program. Therefore, one of the best diversity practices will be to recruit a diverse pool of students in each cohort entering the program. In recruiting students, the Department of Gender & Women's Studies attends carefully to multiple aspects of diversity, including race/ethnicity, sexual orientation, gender diversity, and disability. Regarding ethnicity, the department has been quite successful in recruiting students of color to the Master's program; the department will continue the practices that have led to those successes. These include the use of Advanced Opportunity Fellowships (AOF), which help to create an attractive support package for students of color and economically disadvantaged students. Moreover, the department is committed to recruiting multiple students of color so that they have a sense of community within the department. It has established partnerships with several ethnic studies programs and a student's concentration could be in one of these programs, which will be likely to attract students from that group. For example, the Department of GWS has two faculty members with joint appointments between GWS and Asian American Studies, and these faculty will attract students wanting to pursue that area of scholarship. As a second example, the department partnered with the Middle East Studies Cluster to hire a faculty member who specializes in research in that region. GWS department has a senior faculty member in that area as well. The presence of these faculty will create a welcoming environment for students of Middle Eastern descent.

Regarding students with disabilities, the Department has been a strong partner with the Disabilities Studies Cluster and has two faculty members who are disability scholars.

They will attract students who want to specialize in this area, and the presence of these faculty will provide a welcoming environment to doctoral students who themselves have disabilities.

   Recruitment, access, retention, and degree completion: The single biggest factor for equity in access, retention, and degree completion is providing 5 years of guaranteed financial support for each Ph.D. student. This support will allow students from all economic backgrounds to enter the program and complete it. The support will come from a combination of fellowships (e.g., University Fellowship, AOF, and external fellowships that students can apply for once they are in the program), Teaching Assistant (TA) positions, and Project Assistant (PA) positions on faculty grants. For academic support services, GWS will partner with a variety of services on campus, such as the Writing Center. For student support services, the program will have a program administrator, with student support services identified as an important part of their job description, with time and resources dedicated for student support.

   Just as there is an informal curriculum, so too there are informal aspects of climate that can play a crucial role in making students feel welcome and included so that they are retained in the program. GWS is highly attentive to these issues. For example, in the main hallway in the Department, a series of posters showing a diverse array of students, offers supportive messages to students and faculty alike, to recognize and value their presence in the GWS community.

   Equity in hiring faculty and staff. The program will be offered by the current faculty in GWS, who are a diverse group in terms of factors such as ethnicity, sexual orientation, and disability. As faculty depart and need to be replaced, the Department will engage in vigorous efforts to recruit faculty from underrepresented groups. This is not just an empty promise. The Department has a strong record of accomplishment in this regard. Currently, 7 of the 21 faculty (32%) are BIPOC (Black, Indigenous, and People of Color).

   In the hiring of faculty, GWS follows the equity and diversity procedures mandated by UW-Madison and that GWS has used successfully over the years. Specifically, GWS will (1) include at least one person of color on each search committee; (2) advertise the position in a variety of places that seek to enlarge the pipeline for faculty from underrepresented groups; (3) require that all members of the search committee participate in a WISELI (Women in Science and Engineering Leadership Institute) workshop, Searching for Excellence & Diversity, in advance of screening candidates. The workshop covers topics including recruiting a diverse pool of candidates, understanding the potential influence of unconscious bias in the selection process, and implementing an effective interview process.

   UW-Madison has a strategic initiative, the Target of Opportunity Program (TOP), that funds the hiring of faculty from underrepresented groups. GWS will make strong efforts to participate in this program.

Collaborative Nature of the Program

This is a UW-Madison-only program. Interdepartmental collaborations are anticipated, given the interdisciplinary nature of the program curriculum and requirements. Several UW-Madison departments have expressed support for the proposal to offer the program. Though not directly related to the coursework or credential, the department maintains an active and collegial collaboration with all UW System GWS programs through the Women's and Gender Studies Consortium. The UW System consortium facilitates collaboration among faculty, staff, students, alumni, and community members across the state; the Consortium has expressed strong support for this Ph.D. program.

Projected Time to Degree

The program is designed to be completed in 5 years. Course work can be completed in the first 2 to 2.5 years. The preliminary exam will occur at the end of the third year, leaving the fourth and fifth years for dissertation research and writing the dissertation. This projection assumes full-time enrollment.

Program Review

As for all new UW-Madison graduate programs, the program will undergo an informal review by the Graduate Faculty Executive Committee three years after implementation to assess early progress to program goals. The program will undergo a more thorough formal review conducted by the College of Letters & Science Academic Planning Council and the Graduate Faculty Executive Committee at the five-year mark. Subsequently, the program will be subject to the UW-Madison requirement for program review at not more than 10-year intervals, following UW-Madison program review guidelines. As part of the program review, the Department of GWS will present data on enrollments, completion rates, student demographics, achievement of learning outcomes, student advising and support, professional development for graduate students, and program changes made based on continuous assessment and budgetary summaries. The self-study is subject to consideration by a review committee, the dean, and governance committees. The program faculty take the lead in addressing recommendations arising from reviews to implement changes to program policies and practices. Assessment of student learning is conducted on an annual basis and information obtained through those regular processes informs the comprehensive periodic reviews. In addition, the Dean may convene a review at any time, should circumstances suggest that a review is needed.

Accreditation

The Ph.D. in GWS is not subject to specialized accreditation, nor does it prepare students for licensure. Additional approval is not required by the Higher Learning Commission (HLC) the program will be reported to HLC as a new program after Board approval.

JUSTIFICATION

Rationale and Relation to Mission

GWS is a vibrant and influential field of scholarship nationally and internationally, in which GWS scholars excavate the past and present experiences of women as well as gender minorities and sexual minorities; demonstrate the influences of gender on society and in the world; examine the meanings of gendered representations; contribute to human rights policies concerning women and gender in the U.S. and around the globe and bring scholarly analysis to major social movements such as #MeToo. Professors at UW-Madison conduct cutting-edge research that illuminates and influences the experiences of women and the construction of gender. The proposed program is designed to leverage the strength of the UW-Madison GWS faculty and their connections to methods and topics studied in "traditional" disciplines, requiring students to build a firm foundation in GWS, which is complemented by a substantive thematic concentration rooted in a discipline or interdisciplinary area.

The Ph.D. in GWS will contribute directly to the mission of the UW-Madison in several ways. The UW-Madison mission states, "*The primary purpose of the University of Wisconsin–Madison is to provide a learning environment in which faculty, staff, and students can discover, examine critically, preserve and transmit the knowledge, wisdom, and values that will help ensure the survival of this and future generations and improve the quality of life for all. The university seeks to help students to develop an understanding and appreciation for the complex cultural and physical worlds in which they live and to realize their highest potential of intellectual, physical and human development.*"[3] The proposed Ph.D. in GWS supports the institutional mission of UW-Madison by creating an environment in which faculty, working collaboratively with Ph.D. students, can discover, preserve, and transmit knowledge about women and gender, and in which graduate students can learn to discover and transmit knowledge independently. The program will have a strong emphasis on critical analysis of scholarship across a broad array of disciplines. Ph.D. students will be given the resources to realize their highest potential.

Moreover, according to its mission statement, one of UW-Madison's goals is to "*Achieve leadership in each discipline, strengthen interdisciplinary studies, and pioneer new fields of learning.*" The proposed program is interdisciplinary in terms of program curricula

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[3] See https://www.wisc.edu/about/mission/

and graduates may pursue multiple occupational pathways in and outside of higher education. Furthermore, UW-Madison achieves this goal, in part, because "pioneering new fields of learning" is supported by advanced graduate study and its dynamic effect on scholarly excellence, pushing boundaries forward, and leading new generations to new areas of study. Established in 1975 initially as a program, the Department of GWS at UW-Madison has grown steadily to become one of the most respected GWS departments in the country, earning high rankings for scholarly articles produced and for federal grants awarded. This record supports the department's capacity to join the 16 other U.S. institutions that offer doctoral study in GWS, to help create the next generation of GWS scholars who will go on to shape the field and to add to the University's prestige. A Ph.D. in GWS at UW-Madison is fitting if not imperative given both the stature of the department and the stature of the university.

A strong Ph.D. in GWS program will enhance the reputation of UW-Madison as an institution deeply dedicated to gender studies, gender equality, women's health, and LGBTQ concerns. The program will complete the suite of academic program options available to students who want to pursue focused study in this area—from undergraduate certificate programs and majors, through doctoral study. Students will benefit from the rich learning environment that graduate students bring to the community of learners. Undergraduates will benefit from being taught by high-caliber TAs with multiple years of experience. The faculty will also benefit from the ability to mentor a new generation of scholars in this arena.

The proposed program UW-Madison's Strategic Plan states that "*In partnership with the state and with colleagues around the world, the university's faculty, staff, and students will identify and address many of the state's and the world's most urgent and complex problems.*"[4] Among the most urgent and complex problems faced today are gender-related. The #MeToo movement sweeps the country. Legislators debate "bathroom bills" and the rights of transgender persons. Domestic violence and sexual violence continue at high rates, despite years of intervention efforts. It is precisely these problems that are addressed in GWS coursework and research. The proposed Ph.D. program will create the next generation of scholars who will tackle these problems, in their teaching and research in colleges and universities, as well as in other places of employment such as government agencies and the business and nonprofit sectors.

University Program Array

As noted, GWS has offered an M.A. degree since 2006. There is no other graduate-level degree program in this area at UW-Madison, though students enrolled in the Ph.D. in History have an opportunity to focus a portion of their studies on Gender and Women's History. The UW-Madison Department of Gender & Women's Studies also has a well-

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[4] See https://chancellor.wisc.edu/strategicplan2/images/Strategic%20Framework_15-19.pdf

enrolled undergraduate major in GWS (81 students), as well as large undergraduate certificate programs in GWS (291 students) and LGBTQ+ Studies (41 students).

Other Programs in the University of Wisconsin System

No other UW System institution offers a Ph.D. in GWS. Like UW-Madison, UW-Milwaukee offers an M.A. in GWS. Bachelor's level programs are offered at UW-Eau Claire, UW-La Crosse, UW-Milwaukee, UW Oshkosh, and UW-Whitewater. Other UW institutions offer GWS courses, minors, or certificate programs.

Need as Suggested by Current Student Demand

The Department collected data from the 16 existing Ph.D. programs in the U.S. Demand is indicated by the consistent enrollments in these programs. For example, among Big 10 schools, Penn State currently has 46 Ph.D. students; Michigan has 39; and Indiana has 24. The Department judges that UW-Madison can compete successfully against the other Ph.D. programs for students because, in many areas, UW-Madison has faculty with stronger reputations than those of the competitors. Most of the existing Ph.D. programs in GWS were begun between 1998 and 2006, and continue to have strong enrollments 15-20 years later, providing evidence of stable demand. Prospective Ph.D. students could come from a variety of sources, including students returning for the Ph.D. after completing a UW-Madison's GWS graduate and undergraduate degree or certificate programs, and those who earned GWS-related credentials from the other UW System institutions, and other interested students nationwide.

Need as Suggested by Market Demand
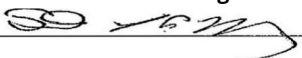
Data on market demand come from placement statistics for GWS doctoral programs at other comparable universities. For example, Penn State, in the last 2 years, has placed their graduates in tenure-track faculty positions at Bucknell University, University of South Carolina, Ohio State, Kuwait University, Marquette University, Ohio Northern University, University of Michigan, and Texas A & M. Over a comparable period, Indiana University has placed 7 students in tenure-track faculty positions, 6 in lecturer positions, 3 in academic administrative positions as deans/directors, and one as CEO of a nonprofit. Additional data, from a systematic, quantitative study of outcomes for students who completed a Ph.D. in GWS between 2010 and 2015,[5] indicated approximately 45 faculty positions in GWS were advertised per year. This number captures only faculty positions and does not account for possible employment available outside academia.

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[5] Musial, J. & Holmes, C. (2018). Five-year study on hiring trends in gender, women's and feminist studies. *Feminist Studies, 44,* 253-272

Regarding positions outside academia, Indiana University's Gender Studies Ph.D. program is illustrative.[6] Among students who finished in the last 10 years, most now have jobs in academia and some of the recent ones are on postdoctoral fellowships. Positions outside academia include President of Planned Parenthood Great Plains; Thriving Connections Coach at the South Central Community Action Program; and Training and Implementation Consultant at Paradigm, a company that offers diversity, equity, and inclusion training to businesses. A study of Ph.D.-granting GWS departments found that, among their combined 455 graduates, 46% held tenured or tenure-track positions, 11% were lecturers, 8% were on postdoctoral fellowships, 7% held administrative positions in higher education, 3% were researchers, 3% held positions in nonprofits, 8% were in other positions (e.g., attorney, consultant, writer), and for 14% the information was unknown, or the individual was searching for a position.[7]

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[6] See https://gender.indiana.edu/graduate/career-prep.html

[7] Kimmich, A. (2018). National Women's Studies Association: Women's Gender, and Sexuality Studies Placement Data 2018. *Feminist Studies, 44,*281-283.

			University of Wisconsin - Madison			
			Cost and Revenue Projections For PhD Gender and Women's Studies			
	Items			Projections		
		2023-24	2024-25	2025-26	2026-27	2027-28
		Year 1	Year 2	Year 3	Year 4	Year 5
I	**Enrollment (New Student) Headcount**	5	5	5	5	5
	Enrollment (Continuing Student) Headcount	0	5	9	14	14
	Enrollment (New Student) FTE	5	5	5	5	5
	Enrollment (Continuing Student) FTE	0	5	9	14	14
II	**Total New Credit Hours**					
	Existing Credit Hours	80	135	154	184	208
III	**FTE of New Faculty/Instructional Staff**	0	0	0	0	0
	FTE of Current Faculty	4.0	4.0	4.0	4.0	4.0
	FTE of Current Instructional Staff	0	0	0	0	0
	FTE of New Admin Staff	0	0	0	0	0
	FTE Current Admin Staff - Graduate Coordinator	0.5	0.5	0.5	0.5	0.5
IV	**Revenues**					
	From Tuition	$103,259	$185,866	$268,473	$283,876	$299,278
	From Fees	$0	$0	$0	$0	$0
	Program Revenue - Grant funding for RA support				$91,804	$187,279
	Tuition Remission Surcharge for RA from Grants				$36,000	$72,000
	GPR (re)allocation - TA support	$102,500	$188,190	$277,267	$282,812	$288,468
	GPR (re)allocation	$592,220	$520,424	$445,520	$418,430	$420,442
	Total Revenue	$803,699	$900,315	$997,211	$1,120,414	$1,276,798
V	**Expenses**					
	Salaries plus Fringes					
	Faculty	$480,000	$489,600	$499,392	$509,380	$519,567
	Instructional Staff	$0	$0	$0	$0	$0
	Graduate Coordinator	$40,000	$40,800	$41,616	$42,448	$64,946
	Fringe benefits for FA/AS at 34.7%	$180,440	$184,049	$187,730	$191,484	$202,826
	Faculty and Academic Staff subtotal	$700,440	$714,449	$728,738	$743,313	$787,340
	Reasearch Assistantships (from grants)				$79,005	$161,170
	Fringe benefits for RA's at 18%				$14,221	$29,011
	Total Salary and Fringe Benefits	$700,440	$714,449	$728,738	$836,538	$977,520
	Other Expenses					
	Tuition Remissions for TA/RA appointments	$103,259	$185,866	$268,473	$283,876	$299,278
	Total Expenses	$803,699	$900,315	$997,211	$1,120,414	$1,276,798
VI	**Net Revenue**	$0	$0	$0	$0	$0

Submit budget narrative in MS Word Format

Provost's Signature: John Karl Scholz, Provost	**Date:**
	11/19/2021
Chief Business Officer's Signature: David Murphy, AVC of F&A	**Date: 11/3/2021**

UNIVERSITY OF WISCONSIN-MADISON
COST AND REVENUE PROJECTIONS NARRATIVE
Ph.D. IN GENDER AND WOMEN'S STUDIES

Introduction

The proposed Ph.D. in Gender and Women's Studies (GWS) responds to major research advances in GWS and a growing trend of establishing Ph.D. programs in GWS at American universities. There is no other such program in the state of Wisconsin. Graduates will be prepared for positions as university faculty, and other careers in academia and outside academia. The interdisciplinary program requires a minimum of 51 credit hours of coursework that will include completion of four required core courses in GWS covering theory, research methods, an overview of scholarship in GWS, and pedagogy; a 15 credit-hour concentration (also known as a doctoral minor), which will give students expertise in questions, methods, and literature in a traditional discipline or interdisciplinary area; credits earned while conducting dissertation research; and elective courses and dissertation credits to achieve the minimum credit-hour requirement. The department has successfully administered the Master of Art (M.A.) in Gender and Women's Studies for more than 10 years and has built the faculty capacity and expertise to expand graduate-level programming by shifting resources currently devoted to the Master of Art in Gender and Women's Studies to doctoral level study and strategically expanding the upper-level graduate curriculum. The M.A. in Gender and Women's Studies will be reformulated to be a non-admitting program. The master's will be awarded to all students who meet the criteria for the M.A., whether or not they choose to continue in the doctoral program. Resources available for the master's program will be reallocated to the Ph.D. program.

Section I – Enrollment

The Ph.D. in Gender and Women's Studies will enroll 5 new students a year and will achieve an estimated enrollment of 19 students by Year 5 of the program. As for most Ph.D. programs at UW-Madison, students will be full-time and so the headcount and FTE are the same. The typical completion time will be five years. The Ph.D. graduation rate on average is 80% and to account for this the enrollment projections assume attrition of one student from the entrance cohort between the first and second year of the program's operation and a second student (from a later cohort) between the third and fourth year.

Section II – Credit Hours

The program is designed to be completed in 5 years, with a minimum of 51 credits required. Students will take coursework through the first three years. The preliminary exam will occur at the end of the third year, leaving the fourth and fifth years for dissertation research and writing the dissertation. This projection assumes full-time enrollment, which is typical for Ph.D. students; full-time status is 8 credits in fall/spring as pre-dissertators and then 3 credits per semester as dissertators (candidacy status).

Full-time Ph.D. students will generally enroll in 8 credits per fall/spring semester for the first three years. They will ascend to candidacy upon completion of the third year/sixth semester (fall/spring), after which they will enroll for 3 credits per semester or 6 credits per year until completion of the dissertation.

The program enrollment will generate approximately 80 student credit hours in year 1 of the program and approximately 224 student credit hours by year 5 of the program. Course work is drawn from existing courses available for the M.A. in Gender and Women's Studies, for the doctoral minor and graduate certificate in Gender and Women's Studies, and from graduate courses offered in partner departments and so are counted as existing credits.

Section III – Faculty and Staff Appointments

Based on comparisons to comparable programs, the department estimates that 4 faculty FTE will be necessary to implement and sustain the program, distributed among the larger number of faculty who will serve as major professors to students in the program. The collective faculty in the department have GWS appointments and joint appointments with other units and collectively offer the expertise required to deliver an interdisciplinary doctoral-level program. Currently, there are 21 budgeted faculty (headcount), equivalent to 13 FTE in GWS. These numbers include five faculty who arrived in Fall 2020, substantially expanding the department's ability to offer graduate courses beyond the number and level required for the existing master's program.

The 4 FTE faculty dedicated to the program are reallocated from the MA program, which will become non-admitting. One of these faculty will also serve as the program faculty director. An academic staff graduate coordinator (0.5 FTE) will be reallocated from the MA program.

Section IV – Program Revenues

Tuition Revenues

Each student will enroll in approximately 16 credits in each of the first three years (8 credits in fall/spring). By a student's fourth year of enrollment, as dissertators, they will enroll in a total of 6 credits annually (3 credits per fall/ spring). Thus, students will enroll in sufficient credits to maintain the full-time enrollment levels per Graduate School Policy.

Tuition revenues are estimated assuming the headcount enrollments are approximately half Wisconsin residents and half non-resident students. Graduate student tuition rates apply to these students. For pre-dissertators, the rates are (2021-22): $5363.76 for Wisconsin residents in fall/spring; $2011.41 for Wisconsin residents in summer; $12027.20 for non-residents in fall/spring tuition; $4510.20 for non-residents in summer. For dissertators, the rates for each term at three credits are $1411.41 for Wisconsin residents and $2011.41 for non-residents.

Based on the mix of pre-dissertators and dissertators and Wisconsin residents and non-residents, the annual tuition revenue is projected to be $103,259 in Year 1 and $299,278 by Year 5. As noted below, this tuition will essentially all be remitted for all students because they will hold TA or RA positions. There are no course or program fees.

<u>Grants/Extramural Funding</u>

Extramural funding to faculty research programs will be used to support graduate students in research assistantships and is treated here as revenue to support the program. The budget model shows students in their fourth and subsequent years as dissertators to be appointed as RA's; $24,816 is the 50% rate for an annual RA in 2021-22; the budget projection assumes a 2% annual increase. A fringe benefit rate of 16.2% is applied to these RA stipends. The estimated total amounts for RA funding from grants are $91,804 starting in year 4 and $187,279 by year 5.

Grant funding is also the source for the tuition remission surcharge of $12,000 per RA to partially cover the tuition remission received by students with RA's. This funding will amount to $36,000 in year 4 of the program and will increase with the number of RA's.

<u>General Program Revenue (GPR)</u>

The practice at UW-Madison is to fully fund Ph.D. students in research programs to the extent possible. Funding for students will come primarily from TA positions and this TA support is presented in this budget as revenue for the program because students will TA in programs that are not the Ph.D. in Gender and Women's Studies. Graduate students will be well qualified for TA positions in a range of courses within GWS, as well as in other areas closely affiliated with the disciplines with which GWS faculty have joint appointments. GWS typically hires 11 TAs in the Fall term, and 9 TAs in the Spring term; TA's are hired at a 50% appointment. The 50% TA rate is $20,500 and the budget assumes 2% increases in the rate annually.

As described for the purposes of this budget, TA support is a general pattern for most students. However, the mix of funding sources will vary from student to student and may also include a variety of scholarship and fellowship funds, research assistantships, and project assistantships. These funds are available as allocations, grants, and other opportunities that arise.

The program will primarily be funded by a GPR reallocation from the existing master's program (which will become non-admitting) to the Ph.D. in Gender and Women's Studies of approximately $1.2M by the fifth year of the program

Section V – Program Expenses

Like other Ph.D. programs, this Ph.D. program feeds a virtuous cycle whereby graduate students contribute to instruction, research, and scholarship that generates new extramural revenue streams.

<u>Salary and Fringe Expenses</u>

Salaries for faculty, including the faculty director (Director of Graduate Studies), assume a 2% annual increase with a base average salary estimated from actuals at $120,000. The contribution of a graduate program coordinator estimates a 2% annual increase on a base average salary of $80,000. Fringe benefits use the 2021-22 rate of 34.7% for faculty and academic staff. Total faculty, staff salary, and fringe expenses come to approximately $700K in year 1 and increase to $977K by Year 5.

RA's will be funded from grants and that funding is shown starting in year 4 of the program when the first students are entering their fourth year. These stipends are subject to an 18% fringe benefit rate. By Year 5 the RA stipend and fringe total are estimated at $190,181.

TA's are not shown in the salary and expense section because graduate courses will not have TA's. The TA positions to which students will be appointed will serve the undergraduate courses in GWS or other programs. TA funding is estimated at $103,259 in Year 1 and $299,278 by Year 5.

<u>Other Expenses</u>

Other expenses include the tuition remissions that are provided for graduate students who hold TA, RA, or PA positions. The expectation is that students will be fully funded and so this analysis shows that all tuition is remitted, and this line matches tuition revenue.

Other expenses such as travel and research awards, office space, library resources, and computing that are associated with the program are among the existing graduate-level programming resources and are distributed across the department; they are not detailed here because they are not program-specific expenses.

Section VI – Net Revenue

This program is funded from reallocation from the existing M.A. program (which will become a non-admitting program), and thus the funding will come from that reallocation. Sufficient faculty are available among the total of 21 faculty who may serve as major professors and teach in GWS. Graduate students have both TA support and grant-funded support. Overall, the program will be revenue-neutral.

![University of Wisconsin–Madison logo]
WISCONSIN
UNIVERSITY OF WISCONSIN–MADISON

Date: 19 November 2021

To: Anny Morrobel-Sosa, Vice President for Academic and Student Affairs, UW System
Via email: apfa@uwsa.edu

From: John Karl Scholz, Provost and Vice Chancellor for Academic Affairs

Subject: Authorization Proposal: PhD-Gender & Women's Studies

In keeping with UW System and Board of Regent Policy, I am sending you a proposal for a new PhD-Gender & Women's Studies at University of Wisconsin–Madison.

The program is designed to meet UW–Madison's definition and standards of quality and make a meaningful contribution to the university's select mission, overall academic plan, and academic degree program array. Students will be required to meet all the requirements and standards for an PhD degree at UW–Madison.

Per UW–Madison policy, this program proposal has been endorsed by the faculty of the offering department (i.e., the Department of Gender and Women's Studies), the dean and academic planning council of the program's academic home (i.e., the College of Letters & Science), the university's Graduate Faculty Executive Committee, and the University Academic Planning Council. I send the proposal forward with broad university-wide support, governance approval, and my endorsement.

The program faculty have established a robust plan for curriculum delivery, student support, assessment of student learning, and program review. The College of Letters & Science is committed to the necessary financial and human resources required to continue the program. The proposal provides details on these commitments.

The proposal, including enrollment and budget considerations, have been reviewed in light of the COVID-19 disruption. We are confident there will be student demand for a program like this and that we will be able to support and deliver the program as proposed.

Contingent upon Board of Regent approval, the faculty plan to implement the new program in Fall 2022 with first enrollments in Fall 2023. We are requesting that this proposal be scheduled for consideration at the February 2022 Board of Regents meeting. Please contact Jocelyn Milner (jocelyn.milner@wisc.edu) with any questions about these materials.

Attachments: Authorization Narrative, Cost and Revenue Projections, Cost and Revenue Projections Narrative

Office of the Provost and Vice Chancellor for Academic Affairs
150 Bascom Hall University of Wisconsin-Madison 500 Lincoln Drive Madison, Wisconsin 53706
608/262-1304 Fax: 608/265-3324 E-mail: provost@provost.wisc.edu www.provost.wisc.edu

Copies:

Rebecca Blank, Chancellor, UW–Madison

Rob Cramer, Interim Vice Chancellor for Finance and Administration

Jennifer Klippel, Madison Budget Office

David Murphy, Office of Vice Chancellor for Finance and Administration

Jocelyn Milner, Vice Provost, Academic Planning and Institutional Research

Eric Wilcots, Dean, College of Letters & Science

Elaine Klein, Associate Dean for Academic Planning, College of Letters & Science

Susan Zaeske, Associate Dean of Arts and Humanities, College of Letters & Science

Carleen Vande Zande, Associate Vice President of Academic Programs & Faculty Advancement, UW System

October 25, 2019

Professor Aili Tripp, Chair
Department of Gender and Women's Studies
University of Wisconsin-Madison

Dear Professor Tripp:

On behalf of the UW System Women's and Gender Studies Consortium (WGSC), we enthusiastically support the efforts of your department in establishing a PhD program in Gender and Women's Studies. UW-Madison's Gender and Women's Studies Department is home to an impressive array of faculty and scholars committed to enhancing the experiences of students across UW-Madison, and your current MA program in Gender and Women Studies annually supports a diverse group of students pursuing intersectional research relating to gender, race, sexuality, and other markers of identity.

For over forty years, the UW System Women's and Gender Studies Consortium has supported initiatives that contribute to the growth of Women's, Gender, Sexuality and LGBTQ Studies across the entire UW System. All thirteen institutions across the UW System provide some type of degree offering in Women's, Gender, and Sexuality Studies, including at Bachelor of Arts at six institutions, MA degrees at UW-Milwaukee and UW-Madison, a social justice minor at UW-LaCrosse, and certificate offerings in related fields such as LGBTQ Studies at multiple campuses. Due to the deeply intersectional nature of our work, the WGSC boasts deep relationships across each campus with other units and disciplines. Our individual programs offer a variety of cross-listed courses, and faculty collaborate closely with campus administrators to enhance student learning, support multiculturalism and inclusion, and strengthen the connections between campuses and communities. A PhD offering at one of our two major research institutions will only boost these efforts.

The creation of a PhD program in Women's and Gender Studies at UW-Madison supports the mission and vision of WGSC by further expanding opportunities for deeply intersectional feminist research and activism amongst multicultural communities across the state and beyond. Many of our faculty work closely with graduate and undergraduate students who will be interested in pursuing a PhD in Gender and Women's Studies, and the increased course offerings will attract new scholars in the areas of women, gender, and sexuality to the UW System. We also look forward to supporting these students and their research through our annual Wisconsin Women's and Gender Studies conference each spring.

Thank you for your efforts thus far in developing the PhD program, and we eagerly look forward to supporting its future stages of development.

Sincerely,

Stephanie Rytilahti
Director, Women's and Gender Studies Consortium
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Universities: Madison, Milwaukee, Eau Claire, Green Bay, La Crosse, Oshkosh, Parkside, Platteville, River Falls, Stevens Point, Stout, Superior, Whitewater

NEW PROGRAM AUTHORIZATION (IMPLEMENTATION)
MASTER OF SCIENCE
IN DATA ENGINEERING,
UW-MADISON

REQUESTED ACTION

Adoption of Resolution C.3., authorizing the implementation of the Master of Science in Data Engineering program at the University of Wisconsin-Madison.

Resolution C.3.: That, upon the recommendation of the Chancellor of the University of Wisconsin-Madison and the President of the University of Wisconsin System, the Chancellor is authorized to implement the Master of Science in Data Engineering program at the University of Wisconsin-Madison.

SUMMARY

The University of Wisconsin (UW)-Madison proposes to establish a Master of Science (M.S) in Data Engineering. The development of the program advances the goal of the College of Letters and Science to hone critical thinking skills among its graduates, so they are prepared to solve complex problems across the UW-Madison campus, for the people of Wisconsin, and beyond. This program will be housed in the Department of Computer Sciences. The program will be comprised of 30 credits. The curriculum will address the emerging, and rapidly growing area of computer sciences known as data engineering, which is concerned with the principles and practices of managing data at scale. The development of the program responds to fast-growing employment opportunities and the economic needs of the state for a high-tech workforce. In addition, this program will serve a specific audience of students in collaboration with the U.S. Army, to address critical national needs for more military personnel in the area of Data Engineering. The M.S. in Data Engineering will prepare students in the valid and efficient collection, storage, management, and processing of datasets to support computation and data driven systems important to data science and data analytics functions. Graduates may seek employment as data engineers in a variety of data intensive fields or pursue further education in computer science or related quantitative and computational fields. U.S. Army graduates of

the program will support Army programs through development, deployment and management of defense and intelligence data systems.

For students enrolled in M.S. in Data Engineering program, a market rate tuition of $1,600 per credit will apply to all students regardless of residency. This market-based tuition rate is proposed consistent with the Service Based Pricing policy for face-to-face option (SYS 130 App. B and App. C respectively).

Presenter

- Dr. John Karl Scholz, 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 March 19, 2021, 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 MASTER OF SCIENCE IN DATA ENGINEERING AT THE UNIVERSITY OF WISCONSIN-MADISON PREPARED BY UW-MADISON

ABSTRACT

The University of Wisconsin (UW)-Madison proposes to establish a Master of Science (M.S,) in Data Engineering. The development of the program advances the goal of the College of Letters and Science to hone critical thinking skills among its graduates, so they are prepared to solve complex problems across the UW-Madison campus, for the people of Wisconsin, and beyond. This program will be housed in the Department of Computer Sciences. The program will be comprised of 30 credits. The curriculum will address the emerging, and rapidly growing area of computer sciences known as data engineering, which is concerned with the principles and practices of managing data at scale. The development of the program responds to fast-growing employment opportunities and the economic needs of the state for a high-tech workforce. In addition, this program will serve a specific audience of students in collaboration with the U.S. Army, to address critical national needs for more military personnel in Data Engineering. The M.S. in Data Engineering will prepare students for the valid and efficient collection, storage, management, and processing of datasets to support computation and data-driven systems important to data science and data analytics functions. Graduates may seek employment as data engineers in a variety of data-intensive fields or pursue further education in computer science or related quantitative and computational fields. U.S. Army graduates of the program will support Army programs through the development, deployment, and management of defense and intelligence data systems.

PROGRAM IDENTIFICATION

University Name
University of Wisconsin-Madison

Title of Proposed Academic Degree Program
Data Engineering

Degree Designation(s)
Master of Science-Data Engineering

Mode of Delivery
Single university
Face-to-face delivery

Department or Functional Equivalent
Department of Computer Sciences

College, School, or Functional Equivalent
College of Letters and Science

Proposed Date of Implementation
Fall 2022

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 5, it is expected 215 students will have enrolled in the program and 152 students will have graduated from the program. The average student retention rate is projected to be 95%, based on the retention rate of the M.S. in Computer Science: Professional Program.

The time-to-degree is expected to be four semesters of full-time study for most students, and the budget and curriculum are planned with this expectation. Students will complete 15 credits in Year 1 and 15 credits in Year 2. Well-prepared students may be able to complete the program in 1.5 years with 18 credits in Y1, 9 credits in the fall of Year 2, and 3 credits during the summer between Year 1 and Year 2. The program may also be completed part-time if students have flexible schedules.

Table 1: Five-Year Academic Degree Program Enrollment Projections

Students/Year	Year 1	Year 2	Year 3	Year 4	Year 5
New Students	25	35	45	55	55
Continuing Students	0	24	33	43	52
Total Enrollment	25	59	78	98	107
Graduating Students	0	24	33	43	52

Tuition Structure
For students enrolled in M.S. in Data Engineering program, a market-rate tuition of $1,600 per credit will apply to all students regardless of residency. This market-based tuition rate is proposed consistent with the Service-Based Pricing policy for face-to-face options (SYS 130 App. B and App. C respectively). Additionally, students will have to pay segregated fees. A single credit has a segregated fee of $119.94. No other program fees are anticipated, and no tuition increases are expected within a three-year planning timeframe. Required textbooks and software will be an additional student expense.

DESCRIPTION OF PROGRAM

Overview of the Program

The program requirements are comprised of 30 credits. There are no internships or clinicals.

Student Learning Outcomes and Program Objectives

The curriculum will prepare students in emerging concepts and practices in data engineering including the valid and efficient data collection, data storage, data management, and computational processing of datasets. The program learning outcomes and objectives of the M.S. in Data Engineering are as follows:

1. Design, implement and evaluate the use of analytic algorithms on sample datasets.
2. Explain how a machine-learning model is developed for and evaluated on real-world datasets.
3. Design and execute experimental data collection and processing, and present resulting analyses using best practices in human-centered data communications.
4. Apply and customize analytics, systems, and human-centered techniques to application-specific data engineering requirements and objectives.
5. Identify tradeoffs among data engineering techniques (analytics, systems, and/or human-centered) and contrast design alternatives, within the context of specific data engineering application domains.
6. Survey, interpret, and comparatively criticize state-of-the-art data engineering research talks and papers, with emphasis on constructive improvements.
7. Organize, execute, report on, and present a real-world data engineering project in collaboration with other researchers/programmers.

Program Requirements and Curriculum

The M.S. in Data Engineering program will follow UW-Madison Graduate School rules, which require a bachelor's degree from a regionally accredited U.S. institution, or a comparable degree from an international institution for admission. Applicants are expected to have a prior degree in computer science or a related field.

Table 2 illustrates the program curriculum for the proposed program. The program requirements are comprised of 30 credits, of which 12 credits are data engineering fundamentals courses, and breadth requirements in machine learning (6 cr.) algorithms (3 cr.), systems (3 cr.), and humans and data (3 cr.), and electives (3 cr.).

Table 2: M.S. in Data Engineering Program Curriculum

Data Engineering Fundamentals, complete all 4 courses below (12 credits)		
COMP SCI 739	Distributed Systems	3 credits
COMP SCI 744	Big Data Systems	3 credits
COMP SCI 764	Topics in Database Management Systems	3 credits
COMP SCI 838	Topics in Computing	3 credits
Machine Learning requirement select 2 courses from below (6 credits)		
COMP SCI 540	Introduction to Artificial Intelligence	3 credits
COMP SCI 760	Machine Learning	3 credits
COMP SCI 762	Advanced Deep Learning	3 credits
STAT 451	Introduction to Machine Learning and Statistical Pattern Classification	3 credits
STAT 453	Introduction to Deep Learning and Generative Models	3 credits
STAT 615	Statistical Learning	3 credits
Algorithms requirement, select 1 course from below (3 credits)		
COMP SCI/ECE/ISYE 524	Introduction to Optimization	3 credits
COMP SCI 577	Introduction to Algorithms	3 credits
COMP SCI/ ISYE/MATH/STAT 726	Nonlinear Optimization 1	3 credits
Systems requirement, select 1 course from the list below (3 credits)		
COMP SCI 407	Foundations of Mobile Systems and Applications	3 credits
COMP SCI 537	Introduction to Operating Systems	3 credits
COMP SCI 564	Database Management Systems: Design and Implementation	3 credits
COMP SCI 640	Introduction to Computer Networks	3 credits
COMP SCI 707	Mobile and Wireless Networking	3 credits
COMP SCI 740	Advanced Computer Networks	3 credits
Humans and Data requirement, select 1 course from the list below (3 credits)		
COMP SCI 765	Data Visualization	3 credits
COMP SCI/ISYE/ECE 770	Human-Computer Interaction	3 credits
Approved Electives, select 1 class from the courses below, or any additional course listed above (3 credits) ^		
STAT 611	Statistical Models for Data Science	3 credits
STAT 612	Statistical Inference for Data Science	3 credits
STAT 613	Statistical Methods for Data Science	3 credits
COMP SCI 642	Introduction to Information Security	3 credits
COMP SCI 702	Graduate Cooperative Education	1-2 credits
COMP SCI 790	Master's Thesis	3 credits
COMP SCI 799	Master's Research	1-9 credits
COMP SCI 900	Advanced Seminar in Computer Science	3 credits
Total Credits		**30 credits**

^Courses used as an elective cannot also be used to fulfill data engineering fundamentals requirements or breadth requirements for machine learning, algorithms, systems, and humans and data.

Assessment of Outcomes and Objectives

The assessment plan comports with UW-Madison campus assessment requirements that programs engage "in at least one assessment activity each year, which should include at least one direct assessment within a 3-year period."[1]

The assessment strategy will rely on evidence provided by students, faculty, and staff with direct and indirect relevance to learning objectives. The direct assessments will assess if the core courses result in students being able to demonstrate each of the learning outcomes. For indirect assessments, the program committee will conduct annual exit surveys and alumni surveys every three years. The M.S. in Data Engineering program director will prepare an annual assessment report that includes data summaries on all learning outcomes, and student satisfaction with academic advising, orientation activities, student services, climate, and other elements of the student experience. The report will also point out areas for improvement and make recommendations for changes to the program. The department executive committee and chairs will review the report at the annual planning meetings and decide on recommended changes. The report will be submitted to the UW-Madison Provost's office the fall of each year as required by campus. Data collected will also be used to prepare 2- and 5-year reports for the Letters & Science college-level review and Graduate School reviews. These reviews assess programs on the degree to which they meet: 1) admissions, retention, and graduation rates among different subsets of students; 2) program revenue and meet financial goals; and 3) overall student and staff satisfaction with programs.

Diversity

Curriculum: Courses will include modules on ethical issues in data engineering, such as bias in data sets. Coursework will examine areas where bias can occur in data, such as how data is interpreted, who is looking at data, and from where data come. Courses will involve group project work, and students will need to navigate the diversity of backgrounds, opinions, and approaches employed by their classmates. Courses will feature guest speakers from diverse backgrounds and class examples will highlight the contributions to the field of data engineering by people from diverse backgrounds. Students in the program will be encouraged to attend events, such as the CDIS Red Talk series, which highlights topics at the intersection of technology, data, and society. The Red Talk series aims to feature diverse speakers, and the talks often address issues related to social justice, equality, privacy, and related concerns.

Recruitment through degree completion:

Pre-application: The Department of Computer Science (CS) will engage in a variety of recruitment opportunities such as conferences, especially conferences whose audience includes underrepresented groups. These include the Society for Advancement of

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[1] The UW-Madison assessment guidelines can be retrieved from:
https://assessment.provost.wisc.edu/graduate-program-assessment/

Chicanos/Hispanic and Native Americans in Science, the National Diversity in STEM Conference, the Grace Hopper conference (women in technology), and the Tapia Conference on Diversity in Computing. CS will also explore smaller conferences to have a broader reach where faculty build connections with prospective applicants. CS will also more modern recruitment materials including updating the website to be more student-focused and have materials for conferences.

Application: CS will offer fee-waivers to applicants from diverse backgrounds; have a more pro-active communication strategy during the process to provide transparency; and revamp the visit program/schedule to better demonstrate CS climate and build community.

Pre-matriculation: CS will assign "faculty contacts" to each admitted applicant who will be tasked with having regular communication with candidates and explore opportunities to connect applicants with alumni

Post-admission: CS will track how applicants came to the program to begin to identify successful pathways and explore additional pipelines and pathways. CS already regularly monitors for differences in course and program completion amongst students of different groups to identify and take appropriate action. CS will experiment with enrollment cohorts, which seek to encourage a group of students from similar backgrounds to apply and enroll together. CS will connect students from underrepresented groups to existing CS support groups (e.g., Women of the ACM student chapter and the emerging "ColorStack" group for students of color), on-campus groups, and resources to help build connections, support, and mentoring relationships.

Faculty: In faculty recruitment, the CS has focused on increasing the number of faculty who come from underrepresented populations, including increasing the number of female faculty in the department. The department has reached out to alumni and colleagues in departments across the country to recruit a diverse population of candidates to apply for faculty positions. In addition to these recruitment efforts, the department will promote training to raise faculty awareness of diversity and inclusion issues prevalent at UW-Madison.

Initiatives: The Department of Computer Sciences is now in the School of Computing, Data, and Information Sciences (CDIS). CDIS has a focus area of "Inclusion— Addressing under-representation and inclusivity problems in the STEM fields and bringing together diverse populations, points of view and approaches." A CDIS diversity committee has begun to coordinate efforts across departments to increase diversity, equity, and inclusion efforts by supporting each department's work and commitment.

The CS department has joined the national LEAP Alliance initiative, through the Center for Minorities and People with Disabilities in Information Technology, to enroll and

support students from underrepresented groups in CS graduate programs.[2] This initiative establishes a group of graduate programs that work collaboratively to recruit and retain minority students by providing a cross-institution cohort of students and enabling cross-institution mentoring for students.

Projected Time to Degree

The program is designed for two years. Students will complete 15 credits in Year 1 and 15 credits in Year 2. Well-prepared students may be able to complete the program in 1.5 years or three semesters and a summer with 18 credits in Y1, 9 credits in fall of Year 2, and Year 3 credits during the summer between Year 1 and Year 2. The program may also be completed part-time if students have flexible schedules.

Program Review

As for all new UW-Madison graduate programs, the program will undergo review by the College of Letters & Science Academic Planning Council and the Graduate Faculty Executive Committee three years after implementation. A full program review will be conducted five years after implementation. Subsequently, the program will be reviewed at least once every ten years.

To prepare for the review, the program must present data on enrollments, completion rates, student demographics, achievement of learning outcomes, student advising and support, professional development for graduate students, and program changes made based on continuous assessment and budgetary summaries.[3]

Accreditation

This degree does not have any specialized accreditation requirements. The program will be reported to the Higher Learning Commission according to their requirements.

JUSTIFICATION

Rationale and Relation to Mission

The M.S. in Data Engineering will contribute to the UW-Madison 2020-2025 Strategic Priorities of excellence in research and scholarship and ensuring the continued vitality, competitiveness, and strength of their graduate and professional programs; excellence in teaching and educational achievement by expanding educational programming in areas of high student demand; and ensuring a vibrant campus community by enhancing diversity

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[2] https://cmd-it.org/program/current/leap-alliance/
[3] The UW-Madison academic program guidelines may be retrieved at
https://uwmadison.app.box.com/s/fdf91v0cz92y81p2cjaxe2b5x3y16llj

among students, faculty, and staff and creating a welcome, empowered, and inclusive community.

Within the School of Computing, Data & Information Science (CDIS), the new program will strive to meet the CDIS mission of contributing to the public good and enriching civil society through researching, teaching, and outreach; educating responsible leaders, critical thinkers, and creative innovators; and fostering prosperity in the state, region, and the world.

The program contributes to the mission of the Department of Computer Sciences by contributing to the excellence of the long-standing CS strengths in the areas of databases and systems.

University Program Array
The M.S. in Data Engineering program is complementary to existing professional programs in Data Science and Computer Science.

The proposed M.S. in Data Engineering is distinct from but related to, the M.S. in Data Science. The M.S. Data Engineering serves a particular student audience with specific needs in relation to program name and certain distinctive curricular elements. The M.S. in Data Science is a broader degree that combines both statistical and computational knowledge related to data and data analysis and serves a more general audience of students seeking to enter the Data Science professions. In contrast, the M.S. in Data Engineering will serve a narrower audience of students and will provide a more focused curriculum in data platforms and architectures, data integration and enrichment, data management theory, and data uncertainties and pricing.

Another related program, the M.S. in Computer Sciences Professional Master's Program subplan/option, is a general professional computer science degree that covers a broad range of computer sciences topics.

A further related program, the M.S. in Statistics subplan/option in Data Science, is a data science-oriented program focused on coursework in statistics. This proposed M.S. in Data Engineering program would provide students with specialized data engineering training from the perspective of Computer Sciences and the programs and systems that manage data.

There are other programs on the UW-Madison campus that offer strong graduate preparation in data analytics (e.g., M.S. in Systems Engineering and Analytics, M.S. in Engineering Analytics (online), M.S. in Data Science and Human Behavior, M.S. in Business Analytics, M.S. in Learning Analytics (online)). These programs prepare students to be experts in the analysis of data, and in the use of computational analysis tools and techniques, to answer questions and solve problems. In comparison, students in the

proposed data engineering program will develop expertise in the systems and frameworks that support transfer and management of data at scale, so that the data are then available for analysis and computational work.

Other Programs in the University of Wisconsin System

The UW System currently does not field another graduate program in Data Engineering. There is one currently offered M.S. in Data Science in the UW System that is offered collaboratively by six UW institutions and administered by UW Extended campus. At the February 2022 meeting of the Board of Regents, UW-Milwaukee received authorization to offer M.S. in Data Science. The program will be implemented in the Fall 2022 in a face-to-face format. However, Data Science is a distinct field from Data Engineering. Data Science combines both statistical and computational knowledge related to data and data analysis across disciplines. The proposed M.S. in Data Engineering will provide a more focused curriculum in data platforms and architectures, data integration and enrichment, data management theory, and data uncertainties and pricing. Stated differently, Data Engineering is the first part of the data pipeline, focused on the acquisition, cleaning, and preparation of data; while Data Science focuses on obtaining meaning and knowledge from data. Furthermore, the Collaborative UW System degree is a fully online degree program.

Need as Suggested by Current Student Demand

There is strong industry demand for expertise in Data Engineering and ample employment opportunities for M.S. in Data Engineering graduates. This program is being created, in part, through the encouragement of the United States (U.S.) Army, which has a critical national need for more personnel in Data Engineering. It is expected that the program will serve a wide variety of students, including those proposed by the Army. A similar program at Carnegie Mellon University enrolls approximately 25 students from Army each year. It is expected, however, that the program will be attractive to, and enroll, graduate students beyond those proposed by Army.

Need as Suggested by Market Demand

This program is being prepared with the intention of serving a specific audience of students proposed by the U.S. Army, in response to defined critical national needs for more military personnel in Data Engineering. Army graduates of the program will support Army programs through the development, deployment, and management of defense and intelligence data systems.

The program will meet the demand for employees in non-military occupations, as well. Given the increasing amounts of data being generated and processed daily, all industries employ data engineers to build and maintain robust data-handling systems. An IBM/Burning Glass report "The Quant Crunch" predicts a 28% increase in data engineering positions with an average salary of $117,000. The report encourages higher education to

develop students in data science, but also in related roles including data engineers.[4] According to LinkedIn's 2020 Emerging Jobs Report, the Data Engineer position is the 8th fastest-growing job in the U.S. with a 33% annual growth rate.[5] A 2021 report from hired.com/Vetery, a technology talent marketplace projects a 45% growth in Data Engineering positions.[6]

Looking at Bureau of Labor Statistics data, there is not a specific category labeled "Data Engineer" in the Occupational Outlook Handbook (OOH) from the Bureau of Labor Statistics. However, the job outlook in the period 2019-29 for Computer and Information Research Scientists projects growth by 15% (both classified as "much faster than average"). The "typical entry-level education" for these fields is a master's degree. It is reasonable to predict that students graduating from the M.S. Data Engineering program would be well-positioned to meet continued demand for employees with these skills.

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[4] IBM/Burning Glass "The Quant Crunch" https://www.ibm.com/downloads/cas/3RL3VXGA
[5] LinkedIn's 2020 Emerging Jobs Report.
https://business.linkedin.com/content/dam/me/business/en-us/talent-solutions/emerging-jobs-report/Emerging_Jobs_Report_U.S._FINAL.pdf
[6] Hired.com/Verity https://hired.com/state-of-software-engineers#about-hired

University of Wisconsin - Madison
Cost and Revenue Projections For MS-Data Engineering

	Items	Projections				
		2022-23	2023-24	2024-25	2025-26	2026-27
		Year 1	Year 2	Year 3	Year 4	Year 5
I	**Enrollment (New Student) Headcount**	25	35	45	55	55
	Enrollment (Continuing Student) Headcount	0	24	33	43	52
	Enrollment (New Student) FTE	24	36	48	55	55
	Enrollment (Continuing Student) FTE	0	23	34	46	52
II	**Total New Credit Hours**	375	885	1170	1470	1605
	Existing Credit Hours	0	0	0	0	0
III	**FTE of New Faculty/Instructional Staff:**					
	FTE of new Instructional Academic Staff	0.0	0.0	1.0	1.0	1.0
	FTE of Program Manager	1.0	1.0	1.0	1.0	1.0
	FTE of Program Director	0.0	0.5	0.5	0.5	0.5
	FTE of Career Services	0.5	0.5	0.5	0.5	0.5
	FTE of Current Fac/IAS:					
	FTE of Faculty	0.75	0.75	1.0	1.0	1.5
	FTE of Instructional Academic Staff	0.5	0.5	0.5	0.5	0.5
	FTE of Current Admin Staff					
	FTE of administrative assistance (timetable, HR, payroll)	1.0	1.0	1.0	1.0	1.0
IV	**Revenues**					
	From Tuition ($1600 per credit)	$600,000	$1,416,000	$1,872,000	$2,352,000	$2,568,000
	From Fees or Other Sources	$0	$0	$0	$0	$0
	Reallocation from Service-Based Pricing Investment Mar	$135,370	$0	$0	$0	$0
	Total Revenue	$735,370	$1,416,000	$1,872,000	$2,352,000	$2,568,000
V	**Expenses**					
	Salaries plus Fringes					
	New Instructional Academic Staff	-	-	93,636	95,509	97,419
	Program Manager	63,000	64,260	65,545	66,856	68,193
	Program Director	-	58,650	59,823	61,019	62,240
	Career Services Specialist	40,000	40,800	41,616	42,448	43,297
	Existing Faculty Effort	112,500	114,750	156,060	159,181	243,547
	Existing Instructional Academic Staff	45,000	45,900	46,818	47,754	48,709
	Administrative Assistance (timetable, HR, payroll)	49,500	50,490	51,500	52,530	53,580
	Fringe Benefits - Faculty and Academic Staff (34.7%)	107,570	130,073	178,704	182,278	214,094
	Total Salaries and Fringe Benefits	$417,570	$504,923	$693,702	$707,576	$831,081
	Other Expenses					
	Ongoing course development and maintenance	$10,000	$10,000	$10,000		
	Marketing, recruiting and admissions and S&E	$48,000	$113,280	$149,760	$188,160	$205,440
	Scholarship allocation (10% of tuition)	$60,000	$141,600	$187,200	$235,200	$256,800
	College allocation (23.3% of tuition)	$139,800	$329,928	$436,176	$548,016	$598,344
	Campus allocation (10% of tuition)	$60,000	$141,600	$187,200	$235,200	$256,800
	Total Expenses	$735,370	$1,241,331	$1,664,038	$1,914,152	$2,148,465
VI	**Net Revenue**	$0	$174,669	$207,962	$437,848	$419,535

Provost's Signature: John Karl Scholz, Provost   **Date:**

2/17/2022

Chief Business Officer's Signature: David Murpy, Assoc Vice Chancellor, F&A **Date:**

2/17/2022

COST AND REVENUE PROJECTIONS NARRATIVE
UNIVERSITY OF WISCONSIN-MADISON
MASTER OF SCIENCE IN DATA ENGINEERING

Introduction

The proposed M.S. in Data Engineering is a face-to-face master's program comprised of 30 credits. The curriculum will address the emerging, and rapidly growing area of computer sciences known as data engineering. Data engineering is concerned with the principles and practices of managing data at scale. The program will prepare students in the valid and efficient collection, storage, management, and processing of datasets to support computation and data driven systems important to data science and data analytics functions. Graduates may seek employment as data engineers in a variety of commercial fields or pursue further education in computer science or related fields.

Section I – Enrollment

The program expects that students will enroll full-time. For planning purposes, the program projects a retention rate of 95%, which is the same as the existing M.S. in Computer Science: Professional Program. The program seeks to enroll 25 incoming students in the first year with regular growth of up to 55 incoming students per year in Year 5. This means that Year One will have an FTE count of 25, Year 2 an FTE of 59, Year 3 an FTE of 78, Year 4 an FTE of 98, and Year 5 an FTE of 107. A portion of the projected enrollments will include service members of the U.S. Army, to address critical national needs for more military personnel in Data Engineering.

The time to degree is expected to be four semesters (fall and spring). With this projection, 215 headcount students will have entered the masters and 152 headcount students will have graduated over the first five years. This is a conservative estimate to support planning, and enrollments may be higher.

Section II – Credit Hours

The M.S. in Data Engineering program requires 30 credits, which for most students will be distributed over two academic years and four (fall and spring) semesters. This is the assumption used in the budget model.

The budget model assumes each full-time student will take 15 credits in the first year and 15 credits in the second year. These assumptions are the basis for credit calculations. Student credit hours are projects to be 375 in Year 1and over 1605 by Year 5.

Section III – Faculty and Staff Appointments

Faculty and staff to support the program include:

- One new instructor (1 FTE) will be added by Year 3 (annual rate of $90,000)
- A new program manager who will contribute 100% time to this program starting in Year 1 ($63,000 annual FT rate)
- A new professional program director will be hired in Year 2 to provide administrative leadership to this and other computer sciences (CS) professional programs and will contribute 50% time to this program ($115,000 annual FT rate)
- A new career services advisor will be hired to support this and other CS programs with 50% time contributed to this program ($80,000 annual FT rate)
- Existing faculty will contribute proportions of FTEs over the first five years, starting at 0.75 FTE in Year 1, growing to 1 FTE in Year 3, and to 1.5 FTE by Year 5 (annual rate of $150,000)
- Two existing instructors will support the program at a rate of a total of .5 FTE (.25 FTE each) starting in Year 1 (annual rate of $90,000)
- The program will increase administrative staff capacity by 1.0 FTE ($49,500 annual rate). This includes additions of .33 FTE each in timetable/enrollment management, HR assistance, and payroll/financial services.

Salaries are projected to increase at a rate of 2% annually. All fringe benefit rates are set at 34.7% applied to the faculty and academic staff salary total.

Section IV – Program Revenues

Program revenue will be generated from tuition. The program is proposing a market-based per credit tuition of $1,600/credit. Segregated fees will also be charged and are not considered program revenue.

The rationale for market-based tuition (service-based tuition under SYS 130) is based on the program bringing in new and additional students not served by any existing UW-Madison program. While the program is open to qualified applicants, it was developed specifically at the request of the US Army to fill educational needs especially related to artificial intelligence (AI) related workforce development needs. As part of the work of building this partnership UW-Madison program representatives will participate in the US Army's "Army Artificial Intelligence Hub" Academic Partner Event (February 17-18, 2022) where academic and research partners of the Army will explore curriculum and education opportunities. The new audience of students will include students from the military and other students with this interest. In addition, the curriculum and learning outcomes are practice-focused, rather than research-focused, and thus are intended to meet immediate workforce needs. The curriculum is self-contained within prescribed courses with very little choice of electives and all credits are offered within a narrow range of related disciplines.

<u>Tuition Revenues</u>

        Anticipated tuition revenues are calculated by multiplying the tuition per credit ($1,600) times total credit hours. The program is expected to produce $600,000 in tuition revenue in the first year and $2,568,000 annually by Y5.

<u>Program Revenue (PR)</u>

        In the first year, funds will be reallocated from the reinvestment margin from other service-based pricing programs in the College of Letters and Science as an investment in the future of the program ($135,370). By Year 2 the program is anticipated to be revenue positive. The budget for this program, as for other service-based programs pays an allocation to the College which covers a range of overhead items and provides a pool of funds to reinvest in new service-based pricing programs; that fund is the source of funds for Year 1. There are no program or course fees, grants, extramural or GPR funding.

Section V – Program Expenses

<u>Salary and Fringe Expenses</u>

        Faculty and staff expenses are outlined in section III.

<u>Other Expenses</u>

        The budget plans include course development costs for three new or revised courses in Years 1-3. Scholarships, waivers, or supplies will be 8% of revenue.

        Program expenses include a 10% campus share on gross revenue and a 23.3% college/school share on revenue. Funds are allocated for course renewal/maintenance, marketing (including fees paid to the Division of Continuing Studies for a coordinated marketing campaign), scholarships, travel, faculty and staff computer costs, and instructional costs. The school/college share includes a reinvestment fund for development of new academic programs and growth of service-based pricing programs.

        The budget includes 10% for scholarships and tuition waivers that are allocated for top admission candidates and Advanced Opportunities qualified candidates

Section VI – Net Revenue

        The program will be revenue-positive by the second year and generate sizable reinvestment margins after then to support faculty, staff, infrastructure, and research. The generated positive profits from the program in subsequent years will be used for the planned program expansions with further faculty and staff recruitments, equipment needs, and teaching and research initiatives.

W

WISCONSIN
UNIVERSITY OF WISCONSIN–MADISON

Date: 17 February 2022

To: Anny Morrobel-Sosa, Vice President for Academic and Student Affairs, UW System
               via email: apfa@uwsa.edu

From: John Karl Scholz, Provost and Vice Chancellor for Academic Affairs

Subject: Authorization Proposal: MS-Data Engineering

In keeping with UW System and Board of Regent Policy, I am sending you a proposal for a new MS-Data Engineering at University of Wisconsin–Madison.

The program is designed to meet UW–Madison's definition and standards of quality and make a meaningful contribution to the university's select mission, overall academic plan, and academic degree program array. Students will be required to meet all the requirements and standards for an MS degree at UW–Madison.

Per UW–Madison policy, this program proposal has been endorsed by the faculty of the offering department (i.e., the Department of Computer Sciences), the dean and academic planning council of the program's academic home (i.e., the College of Letters & Science), the university's Graduate Faculty Executive Committee, and the University Academic Planning Council. I send the proposal forward with broad university-wide support, governance approval, and my endorsement.

The program faculty have established a robust plan for curriculum delivery, student support, assessment of student learning, and program review. The College of Letters & Science is committed to the necessary financial and human resources required to continue the program. The proposal provides details on these commitments.

The proposal, including enrollment and budget considerations, has been reviewed in light of the COVID-19 disruption. We are confident there will be student demand for a program like this and that we will be able to support and deliver the program as proposed.

Contingent upon Board of Regent approval, the faculty plan to implement the new program in Fall 2022 with first enrollments in Fall 2022. We are requesting that this proposal be scheduled for consideration at the April 2022 Board of Regents meeting. Please contact Karen Mittelstadt (mittelstadt@wisc.edu) with any questions about these materials.

Attachments: Authorization Narrative, Cost and Revenue Projections, Cost and Revenue Projections Narrative

Office of the Provost and Vice Chancellor for Academic Affairs
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Allison La Tarte, Associate Vice Provost, Interim Director, Academic Planning and Institutional Research

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Elaine Klein, Associate Dean for Academic Planning, College of Letters & Science

Kristin Eschenfelder, Associate Dean for Computer, Data, and Information Sciences, College of Letters & Science

Carleen Vande Zande, Associate Vice President of Academic Programs & Faculty Advancement, UW System

NEW PROGRAM AUTHORIZATION (IMPLEMENTATION) MASTER OF SCIENCE IN DATA SCIENCE,
UW-MADISON

REQUESTED ACTION

Adoption of Resolution C.4., authorizing the implementation of the Master of Science in Data Science program at the University of Wisconsin-Madison.

Resolution C.4.: That, upon the recommendation of the Chancellor of the University of Wisconsin-Madison and the President of the University of Wisconsin System, the Chancellor is authorized to implement the Master of Science in Data Science program at the University of Wisconsin-Madison.

SUMMARY

The University of Wisconsin (UW)-Madison proposes to establish a Master of Science (M.S.) in Data Science. The development of the program advances the goal of the College of Letters and Science to hone critical thinking skills among its graduates, so they are prepared to solve complex problems across the UW-Madison campus, the people of Wisconsin, and beyond. This program will be housed in the Statistics Department, but jointly offered by the Statistics and Computer Sciences Departments. The development of the program responds to considerable student interest and fast-growing employment opportunities. The M.S. in Data Science will provide students with abilities in computational and statistical thinking and skills, which may be combined with domain knowledge to address data-rich problems from diverse fields and various industries. Graduates will acquire data science competencies to think critically about data; to manage, process, model, and analyze data; to obtain meaning and knowledge from data; and to use data in responsible and ethical ways. The program will be comprised of 30 credits. The curriculum will address the emerging, and rapidly growing areas of applied statistical and computing research and practices. Graduates may seek employment as data analysts and data scientists or pursue further education in data science, statistics, computer sciences, or related quantitative and computational fields.

For students enrolled in M.S. in Data Sciene program, a market rate tuition of $1,600 per credit will apply to all students regardless of residency. This market-based tuition rate is proposed consistent with the Service Based Pricing policy for face-to-face option (SYS 130 App. B and App. C respectively).

Presenter

- Dr. John Karl Scholz, 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 March 19, 2021), 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
MASTER OF SCIENCE IN DATA SCIENCE
AT UNIVERSITY OF WISCONSIN-MADISON
PREPARED BY UW-MADISON

ABSTRACT

The University of Wisconsin (UW)-Madison proposes to establish a Master of Science (M.S.) in Data Science. The development of the program advances the goal of the College of Letters and Science to hone critical thinking skills among its graduates, so they are prepared to solve complex problems across the UW-Madison campus, the people of Wisconsin, and beyond. This program will be housed in the Statistics Department, but jointly offered by the Statistics and Computer Sciences Departments. The development of the program responds to considerable student interest and fast-growing employment opportunities. The M.S. in Data Science will provide students with abilities in computational and statistical thinking and skills, which may be combined with domain knowledge to address data-rich problems from diverse fields and various industries. Graduates will acquire data science competencies to think critically about data; to manage, process, model, and analyze data; to obtain meaning and knowledge from data; and to use data in responsible and ethical ways. The program will be comprised of 30 credits. The curriculum will address the emerging, and rapidly growing areas of applied statistical and computing research and practices. Graduates may seek employment as data analysts and data scientists or pursue further education in data science, statistics, computer sciences, or related quantitative and computational fields.

PROGRAM IDENTIFICATION

University Name
University of Wisconsin-Madison

Title of Proposed Academic Degree Program
Data Science

Degree Designation(s)
Master of Science-Data Science

Mode of Delivery
Single university
Face-to-face delivery

Department or Functional Equivalent
Department of Statistics

College, School, or Functional Equivalent
College Letters and Science

Proposed Date of Implementation
Fall 2022

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 5, it is expected 170 students will have enrolled in the program and 110 students will have graduated from the program. The average student retention rate is projected to be 95%, based on the retention rate of the M.S.in Statistics: Statistics and Data Science program (which is 96%).

The time-to-degree is expected to be three to four semesters of full-time study for most students and the budget and curriculum are planned with this expectation.

Table 1: Five-Year Academic Degree Program Enrollment Projections

Students/Year	Year 1	Year 2	Year 3	Year 4	Year 5
New Students	25	25	25	40	55
Continuing Students	0	24	24	24	38
Total Enrollment	25	49	49	64	93
Graduating Students	0	24	24	24	38

Tuition Structure
For students enrolled in the M.S. in Data Science program, a market-rate tuition of $1,600 per credit will apply to all students regardless of residency. This market-based tuition rate is proposed consistent with the Service Based Pricing policy for face-to-face option (SYS 130 App. B and App. C respectively). Additionally, students will have to pay segregated fees. A single credit has a segregated fee of $119.94. No other program fees are anticipated, and no tuition increases are expected within a three-year planning timeframe. Required textbooks and software will be an additional student expense.

DESCRIPTION OF PROGRAM

Overview of the Program
        The program requirements are comprised of 30 credits. There are no internships or clinicals.

Student Learning Outcomes and Program Objectives

Students in the M.S. in Data Science program will have an advanced curriculum that allows them to develop skills from statistics, computer sciences, machine learning, and then take additional electives to focus on their specific interests as it relates to data science. The program learning outcomes and objectives are as follows:

1. Demonstrate understanding of theories, methodologies, and computations as tools to solve complex problems in data science.
2. Select or adapt appropriate data science approaches and use or develop best practices in data-driven applications.
3. Synthesize information, organize insights, and evaluate impact pertaining to questions for studies involving empirical data.
4. Communicate data science concepts and results clearly.
5. Adhere to principles of ethical and professional conduct in data science.

Program Requirements and Curriculum

The M.S. in Data Science program will follow UW Madison Graduate School rules which require a bachelor's degree from a regionally accredited U.S. institution, or a comparable degree from an international institution for admission. Applicants will be required to demonstrate equivalent coursework to the following UW-Madison courses in order to be eligible for admission.

1. Calculus and Mathematical Foundation, complete all below
   a. MATH 221 Calculus and Analytic Geometry 1
   b. MATH 222 Calculus and Analytic Geometry 2
   c. MATH 340 Elementary Matrix and Linear Algebra
2. Programming Foundation, select one from the list below
   a. COMP SCI 220 Data Science Programming I
   b. COMP SCI 300 Programming II
   c. COMP SCI 320 Data Science Programming II

Additionally, students are recommended to have previous coursework such as STAT 303, 304 and 305 R for Statistics I, II, and III or STAT 433 Data Science with R (a statistical analysis tool) or significant experience in R.

The M.S. in Data Science planning committee recognizes that there might be excellent candidates who are deficient in one or more areas. The committee plans to explore fielding summer course options, that a student could take, prior to beginning the program to address deficiencies. This will allow for candidates from a wider array of backgrounds.

Table 2 illustrates the program curriculum for the proposed program. The program requirements are comprised of 30 credits, of which 9 credits are from core statistics courses, 9 credits from core computer sciences topics, 6 credits from machine learning and the remaining 6 credits come from a list of provided electives.

Table 2: M.S.in Data Science Program Curriculum

Statistics Core, complete all 3 courses below (9 credits)		
STAT 611	Statistical Models for Data Science	3 credits
STAT 612	Statistical Inference for Data Science	3 credits
STAT 613	Statistical Methods for Data Science	3 credits
Computer Sciences Core, select 1 course from each category (9 credits)		
Algorithms		3 credits
COMP SCI/E C E/I SY E 524	Introduction to Optimization	
COMP SCI 577	Introduction to Algorithms	
COMP SCI/I SY E/MATH/STAT 726	Nonlinear Optimization I	
Systems		3 credits
COMP SCI 537	Introduction to Operating Systems	
COMP SCI 564	Database Management Systems: Design and Implementation	
COMP SCI 640	Introduction to Computer Networks	
COMP SCI 642	Introduction to Information Security	
COMP SCI 739	Distributed Systems	
COMP SCI 744	Big Data Systems	
COMP SCI 764	Topics in Database Management Systems	
Humans and Data		3 credits
COMP SCI 765	Data Visualization	
COMP SCI/ED PSYCH/PSYCH 770	Human-Computer Interaction	
Machine Learning Core, select 2 courses from the list below (6 credits)		
COMP SCI 540	Introduction to Artificial Intelligence	3 credits
COMP SCI 760	Machine Learning	3 credits
COMP SCI/E C E 761	Mathematical Foundations of Machine Learning	3 credits
COMP SCI 762	Advanced Deep Learning	3 credits
STAT 451	Introduction to Machine Learning and Statistical Pattern Classification	3 credits
STAT 453	Introduction to Deep Learning and Generative Models	3 credits
STAT 615	Statistical Learning	3 credits
Data Science Electives, select 6 credits from the courses below (6 credits) ^		
COMP SCI/E C E/I SY E 524	Introduction to Optimization	3 credits
COMP SCI 537	Introduction to Operating Systems	4 credits
COMP SCI 564	Database Management Systems: Design and Implementation	4 credits
COMP SCI/B M I 576	Introduction to Bioinformatics	3 credits
COMP SCI 577	Introduction to Algorithms	4 credits
COMP SCI 640	Introduction to Computer Networks	3 credits
COMP SCI 642	Introduction to Information Security	3 credits
COMP SCI 702	Graduate Cooperative Education	1-2 credits

COMP SCI/I SY E/MATH/STAT 726	Nonlinear Optimization I	3 credits
COMP SCI 736	Advanced Operating Systems	3 credits
COMP SCI 739	Distributed Systems	3 credits
COMP SCI 744	Big Data Systems	3 credits
COMP SCI 763	Security and Privacy for Data Science	3 credits
COMP SCI 764	Topics in Database Management Systems	3 credits
COMP SCI 765	Data Visualization	3 credits
COMP SCI 766	Computer Vision	3 credits
COMP SCI 769	Advanced Natural Language Processing	3 credits
COMP SCI/ED PSYCH/PSYCH 770	Human-Computer Interaction	3 credits
COMP SCI 784	Foundations of Data Management	3 credits
COMP SCI 799	Master's Research	1-9 credits
COMP SCI/E C E/STAT 861	Theoretical Foundations of Machine Learning	3 credits
L I S 461	Data and Algorithms: Ethics and Policy	3-4 credits
STAT 303 & STAT 304 & STAT 305	R for Statistics I and R for Statistics II and R for Statistics III	3 credits
STAT 349	Introduction to Time Series	3 credits
STAT 351	Introductory Nonparametric Statistics	3 credits
STAT 411	An Introduction to Sample Survey Theory and Methods	3 credits
STAT 421	Applied Categorical Data Analysis	3 credits
STAT 433	Data Science with R	3 credits
STAT 443	Classification and Regression Trees	3 credits
STAT 456	Applied Multivariate Analysis	3 credits
STAT 461	Financial Statistics	3 credits
STAT/COMP SCI 471	Introduction to Computational Statistics	3 credits
STAT 575	Statistical Methods for Spatial Data	3 credits
STAT 701	Applied Time Series Analysis, Forecasting and Control I	3 credits
STAT 760	Multivariate Analysis I	3 credits
STAT 761	Decision Trees for Multivariate Analysis	3 credits
STAT 771	Statistical Computing	3 credits
I SY E 620	Simulation Modeling and Analysis	3 credits
I SY E 624	Stochastic Modeling Techniques	3 credits
I SY E/COMP SCI 719	Stochastic Programming	3 credits
I SY E/COMP SCI 723	Dynamic Programming and Associated Topics	3 credits
I SY E/COMP SCI/MATH 728	Integer optimization	3 credits
Total Credits		**30 credits**

^Courses listed both as core course and as an elective may count toward either the requirement, but not both.

Assessment of Outcomes and Objectives

The assessment plan comports with UW-Madison assessment requirements that programs engage "in at least one assessment activity each year, which should include at least one direct assessment within a 3-year period.[1]

The M.S. in Data Science program director will oversee direct and indirect assessments each year. The direct assessments will assess if the core courses result in students being able to demonstrate each of the learning outcomes. For indirect assessments, the program committee will conduct annual exit surveys and alumni surveys every three years. The assessment results will be sent to the M.S. in Data Science Program Committee that includes two department chairs (Statistics and Computer Sciences). The M.S. in Data Science Program Committee will review the results and report to the faculty at both departments. The M.S. in Data Science Program Committee will review the assessment results and decide if changes to the curriculum and other program aspects are needed. If changes are required, the M.S. in Data Science Program Committee discusses the results with the appropriate faculty involved in the courses to develop changes. Proposed changes are then discussed at both departments and approved and then implemented as needed. Additionally, a report will be submitted to the UW-Madison Provost's office the fall of each year as required by campus. Data collected will also be used as to prepare 2- and 5-year reports for the Letters & Science college level review and Graduate School reviews which assess programs on the degree to which they meet admissions, retention, and graduation rates among different subsets of students, the degree to which revenue programs meet financial goals and overall student and staff satisfaction with programs.

Diversity

Curriculum: In alignment with the College of Letters and Sciences commitment to diversity, the proposed M.S. in Data Science program address diversity and equity within the program curriculum. The curriculum will strive to ensure that students can demonstrate professional communications, teamwork, and are aware of culture competencies. This will be demonstrated through the assessment of learning goals of "communicates data science concepts and results clearly" and "adheres to principles of ethical and professional conduct in data science." Related, there is also the important consideration of diversity and ethical considerations within the curriculum. Coursework will include privacy and the control of consumer information and big data, responsible data management, leveraging metadata to inform basic algorithms, and the "right to be forgotten" law.

Recruitment through degree completion: In Summer 2021 Statistics hired a new Student Services Coordinator where 25% of their position is in recruitment efforts for all of

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[1] The UW-Madison assessment guidelines can be retrieved from:
https://assessment.provost.wisc.edu/graduate-program-assessment/

the Statistics offered graduate programs. The department plans to implement the following practices:

- Pre-application: engage in a variety of recruitment opportunities such as Statistics conferences, minority recruiting conferences and smaller conferences to build connections with prospective applicants; and create more modern recruitment materials including updating the website to be more student-focused and have materials/swag for conferences.
- Application: offer fee-waivers to applicants from diverse backgrounds; have a more pro-active communication strategy during the process to provide transparency; and revamp the visit program/schedule to better demonstrate the climate and build community.
- Pre-matriculation: assign "faculty contacts" to each admitted applicant who will be tasked with having regular communication with candidates; and explore opportunities to connect applicants with alumni.
- Post-admission: track how applicants came to the program to begin to identify successful pathways; explore additional pipelines and pathways; develop better mechanisms to review student progress; and assure that there are not inequities between students of different demographics.

Related to this recruitment/retention work, the program will partner with organizations such as the Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) the program will extend its recruiting outreach to diverse groups of potential students. For example, at the 2020 SACNAS conference, faculty and staff from the Department of Statistics received connections from interested students to faculty. In addition, the Computer Sciences department hired a new diversity/outreach specialist in 2021 who focuses on increasing the percentage of women in computing, as well as supporting broader diversity efforts. The Computer Sciences department will advertise the M.S. in Data Science program at events like Grace Hopper Celebration of Women in Computing and Tapia Celebration of Diversity in Computing, which are conferences designed to promote diversity and connect students, faculty, researchers, and professionals in computing from all backgrounds and ethnicities.

Both the Computer Sciences and Statistics department admission committees work to ensure that the diversity of the accepted students matches the diversity of the applicants—that the departments are not disproportionately rejecting underrepresented students. The program committee will implement similar strategies for the M.S. in Data Science program.

The Statistics department currently offers 50% scholarships to highly qualified, Advanced Opportunity Fellowship eligible students (as indicated in the Applicant Review System, a program for students from minoritized and educationally underrepresented groups) to help recruit and defray costs for students to enter the M.S. in Data Science program.

The program recognizes that there might be excellent candidates who are deficient in one or more areas needed for application and/or success in the program. The program thus plans to explore fielding summer course options, that a student could take prior to beginning the program, to address deficiencies. This will allow for candidates from a wider array of backgrounds.

Once enrolled, students in the M.S. in Data Science can expect to receive services that will support their success. The Statistics department will begin a search in the spring for an additional program coordinator for this program who will develop robust orientation and onboarding activities, monitor student academic progress, and take a proactive approach to help students to navigate the curriculum, address course access issues, and create individual paths to success. This program manager will work with the M.S. in Data Science Program Committee and Program Director to identify any systemic issues that exist within the program so that long-term solutions are implemented.

Currently the Statistics Department has a career development coordinator who helps plan and implement events for students to explore post-graduation goals and interactions with alumni and potential employers. The departments of Statistics and Computer sciences are hiring an additional career advisor for the professional master's programs who, along with the director of business engagement, will be another resource for students in this program to engage in events and receive one-on-one advising for their post-graduation plans. The Computer Sciences department will begin offering opportunities to engage with employers such as Shopbop, American Family, Google, along with communities like Starting Block and Capital Entrepreneurs. These staff will coordinate among themselves and with other campus units to make sure that M.S. in Data Science students had ample opportunities to prepare for employment and other post-graduation opportunities.

Faculty/staff recruitment and hiring: The Department of Statistics and the Department Computer Sciences will continue with their efforts to diversify the faculty body. On the faculty recruitment front, Statistics and Computer Sciences have focused on increasing the number of faculty who come from underrepresented populations, including increasing the number of female faculty in the department. As part of this effort, the hiring committee leaders go through inclusive and diversity hiring training programs. The departments have reached out to alumni and colleagues in departments across the country to recruit a diverse population of candidates to apply for faculty positions. In addition to these recruitment efforts, the departments will promote training to raise faculty awareness of diversity and inclusion issues prevalent at UW-Madison.

University initiatives: During the past few years, the Department of Statistics has completed some analyses of the departmental climate to be in alignment with campus expectations and goals. The Climate Committee continues to assess the environment and

provide improvements. One specific goal of the committee has been to provide more departmental events to help build community across all faculty, staff, and students.

The Department of Computer Sciences has a diversity committee that is working to develop department-wide plans for broadening participation from underrepresented groups and is currently working on a department diversity statement. The Computer Sciences department also hosts inclusive teaching training for faculty and instructional staff. The Computer Sciences department did a climate survey of students last year, and plan to continue them every year, and did a climate survey of faculty and staff in 2020. Finally, the Computer Sciences department recently received funding to increase the participation of women in computing and is developing a strategic plan in this direction.

The Department of Statistics and Department of Computer Sciences are part of the School of Computing, Data, and Information Sciences (CDIS), an administrative structure within the College of Letters & Science. CDIS has five focus areas; focus area three is "Inclusion—Addressing under representation and inclusivity problems in the STEM fields and bringing together diverse populations, points of view and approaches." Via the CDIS diversity committee, the departments have begun to see a shared effort across departments to increase diversity, equity, and inclusion efforts by supporting each department's work and commitment, all of which include the Statistics and Computer Sciences departments.

Projected Time to Degree
The program is designed to be completed in two years.

Program Review
As for all new UW-Madison graduate programs, the program will undergo review by the College of Letters & Science Academic Planning Council and the Graduate Faculty Executive Committee three years after implementation. A full program review will be conducted five years after implementation. Subsequently, the program will be reviewed at least once every ten years. To prepare for the review, the program must present data on enrollments, completion rates, student demographics, achievement of learning outcomes, student advising and support, professional development for graduate students, and program changes made based on continuous assessment and budgetary summaries.[2]

Accreditation
This degree does not have any specialized accreditation requirements. The program will be reported to the Higher Learning Commission according to their requirements.

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[2] The UW-Madison academic program guidelines may be retrieved at
https://uwmadison.app.box.com/s/fdf91v0cz92y81p2cjaxe2b5x3y16llj

JUSTIFICATION

Rationale and Relation to Mission

This program will build upon expertise and existing programs within the departments of Statistics and Computer Sciences to offer a Data Science graduate-level program that includes core courses from Statistics and Computer Sciences and electives from these and other departments to give graduates the ability to address advanced level data science challenges.

At the UW-Madison institutional level the proposed new program aligns with the new 2020-2025 strategic priorities.[3] In particular, it advances the UW-Madison priority to expand educational programming in areas of high student demand. Other priorities include excellence in research and scholarship; ensure the continued vitality, competitiveness, and strength of their graduate and professional programs, excellence in teaching and educational achievement; enhance diversity among their students, faculty, and staff and build upon their strong commitment to diversity to create a welcome, empowered, and inclusive community are paramount in the plans for the new program.

The new program will strive to meet the mission of contributing to the public good and enriching civil society through researching, teaching and outreach; educating responsible leaders, critical thinkers, and creative innovators; and fostering prosperity in the state, region, and the world.[4]

These priorities are expected to be achieved through offering a highly ranked program based on best practices within data science, where new technologies and tools are implemented within the curriculum.

University Program Array

Both the Statistics and Computer Sciences Departments offer professional M.S. programs and see the prosed M.S. in Data Science program as complementary to these existing programs. The M.S. in Computer Sciences: Professional Program is more general and spans a broad range of computer sciences topics. The M.S. in Statistics: Statistics and Data Science program is a data science-oriented program but is focused on coursework in statistics and requires a stronger quantitative background for admission. This new program would allow students to have a third option that provides training spanning both fields as it specifically relates to data science.

There are other existing programs on campus, through a variety of departments, that offer data science and data analytics graduate education at the sub-major level. These

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[3] The UW-Madison strategic framework can be viewed at https://strategicframework.wisc.edu/
[4] The CDIS mission and vision can be viewed at https://ls.wisc.edu/areas-of-study/cdis/cdis-vision-mission-statements

programs are all "domain" based and are intended to teach students about data analytics or science within a specific context such as biomedicine, business, psychology, or engineering. For this reason, the new M.S. in Data Science program will be distinct from these programs.

The proposed M.S. in Data Science is distinct from the M.S. in Data Engineering, a new program that also is proposed by UW-Madison at this time. The M.S. in Data Science program provides students with abilities in computational and statistical thinking and skills, which may be combined with domain knowledge to address data-intensive problems from diverse fields and various industries. The curriculum of the M.S. in Data Science curriculum requires both statistical and computational coursework related to data and data analysis and serves a general audience of students seeking to enter the Data Science professions. The M.S. in Data Engineering program has a narrower focus and audience. It emphasizes the valid and efficient collection, storage, management, and processing of datasets to support computation and data driven systems important to analysis and computational functions in data science and data analytics.

Other Programs in the University of Wisconsin System

On the UW System Academic Majors dashboard there is currently only one other M.S. in Data Science program available.[5] The UW System's Collaborative M.S. in Data Science is an online program offered by UW-Eau Claire, UW-Green Bay, UW-La Crosse, UW Oshkosh, UW-Stevens Point, and UW-Superior. At the February 2022 meeting of the Board of Regents, UW-Milwaukee received authorization to offer M.S. in Data Science. The program will be implemented in the Fall 2022 in a face-to-face format. In evaluating this proposal from UW-Madison, the faculty and administration at UW-Milwaukee noted their proposed M.S. in Data Science has a different focus. The UW-Madison program focuses on applied statistical and computing research and practice, while the UW-Milwaukee program emphasizes the application of data science methods in a variety of industries. The M.S. in Data Science will be an in-person program drawing on existing faculty expertise at UW-Madison and is not expected to compete directly with the collaborative online program.

Need as Suggested by Current Student Demand

The program goal is to offer an M.S. in Data Science program complementary to existing programs in these two departments that better meets the desire and serves the need from both students and employers at the graduate level. There is intense demand and interest in data science and ample employment opportunities for M.S. in Data Science graduates; the creation of a M.S. in Data Science program is highly warranted. The growing demand and interest from students for skills in the quantitative and computing fields is evident from the rapid growth of the new undergraduate level Data Science major and growth of enrollment in graduate programs in Computer Sciences and Statistics in the past

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[5] The UW System academic majors dashboard can be accessed at https://www.wisconsin.edu/opar-frontier/uws-academic-majors/

several years. As of December 4, 2021, the undergraduate major in Data Science has 664 declared students and this is within three semesters of the program launch. Since 2015 to 2019 the MS-Statistics: Statistics and Data Science program has seen a seven-fold increase in the number of applicants and the MS-Computer Sciences: Professional program.[6]

Need as Suggested by Market Demand

Data science is one of the fastest growing employment sectors in the nation and in Wisconsin. Although there is not a specific category labeled "data scientist" in the Occupational Outlook Handbook (OOH) from the Bureau of Labor Statistics, the job outlook in the period 2019-29 for statisticians is projected to grow by 35% and for computer and information research scientists to grow by 15% (both classified as "much faster than average").[7,8] Both areas list the "typical entry-level education" for these fields to be a Master's degree. It is reasonable to predict that students graduating from a program such as this would be well positioned to meet continued demand for employees with these skills.

The Division of Continuing Studies has provided an Occupation Analysis from Burning Glass Technologies for Data Scientists in the Midwest (information retrieved December 2020). In this reported job metrics, the projected growth is +19.5% for the next 10 years, average demand is 2,619 postings during 2020, and the median salary is $111,304. In analyzing technical skills necessary to meet this demand, topics such as data science, python, machine learning, R, and predictive modeling are already among the most desired skills and have project growth for demand in the next 2 years. The M.S. in Data Science program will provide education to students in these important areas.

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[6] UW-Madison Graduate School's program profiles: https://grad.wisc.edu/academic-programs/
[7] U.S. Bureau of Labor Statistics Occupational Outlook Handbook: Mathematicians and Statisticians: https://www.bls.gov/ooh/math/mathematicians-and-statisticians.htm#tab-6
[8] U.S. Bureau of Labor Statistics Occupational Outlook Handbook: Computer and Information Research Scientist: https://www.bls.gov/ooh/computer-and-information-technology/computer-and-information-research-scientists.htm#tab-6

	University of Wisconsin - Madison Cost and Revenue Projections For MS-Data Science					
	Items	Projections				
		2022-23	2023-24	2024-25	2025-26	2026-27
		Year 1	Year 2	Year 3	Year 4	Year 5
I	**Enrollment (New Student) Headcount**	25	25	25	40	55
	Enrollment (Continuing Student) Headcount	0	24	24	24	38
	Enrollment (New Student) FTE	25	25	25	40	55
	Enrollment (Continuing Student) FTE	0	24	24	24	38
II	**Total New Credit Hours**	450	738	738	1008	1446
	Existing Credit Hours	0	0	0	0	0
III	**FTE of New Faculty/Instructional Staff:**					
	FTE of new Instructional Academic Staff	1.0	1.0	1.0	2.0	2.0
	FTE of Program Manager	0.5	0.5	0.5	0.8	1.0
	FTE of Program Director	0.1	0.1	0.1	0.1	0.1
	FTE of Recruitment Specialist	0.5	0.5	0.5	0.5	0.5
	FTE of Current Fac/IAS:					
	FTE of Instructional Academic Staff	2.0	2.0	2.0	2.0	2.0
	FTE of Current Admin Staff					
	FTE of Administrative Assistant	1.0	1.0	1.0	1.0	1.0
IV	**Revenues**					
	From Tuition ($1600 per credit)	$720,000	$1,180,800	$1,180,800	$1,612,800	$2,313,600
	From Fees or Other Sources	$0	$0	$0	$0	$0
	Reallocation from Service-Based Pricing Investment Margin	$149,193	$0	$0	$0	$0
	Total Revenue	$869,193	$1,180,800	$1,180,800	$1,612,800	$2,313,600
V	**Expenses**					
	Salaries plus Fringes					
	New Instructional Academic Staff	90,000	91,800	93,636	191,017	194,838
	Existing Instructional Academic Staff	180,000	183,600	187,272	191,017	194,838
	Program Manager	25,000	25,500	26,010	39,795	54,122
	Program Faculty Director	15,000	15,300	15,606	15,918	16,236
	Recruitment Specialist	37,500	38,250	39,015	39,795	40,591
	Administrative Assistance (Administration and Financial)	50,000	51,000	52,020	53,060	54,122
	Fringe Benefits - Faculty and Academic Staff (34.7%)	137,933	140,691	143,505	184,120	192,497
	Total Salaries and Fringe Benefits	$535,433	$546,141	$557,064	$714,724	$747,244
	Other Expenses					
	Ongoing course development and maintenance, Marketing, recruiting and admissions and S&E	$22,000	$22,000	$22,000	$22,000	$22,000
	Scholarship allocation (10% of tuition)	$72,000	$118,080	$118,080	$161,280	$231,360
	College allocation (23.3% of tuition)	$167,760	$275,126	$275,126	$375,782	$539,069
	Campus allocation (10% of tuition)	$72,000	$118,080	$118,080	$161,280	$231,360
	Total Expenses	$869,193	$1,079,428	$1,090,350	$1,435,066	$1,771,032
VI	**Net Revenue**	$0	$101,372	$90,450	$177,734	$542,568

Provost's Signature: John Karl Scholz, Provost	**Date:** 2/17/2022
Chief Business Officer's Signature: David Murpy, Assoc Vice Chancellor, F&A	**Date:** 2/17/2022

COST AND REVENUE PROJECTIONS NARRATIVE
UNIVERSITY OF WISCONSIN-MADISON
MASTER OF SCIENCE IN DATA SCIENCE

Introduction

The proposed M.S. in Data Science is a face-to-face master's program comprised of 30 credits. The curriculum will address emerging, and rapidly growing areas of applied statistical and computing research and practice. Graduates may seek employment as data analysts and data scientists or pursue further education in data science, statistics, computer science, or related quantitative and computational fields.

Section I – Enrollment

The program expects that students will enroll full-time. For planning purposes, the program committee is projecting a retention rate of 95%, which is the same as for the existing M.S. in Statistics: Statistics and Data Science program. To ensure for a successful new program, the program committee has opted to plan for small cohorts of 25 incoming students in the first three years and up to 55 incoming students in Year 5. This means that Year 1 will have an FTE count of 25, Year 2 an FTE of 49, Year 3 an FTE of 49, Year 4 an FTE of 64, and Year 5 an FTE of 93.

The time to degree is expected to be four semesters (fall and spring); however, UW-Madison alumni, with a qualified transferable course from their undergraduate degree, will be able to complete the program in three semesters (fall and spring). The program committee plans to create a summer onboarding option for students who are highly admissible, but deficient in core areas such as linear algebra or python programming with a pre-program course option. These students would still then complete their graduate program in four (fall and spring) semesters.

Section II – Credit Hours

The M.S. in Data Science program requires 30 credits, which will be distributed over two academic years for most students, and this is the assumption used in the budget model.

The budget model assumes each fill-time student will take 18 credits in the first year and 12 credits in the second year. These assumptions are the basis for credit calculations. Student credit hours are projects to be 450 in Year1 and 1,446 by Year 5.

Section III – Faculty and Staff Appointments

Faculty and staff to support the program are as follows:

- One new instructor will serve the first three years at 100% with a second new instructor added in Year 4 (annual rate of $90,000 in Year 1). Instructors will teach for this program and other Statistics programs.
- Two existing instructors will support the program at 100% (annual rate of $90,000 as of Year 1). Instructors will teach for this program and other Statistics programs.
- A new program manager will contribute 50% time to this program in Year 1, increasing to 100% with enrollment growth by Year 5 (0.5 FTE at a $50,000 annual FT rate). The program manager will handle day-to-day program operations.
- A new program faculty director will contribute 10% time to this program ($150,000 annual FT rate). The program director will be a statistics department faculty member to oversee the program.
- A new recruitment specialist will be hired to support this, and other programs offered by Statistics with 50% time contributed to this program ($75,000 annual FTE rate). The recruitment specialist will take care of student recruitment and graduate placement, as well as associated academic matters.
- The program needs support from a financial specialist and an administrative staff member at 1.0 FTE total starting Y1 ($50,000 annual FTE rate).

Salaries are projected to increase at a rate of 2% annually. All fringe benefit rates are set at 34.7% applied to the faculty and academic staff salary total.

Section IV – Program Revenues

Program revenue will be generated from tuition. The program is proposing a market-based per credit tuition of $1,600/credit. Segregated fees will also be charged and are not considered program revenue.

The rationale for a market-based tuition (service-based tuition under SYS 130) is based on the program bringing in new and additional students not served by any existing UW-Madison program. The curriculum and learning outcomes are practice-focused, rather than research-focused, and thus are intended to meet immediate workforce needs, especially to fill the rapidly expanding demand for data scientists. The curriculum is self-contained within prescribed courses with little choice of electives and all credits are offered within a narrow range of related disciplines.

Tuition Revenues

Anticipated tuition revenues are calculated by multiplying the tuition per credit ($1,600) times total credit hours. The program is expected to produce $720,000 in tuition revenue in the first year and $2,313,600 annually by Year 5.

Program Revenue (PR)

In the first year, funds will be reallocated from the reinvestment margin from other service-based pricing programs in the College of Letters and Science as an investment in the future of the program ($149,193). By the second year the program is anticipated to be revenue positive. The budget for this program, as for other service-based programs pays an allocation to the College which covers a range of overhead items and also provides a pool of funds to reinvest in new service-based pricing programs; that fund is the source of funds for Year 1. There are no program or course fees, grants or extramural funding, or GPR funds.

Section V – Program Expenses

Salary and Fringe Expenses

Faculty and staff expenses are outlined in section III.

Other Expenses

Program expenses include a 10% campus share on gross revenue, and a 23.3% college/school share on revenue. Funds are allocated for course renewal/maintenance, marketing (including fees paid to the Division of Continuing Studies for a coordinated marketing campaign), scholarships, travel, faculty and staff computer costs, instructional costs. The school/college share includes a reinvestment fund for development of new academic programs and growth of service-based pricing programs.

The budget includes 10% for scholarships and tuition waivers that are allocated for top admission candidates and Advanced Opportunities qualified candidates

Section VI – Net Revenue

The program will be revenue positive by Year 2 and generate sizable reinvestment margins after then to support faculty, staff, infrastructure, and research in the Department of Statistics. The generated positive profits from the program in subsequent years will be used for the planned program expansions with further faculty and staff recruitments and teaching and research initiatives.

![University of Wisconsin–Madison logo]

Date: 17 February 2022

To: Anny Morrobel-Sosa, Vice President for Academic and Student Affairs, UW System
Via email: apfa@uwsa.edu

From: John Karl Scholz, Provost and Vice Chancellor for Academic Affairs

Subject: Authorization Proposal: MS-Data Science

In keeping with UW System and Board of Regent Policy, I am sending you a proposal for a new MS-Data Science at University of Wisconsin–Madison.

The program is designed to meet UW–Madison's definition and standards of quality and make a meaningful contribution to the university's select mission, overall academic plan, and academic degree program array. Students will be required to meet all the requirements and standards for an MS degree at UW–Madison.

Per UW–Madison policy, this program proposal has been endorsed by the faculty of the offering department (i.e., the Department of Statistics), the dean and academic planning council of the program's academic home (i.e., the College of Letters & Science), the university's Graduate Faculty Executive Committee, and the University Academic Planning Council. I send the proposal forward with broad university-wide support, governance approval, and my endorsement.

The program faculty have established a robust plan for curriculum delivery, student support, assessment of student learning, and program review. The College of Letters & Science is committed to the necessary financial and human resources required to continue the program. The proposal provides details on these commitments.

The proposal, including enrollment and budget considerations, have been reviewed in light of the COVID-19 disruption. We are confident there will be student demand for a program like this and that we will be able to support and deliver the program as proposed.

Contingent upon Board of Regent approval, the faculty plan to implement the new program in Fall 2022 with first enrollments in Fall 2022. We are requesting that this proposal be scheduled for consideration at the April 2022 Board of Regents meeting. Please contact Karen Mittelstadt (mittelstadt@wisc.edu) with any questions about these materials.

Attachments: Authorization Narrative, Cost and Revenue Projections, Cost and Revenue Projections Narrative

Office of the Provost and Vice Chancellor for Academic Affairs

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Kristin Eschenfelder, Associate Dean for Computer, Data, and Information Sciences, College of Letters & Science

Carleen Vande Zande, Associate Vice President of Academic Programs & Faculty Advancement, UW System

NEW PROGRAM AUTHORIZATION (IMPLEMENTATION)
BACHELOR OF SCIENCE IN CYBERSECURITY,
UW-STOUT

REQUESTED ACTION

Adoption of C.5, authorizing the implementation of the Bachelor of Science in Cybersecurity program at the University of Wisconsin-Stout

Resolution C.5: That, upon the recommendation of the Chancellor of UW-Stout and the President of the University of Wisconsin System, the Chancellor is authorized to implement the Bachelor of Science in Cybersecurity program at the University of Wisconsin-Stout.

SUMMARY

The University of Wisconsin (UW)-Stout proposes to establish a Bachelor of Science in Cybersecurity (B.S. in Cybersecurity) that integrates curriculum from existing concentrations, certificates, and a minor in programs focused on computer and information technologies that are well-established at UW-Stout. This program fits UW-Stout's polytechnical mission to offer career-focused programs that combine interdisciplinary knowledge and discipline-specific technical skills leading to professional careers to benefit a global society. As part of UW-Stout's strategic plan, it advances UW-Stout's reputation as a polytechnic university by providing students access to cutting edge technology through this new, innovative program, and complementing UW-Stout's existing program array. The program will be comprised of 120 credits, which will include 69 required credits in the Cybersecurity core, 11 credits of electives, and 40 credits in General Education. A co-op or field experience and capstone course are part of the required Cybersecurity core. Standard tuition and fee rates will apply for students in the face-to-face offering of the program and customized instruction rates will apply for students in the online offering. Graduates of the proposed B.S. in Cybersecurity will help fill the urgent global need for cybersecurity professionals such as security engineers, security software developers, and security consultants, which is anticipated to be 1.8 million people by 2022.

Presenter

- Glendali Rodriguez, Provost and Vice Chancellor for Academic Affairs, UW-Stout

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
B.S. IN CYBERSECURITY AT UNIVERSITY OF WISCONSIN-STOUT
PREPARED BY UW-STOUT

ABSTRACT

The University of Wisconsin (UW)-Stout proposes to establish a Bachelor of Science in Cybersecurity (B.S. in Cybersecurity) that integrates curriculum from existing concentrations, certificates, and a minor in programs focused on computer and information technologies that are well-established at UW-Stout. This program fits UW-Stout's polytechnical mission to offer career-focused programs that combine interdisciplinary knowledge and discipline-specific technical skills leading to professional careers to benefit a global society. As part of UW-Stout's strategic plan, it advances UW-Stout's reputation as a polytechnic university by providing students access to cutting edge technology through this new, innovative program, and complementing UW-Stout's existing program array. The program will be comprised of 120 credits, which will include 69 required credits in the Cybersecurity core, 11 credits of electives, and 40 credits in General Education. A co-op or field experience as well as a capstone course are part of the required Cybersecurity core. Standard tuition and fee rates will apply for students in the face-to-face offering of the program and customized instruction rates will apply for students in the online offering. Graduates of the proposed B.S. in Cybersecurity will help fill the urgent global need for cybersecurity professionals such as security engineers, security software developers, and security consultants, which is anticipated to be short 1.8 million people by 2022.

PROGRAM IDENTIFICATION

University Name
University of Wisconsin-Stout

Title of Proposed Academic Degree Program
Cybersecurity

Degree Designation(s)
Bachelor of Science

Mode of Delivery
Single university
Less than 50% online (face-to-face) and 50% or more online program (online)

Department or Functional Equivalent
Department of Mathematics, Statistics and Computer Science

College, School, or Functional Equivalent
College of Science, Technology, Engineering, Mathematics and Management

Proposed Date of Implementation
September 2022

Projected Enrollments and Graduates by Year Five

Table 1 represents enrollment and graduation projections for students entering the face-to-face program (less than 50% distance delivery) over the next five years. Enrollment retention is estimated to be 73% the first to second fall, and then 94% from year to year, similar to retention for all undergraduates at UW-Stout. By the end of Year 5, it is expected that approximately 205 students will have enrolled in the program and 27 students will have graduated from the program.

Table 1: Five-Year Academic Degree Program Enrollment Projections for Face-to-Face Delivery

Students/Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
New Students	15	30	45	55	60
Continuing Students		11	32	63	90
Total Enrollment	15	41	77	118	150
Graduating Students	0	0	0	9	18

Table 2 represents enrollment and graduation projections for students entering the online program over the next five years. Similar enrollment retention is estimated for the online program (50% or more distance delivery). By the end of Year 5, it is expected that approximately 180 students will have enrolled in the program and 27 students will have graduated from the program.

Table 2: Five-Year Academic Degree Program Enrollment Projections for Online Delivery

Students/Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
New Students	15	30	40	45	50
Continuing Students		11	32	59	80
Total Enrollment	15	41	72	104	130
Graduating Students	0	0	0	9	18

Tuition Structure

For students enrolled in the face-to-face B.S. in Cybersecurity program, standard tuition and fee rates will apply. The tuition structure is the same for full and part-time students. For the current academic year, residential tuition and segregated fees total $4,777 per semester for a full-time student enrolled in 15 credits per semester or $318.43 per credit. Of this amount, $233.81 is attributable to tuition and $45.47 is attributable to segregated fees (plus $39.15 toward textbook and eStout laptop program). Nonresident tuition and segregated fees total $8,910 per semester for a full-time student enrolled in 15 credits per semester or $593.98 per credit. Of this amount, $509.36 is attributable to tuition and $45.47 is attributable to segregated fees (plus $39.15 toward textbook and eStout laptop program).

For students enrolled in the online B.S. in Cybersecurity program, Customized Instruction (CI) tuition will be $400.00 per credit. UW-Stout was granted CI Differential Authority in 1999, now referred to as service-based pricing within the UW System (SYS 130 Appendix B and Appendix C). This is a flat rate driven by market demand. No additional fees are charged to students in customized instruction programs.

DESCRIPTION OF PROGRAM

Overview of the Program

The proposed program integrates existing curriculum from the well-established computer and information technologies focused programs at UW-Stout. The proposed program will be comprised of 120 credits, which will include 69 core credits in Cybersecurity, 11 credits in a concentration of choice, and 40 credits in General Education. Within the core credits, one credit of co-op or field experience and a three-credit capstone course are required.

Student Learning Outcomes and Program Objectives
Upon completion of the Cybersecurity program, graduates will have the ability to:
- Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- Communicate effectively in a variety of professional contexts.
- Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
- Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
- Apply security principles and practices to the environment, hardware, software, and human aspects of a system
- Analyze and evaluate systems with respect to maintaining operations in the presence of risks and threats.

The program learning outcomes for the proposed B.S. in Cybersecurity are adopted from ABET to ensure the program will meet accreditation requirements following approval of the program. As such, the program curriculum will prepare students for taking critical cybersecurity certifications and Department of Defense (DoD) 8570 mandated certifications.

Program Requirements and Curriculum
Admission to UW-Stout meets the criteria for program admission. Table 2 illustrates the curriculum for the proposed program. The program will be comprised of 120 credits, which will include 69 core credits in the Cybersecurity core, 11 credits of electives, and 40 credits in General Education.

Table 2: B.S. in Cybersecurity Program Curriculum
University Requirements
The UW-Stout program prepares to students to graduate with broad, important understandings of daily life in a global society. Two requirements are fulfilled via General Education and Program courses with these approved designations; credits do not contribute to overall credit total for the program
    Racial and ethnic studies (6 credits)
    Global Perspectives (6 credits)

General education courses required for graduation: **40 credits**
    Communication Skills   9 credits
        COMST-100 Fundamentals of Speech (3 credits)
        ENGL-101 Composition 1 OR ENGL-111 Honors Composition 1 (3 credits)
        ENGL-102 Composition 2 OR ENGL-113 Honors Composition 2 (3 credits)

Analytical Reasoning and Natural Sciences   13 credits

    MATH-156 Calculus and Analytic Geometry 1 (5 credits)

      OR MATH-153 Calculus I (4 credits)

   CS-144 Computer Science I (4 credits)

   Natural Science with lab (4-5 credits)

Arts and Humanities   6 credits

Social and Behavioral Sciences   6 credits

Cross-Disciplinary Issues   3 credits

    ICT-103 Information and Communications Technologies (3 credits)

Social Responsibility and Ethical Reasoning   3 credits

   ICT-215 Cybertechnology Ethics (3 credits)

Academic degree program or major course requirements:

Cybersecurity Core   **69 credits**

   CNIT-133 Networking Fundamentals 1 (3 credits)

   CNIT-134 Networking Fundamentals 2 (3 credits)

   CNIT-201 Cybersecurity Operations (3 credits)

   CNIT-301 Linux Systems and Network Administration (3 credits)

   CNIT-361 Workstation and Server (3 credits)

   CNIT-371 Cloud Computing Design, Impl. and Security (3 credits)

   CNIT-382 Network System Design (3 credits)

   CNIT-383 Introduction to Network Security (3 credits)

   CNIT-391 Enterprise Wireless Design & Implementation (3 credits)

   CNIT-445 Firewall Technologies (3 credits)

   CNIT-484 Advanced Network Security and Auditing (3 credits)

   CS-125 Python Scripting (2 credits)

   CS-145 Computer Science 2 (4 credits)

   CS-244 Data Structures (4 credits)

   CS-248 Web and Internet Programming (3 credits)

   CS-324 Database Systems Manipulation and Design (3 credits)

   CS-358 Software Engineering Principles (3 credits)

   CS-480 Computer Security (3 credits)

   MATH-270 Discrete Mathematics (3 credits)

   MSCS-396 Applied Cryptography (4 credits)

   STAT-320 Statistical Methods *OR* higher-level statistics (3 credits)

   Co-op *OR* Field Experience (1 credit)

     Choose from CNIT-349, CNIT-449, CS-449, CS-498, or MSCS-449

   Capstone course (3 credits)

     Choose from CNIT-490 or CS-458 or MSCS-351

Electives   **11 credits**

*Select 11 credits from Computer Electrical Engineering (CEE), Computer
Networking and Information Technology (CNIT), Computer Science (CS),*

Information and Communication Technologies (ICT), Industrial Management (INMGT), (Mathematics) MATH, Mathematics, Statistics and Computer Science (MSCS) or Statistics (STAT)

Total Credits	120 credit(s)

Assessment of Outcomes and Objectives

Assessment will follow UW Stout's current program practices which include assessment plans completed and reviewed by governance committees; the office of Planning, Assessment, Research, and Quality; the provost's office; and assessment requirements from ABET and CAE. Both ABET and CAE require the identification of program and course objectives, the definition of measurable outcomes, and effective feedback from stakeholders. An assessment plan will be developed to meet these requirements.

The B.S. in Cybersecurity Program Director, in collaboration with program stakeholders, will generate the Assessment in the Major Report (AIM) biannually, submitted to the provost's office for review. This report reviews indirect and direct assessments of student learning objectives and outcomes. The Program Director will use the assessments to review the success of the program. As students graduate from the program, the Program Director will analyze the survey results provided by graduating students, alumni, and employers to inform continuous program improvement. Data will be used to construct ABET accreditation reports and National Security Agency (NSA)/Department of Homeland Security (DHS) Center of Academic Excellence in Cybersecurity reports. The data will be shared with the program advisory committee and faculty and staff to maintain strengths and address areas for improvement.

1. **Core concepts and learning outcomes** will be assessed using ABET and CAE continuous improvement evaluation methods as is currently done for other programs. Performance indicators rubrics will be developed to assess student outcomes. These can be assessed through discussions, papers, case studies, quizzes, group projects, and other methods of evaluation employed in their courses. The degree culminates with the capstone course; students will be able to integrate knowledge and skills from various courses, applying them to specific problems in the field of Cybersecurity.
2. **Experiential learning** will be assessed through practicum courses, discussions, and completion of individual and collaborative group projects. Feedback from their internship mentors and employers will also become part of assessing student progress.
3. **Communication Skills** will be assessed through both oral and written communications. Oral communication will be assessed in discussion and lab settings, and students will be informed of their progress using oral communication feedback tools. Student project proposals, briefs, and presentations will be analyzed for progress in development of written communication skills.

4. **Teamwork Skills** will be assessed in project and lab classes. Peer and instructor review of student participation in group work will be periodically assessed, using student review tools, and results will be communicated following university assessment reporting guidelines.

Diversity

The Cybersecurity program is structured to provide students with a strong foundation for understanding the complex nature of cybersecurity which not only entails hardware, software, and data security, but also human, organizational, and societal security. This requires an understanding of the diversity of human behavior in our society, impacts on the work environment, and the need for inclusive excellence. The general education curriculum at UW-Stout also requires coursework in such areas as racial and ethnic studies and global perspectives that will offer students opportunities and learning activities to engage in diverse perspectives, theories, and practices.

The proposed program is in alignment with UW-Stout's strong commitment to diversity, equity, and inclusion. For example, one of the learning outcomes is to communicate effectively in a variety of professional contexts. Courses in the proposed B.S. Cybersecurity program require diverse ways of looking at problems and identifying the best solution given a variety of constraints, and to collaborate across diverse perspectives and experiences. Assignments, case studies and projects engage students in solving real-world cybersecurity problems in diverse team environments composed of students with different genders, ethnicities, sexual orientations, or other backgrounds.

The program will seek to promote inclusivity and diversity among its students, faculty, and the broader community that it serves, which is also consistent with UW-Stout's mission. The program will reach out to local community colleges and K-12 schools to broaden participation in Cybersecurity with respect to race and gender. It can potentially attract more women, veterans, African-Americans, first-generation/low-income students and students from rural areas in the Upper Midwest to join the program. The program will continue to lead with a high percentage of instruction provided in laboratories and by increasing the number of diverse experiential learning opportunities through cooperative relationships with the local industry.

Faculty in the Cybersecurity program will work closely with the newly established Equity, Diversity, and Inclusivity Office, Admissions' Office, the Office of Multicultural Student Services, and the Qube (UW-Stout's unit that supports LGBTQIA+ students) to provide a welcoming and equitable environment for prospective students who identify as Black, Indigenous, People of Color, and LGBTQIA+. Additional partnership and collaboration will be explored with the Stoutward Bound program that supports first-year American ethnic-minority students to ensure Cybersecurity students are supported and retained.

When hiring new faculty and staff, demonstrated success in working with diverse a community will be a strongly preferred quality. The College of Science, Technology, Engineering, Mathematics and Management, the Department of Mathematics, Statistics and Computer Science, and additional units involved in the hiring process will work closely with Human Resources, the Diversity Bridge Team and other campus units to make a concerted effort to be inclusive of individuals from diverse populations and backgrounds.

Collaborative Nature of the Program

The proposed B.S. in Cybersecurity at the University of Wisconsin-Stout will be an interdisciplinary collaboration among the existing B.S. Computer Networking & Information Technology (CNIT), B.S. Computer Science (CS), and B.S. Applied Math & Computer Science (AMCS) programs, as well as the Cybersecurity Research & Outreach Center (CyROC). It will focus on all aspects of cybersecurity, which includes security of data, software, component, connection, and systems, as well as human, organizational, and societal security.

The proposed program will collaborate with the CyROC to continue building cybersecurity research and outreach agendas. This proposed program will involve collaboration with many industry partners and collaborative cybersecurity research opportunities in Cloud Computing, 5G, healthcare, and Industrial Internet of Things (IIoT).

The proposed program will also capitalize on existing strong collaboration and transfer history with many Wisconsin and Minnesota community & technical colleges to allow students from two-year colleges with an Associate Degree in Cybersecurity to seamlessly transfer to the four-year B.S. Cybersecurity program at UW-Stout. Communications with these partners indicates a growing demand for an online version of the proposed B.S. in Cybersecurity program to allow working adults to complete their bachelor's degree.

Projected Time to Degree

A plan that enables students matriculating full-time into this program to complete the curriculum in four years, spanning eight semesters has been developed. The program does not specifically require involvement of any summer or winterm session, although options are available during both sessions for students to expedite their timeline, enable course repeats, or regain placement in the timeline.

In addition to students matriculating directly into UW-Stout's Cybersecurity program, it is expected that some students attending other institutions, or working within the related professions, will find this major desirable for their educational goals. Faculty and staff will work to meet the needs of transfer and non-traditional students interested in completing their education at UW-Stout. UW-Stout has a strong collaboration and transfer history with many Wisconsin and Minnesota community & technical Colleges that will support the ease of transfer into this proposed program as well.

Program Review

The results from the biannual Assessment in the Major report will be examined to determine the need for future curricular and program revisions and to assess and maintain the quality of the program. The Program Director will monitor retention, time-to-graduation, graduation rates, and internship placement rates to further assess the overall effectiveness of the program.

UW-Stout's Planning and Review Committee (PRC) assesses a program's viability and reports to the Faculty Senate, who vote to approve PRC recommendations and submit an annual report to the UW-System. The PRC reviews degree programs on a four-year cycle, to begin four years after the program is initiated. The review includes program components such as: program brand/leading statement; program goals/objectives; program-specific accreditation; annual program metrics such as enrollment and the 4-year plan.
PRC presents the results to the Faculty Senate and the provost.

The B.S. in Cybersecurity program advisory committee will meet on a bi-annual basis. Annually, the committee will review program curriculum, objectives, and outcomes; monitor student retention in the program; and develop marketing tools to recruit prospective students. The information gained from all the program review processes will be used for continuous improvement.

Accreditation

UW-Stout is accredited by the Higher Learning Commission (HLC) and is certified for online course delivery by the United States Distance Learning Association. The curriculum is being developed to meet ABET and CAE accreditation requirements. Existing UW-Stout programs already have this discipline-specific accreditation, so this is not new. A program cannot earn ABET and CAE accreditation until it graduates its first class. However, for the ABET accreditation requirements, it must file an intent to seek ABET accreditation before that. Upon approval of the proposed B.S. in Cybersecurity and graduation of the first students, the university will be submitting the curriculum to ABET for obtaining accreditation of this new program. UW-Stout is currently designated (through 2022) as an NSA/DHS National Center of Academic Excellence in Cybersecurity for existing program offerings. That designation will need to be renewed and the curriculum for this program is developed to meet the program requirements for that designation. The CAE designation will be filed in 2026 after the program graduates its first class.

JUSTIFICATION

Rationale and Relation to Mission

As Wisconsin's Polytechnic University and the first four-year university in the State of Wisconsin to receive the Center of Academic Excellence in Cyber Defense Education (CAE-CDE) designation, it is essential that UW-Stout continue to provide leadership, innovation, and improvement to produce qualified cybersecurity professionals to meet future industry and government needs. The B.S. in Cybersecurity fits UW-Stout's mission to offer career-focused programs that combine interdisciplinary knowledge and discipline-specific technical skills leading to professional careers to benefit a global society. As part of UW-Stout's strategic plan, it advances UW-Stout's reputation as a polytechnic university by providing students access to cutting edge technology through this new, innovative program, and complementing UW-Stout's existing program array.

University Program Array

The proposed Bachelor of Science in Cybersecurity at the University of Wisconsin-Stout will be an interdisciplinary collaboration among the existing B.S. Computer Networking & Information Technology (CNIT), B.S. Computer Science (CS), and B.S. Applied Math & Computer Science (AMCS) programs, as well as the Cybersecurity Research & Outreach Center (CyROC). Therefore, it uses only existing curriculum at UW-Stout, elevating two certificates (Cyber Security & Cyber Defense Computer Networking and Cyber Security & Cyber Defense Secure Software Development) and two concentrations in two separate programs (B.S. in Computer Science–Cyber Security and Secure Software Development; Applied Mathematics and Computer Science–Cyber Security) and minor in Information Security Management (ISM). As such, the program compliments the existing array, and UW-Stout has the faculty and instructional academic staff, curriculum, and facilities infrastructure already in place to offer this degree.

Other Programs in the University of Wisconsin System

UW-Platteville is currently the only UW-System institution to offer an undergraduate degree in Cybersecurity. UW-Whitewater is the only UW System institution to offer a graduate degree program for this CIP code (11.1003) and is offering a B.S. program in Spring 2022. The remaining UW System institutions delivering cybersecurity programs are part of a collaborative program at the graduate degree level with UW-Extended Campus and they include: UW-Green Bay, UW-La Crosse, UW Oshkosh, UW-Parkside, UW-Platteville, UW-River Falls, UW-Stevens Point, and UW-Superior. With the increased awareness of cyber threats and the need for education to prepare students for positions in this field, the proposed program is needed to prevent Wisconsin and its industries from cyber threats. This program would particularly serve the northwest region of the state.

Need as Suggested by Current Student Demand

In today's world, where cyber breaches have devastating effects on every industry and aspect of life, cybersecurity skills are highly desired by students. This is evident by the 280 students (out of 668 total) who are currently majoring in the B.S. Computer Networking and Information Technology, B.S. Computer Science, and B.S. in Applied Mathematics and Computer Science programs at UW-Stout and are specifically adding cybersecurity knowledge and skills to their resumes through concentrations, minors, and/or certificates. However, the importance of cybersecurity makes it imperative to allow students who intend to focus their careers in cybersecurity, to be able to major in it. The proposed B.S. in Cybersecurity will focus on challenges, issues, and solutions for cybersecurity by bringing together all the cybersecurity course work currently in different areas.

While demand for the program skill sets is likely to remain high for the foreseeable future, the nature of student demand may vary, particularly regarding the modality of program offering. Authorization to offer the program in both less than 50% online format and 50% or more online format will support long-term sustainability of the program by reallocating resources as needed to support the area of greater student demand.

Need as Suggested by Market Demand

According to the Information Systems Audit and Control Association (ISACA) State of Cybersecurity 2019 report, there is an urgent need for colleges and universities to prepare highly qualified cybersecurity professionals for entry into the workforce. The global cybersecurity workforce is anticipated to be short 1.8 million people by 2022, despite cybersecurity being one of the best financially compensated technology-related careers.[1] Market data compiled by UW-Stout's Marketing Communications department indicate that the local, regional and national job markets have high demand for cybersecurity professionals.[2] There were a total of 1,782,678 jobs nationwide in 2020 and an average of +6.7% projected change in the market from 2020 to 2025. Wisconsin and neighboring states (Illinois, Minnesota, Michigan, etc.) have high demand for the entry to mid-level cybersecurity professionals but the supply is very low. A supply and demand analysis published by Cyberseek indicates that there are over 5,000 cybersecurity jobs presently open in Wisconsin, but the supply to demand ratio is "very low" at 2.1%.[3] The average Entry Level Cybersecurity Analyst salary in Wisconsin is $70,007.[4] The UW-Stout B.S. Cybersecurity program, with hands-on training in a "real-world" cybersecurity laboratory setting, will broaden students' subject matter knowledge and skills needed for the growing cybersecurity job market.

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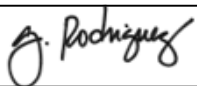
[1] ISACA (2019). State of Cybersecurity 2019 report , *ISACA State of Cybersecurity Report*.
[2] UW-Stout Marketing Communications office. (2021, May). B.S. Cybersecurity Viability Report.
[3] Cyberseek WI (2021). Cybersecurity Job Heat Map, *Wisconsin Cybersecurity Job Heat Map and Gap*.
[4] Wisconsin Entry Level Cybersecurity Salary (2021), Cybersecurity Entry Level Analyst Salary Survey, *Wisconsin Entry Level Cybersecurity Analyst Salary Survey*.

In April 2018 and May 2021, the university convened an advisory board of 21 local cybersecurity leaders in diverse roles, such as CISO, security engineer, security manager and security officer. The group confirmed the need for local talent in cybersecurity with at least a baccalaureate degree. The council will continue supporting career awareness, providing internship and co-op experiences for students in Cybersecurity. The program advisory councils for the CNIT, CS, and AMCS programs have also indicated that current market demand is outpacing the supply of graduates entering the field and they have a growing need for professionals in this area.

University of Wisconsin - Stout
Cost and Revenue Projections For Newly Proposed Program- B.S. Cybersecurity (Face-to-Face)

	Items	Projections				
		2022	2023	2024	2025	2026
		Year 1	Year 2	Year 3	Year 4	Year 5
I	**Enrollment (New Student) Headcount**	15	30	45	55	60
	Enrollment (Continuing Student) Headcount	-	10.95	32.19	63.11	90.47
	Enrollment (New Student) FTE	13.80	27.60	41.40	50.60	55.20
	Enrollment (Continuing Student) FTE	-	10.07	29.62	58.06	83.24
II	**Total New Credit Hours** (# new sections x credits per section)	300.00	600.00	900.00	1,100.00	1,200.00
	Existing Credit Hours	-	219.00	643.86	1,262.23	1,809.49
III	**FTE of New Faculty/Instructional Staff**	0.10	0.38	0.73	1.03	0.40
	FTE of Current Fac/IAS	-	0.10	0.48	1.21	2.24
	FTE of New Admin Staff	-	-	-	-	-
	FTE Current Admin Staff	-	-	-	-	-
IV	**New Revenues**					
	From Tuition (new credit hours x FTE)	$64,532	$176,171	$332,092	$508,128	$647,358
	From Fees	$0	$0	$0	$0	$0
	Program Revenue - Grants	$0	$0	$0	$0	$0
	Program Revenue - Other	$0	$0	$0	$0	$0
	Reallocation	$0	$0	$0	$0	$0
	Total New Revenue	$64,532	$176,171	$332,092	$508,128	$647,358
V	**New Expenses**					
	Salaries plus Fringes					
	Faculty/Instructional Staff	$10,155	$51,735	$120,622	$250,614	$292,084
	Other Staff	$0	$0	$0	$0	$0
	Other Expenses					
	Facilities	$0	$0	$0	$0	$0
	Equipment	$0	$0	$0	$0	$0
	Other:	$17,256	$47,108	$88,801	$135,873	$177,103
	Total Expenses	$27,411	$98,843	$209,423	$386,487	$469,187
VI	**Net Revenue**	$37,121	$77,328	$122,669	$121,640	$178,171

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

Please reference the financial narrative document.

Provost's Signature: *B. Rodriguez*	**Date:**	02/28/2022
Chief Business Officer's Signature:	**Date:**	02/28/2022
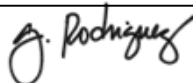
University of Wisconsin - Stout
Cost and Revenue Projections For Newly Proposed Program- B.S. Cybersecurity (Online)

	Items	Projections				
		2022	2023	2024	2025	2026
		Year 1	Year 2	Year 3	Year 4	Year 5
I	**Enrollment (New Student) Headcount**	15	30	40	45	50
	Enrollment (Continuing Student) Headcount	-	10.95	32.19	59.46	79.74
	Enrollment (New Student) FTE	13.80	27.60	36.80	41.40	46.00
	Enrollment (Continuing Student) FTE	-	10.07	29.62	54.70	73.36
II	**Total New Credit Hours (# new sections x credits per section)**	300.00	600.00	800.00	900.00	1,000.00
	Existing Credit Hours	-	219.00	643.86	1,189.23	1,594.87
III	**FTE of New Faculty/Instructional Staff**	0.23	0.33	0.88	0.76	0.50
	FTE of Current Fac/IAS	-	0.23	0.57	1.44	2.20
	FTE of New Admin Staff	-	-	-	-	-
	FTE Current Admin Staff	-	-	-	-	-
IV	**New Revenues**					
	From Tuition (new credit hours x FTE)	$110,400	$307,420	$552,594	$814,966	$1,031,307
	From Fees	$0	$0	$0	$0	$0
	Program Revenue - Grants	$0	$0	$0	$0	$0
	Program Revenue - Other	$0	$0	$0	$0	$0
	Reallocation	$0	$0	$0	$0	$0
	Total New Revenue	$110,400	$307,420	$552,594	$814,966	$1,031,307
V	**New Expenses**					
	Salaries plus Fringes					
	Faculty/Instructional Staff	$21,393	$50,443	$158,333	$233,691	$283,946
	Other Staff	$0	$0	$0	$0	$0
	Other Expenses					
	Facilities	$0	$0	$100,000	$200,000	$300,000
	Equipment	$47	$113	$25,288	$50,440	$50,540
	Other:	$32,521	$85,204	$150,763	$220,921	$282,771
	Total Expenses	$53,961	$135,760	$434,385	$705,052	$917,257
VI	**Net Revenue**	$56,439	$171,660	$118,210	$109,914	$114,050

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

Please reference the financial narrative document.
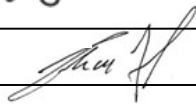
Provost's Signature: *G. Rodriguez* **Date:** 02/28/2022

Chief Business Officer's Signature: **Date:** 02/28/2022

COST AND REVENUE PROJECTIONS NARRATIVE
UNIVERSITY OF WISCONSIN-STOUT
BACHELOR OF SCIENCE IN CYBERSECURITY

Introduction

      The proposed Bachelor of Science in Cybersecurity will integrate the curriculum from the well-established computer and information technologies focused programs at UW-Stout to produce qualified cybersecurity professionals to meet future industry and government needs. It expected to expand enrollment capacity within UW-Stout.

Section I – Enrollment

      Enrollment projections using headcount and FTE are shown in Tables 1 (face-to-face delivery) and 2 (online delivery), below, and Section I of the Cost and Revenue Projections worksheets. "New students" are those who have not previously enrolled at UW-Stout. "Continuing students" include students who are undecided, enrolled in undergraduate coursework, transfer students and part-time students who were enrolled at UW-Stout the previous academic year.

      By the end of Year 5, it is expected that 205 students will have enrolled in the face-to-face delivery program and 185 students will have enrolled in the online delivery program with 54 students (total) having graduated across both modes of the program. The average student retention rate is projected to be 73% (between 1st and 2nd year) and then 94% annually after that, as it is for all undergraduates at UW-Stout. Based on enrollment patterns at UW-Stout, the average FTE/headcount percent was 92% in FY21. The incorporation of retention rates and/or FTE rates in the enrollment projections results in continuing headcount and new and continuing FTE numbers that have decimals which have been rounded in Table 1 and Table 2.

Table 1: Five-Year Academic Degree Program Enrollment Projections for Face-to-Face Delivery

Students/Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
New Students Headcount	15	30	45	55	60
Continuing Headcount		11	32	63	90
New Students FTE	14	28	41	51	55
Continuing Students FTE		10	30	58	83
Total Enrollment FTE	14	38	71	109	138
Graduating Students	0	0	0	9	18

Table 2: Five-Year Academic Degree Program Enrollment Projections for Online Delivery

Students/Year	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027
New Students Headcount	15	30	40	45	50
Continuing Headcount		11	32	59	80
New Students FTE	14	28	37	41	46
Continuing Students FTE		10	30	55	73
Total Enrollment FTE	14	38	66	96	119
Graduating Students	0	0	0	9	18

Section II – Credit Hours

Credit hours in Section II of the worksheet were calculated by prorating the 80 core program credits across 4 years. The resulting 20 program credits per year were multiplied by the student headcount to determine credit hours.

The 80 core program credits required in the B.S. in Cybersecurity program will be taught primarily by the faculty in the Department of Mathematics, Statistics and Computer Science with some elective credits being offered by other departments within the College of Science, Technology, Engineering, Mathematics and Management. All 80 credits of required coursework are currently offered in support of existing programs. The 80 program core credits combined with 40 general education credits results in a 120-credit program.

Section III – Faculty and Staff Appointments

The proposed B.S. in Cybersecurity program will draw on current expertise from the Department of Mathematics, Statistics and Computer Science faculty. While the coursework for the program exists, it is anticipated that, as enrollment increases, new staffing will be needed to support new sections of face-to-face and online coursework.

The Program Director, an existing faculty member, will be provided a quarter FTE reassignment with 0.20 FTE instructional load backfilled by instructional staff in Year 1 through Year 5. FTE for the instructional backfill for the program director has been divided evenly between the face-to-face program and the online program.

For the face-to-face offering of the program, anticipated growth is expected to require 0.25 FTE of new faculty and 0.13 FTE of new instructional staffing in Year 2; 0.13 FTE of new faculty and 0.60 FTE of new instructional staffing in Year 3; 1.00 FTE of new faculty and 0.03 FTE of new instructional staffing in Year 4; and 0.40 FTE of new instructional staffing in Year 5.

For the online offering of the program, anticipated growth is expected to require 0.13 FTE of new instructional staffing in Year 1; 0.33 FTE of new instructional staffing in Year 2; 0.88 FTE of new faculty in Year 3; 0.13 FTE of new faculty and 0.63 of new instructional staffing in Year 4; and 0.50 FTE of new instructional staffing in Year 5. No further faculty needs are anticipated until future program enrollments warrant additional class needs.

Section IV – Program Revenues

Tuition Revenues: The projected program revenue has been calculated by multiplying the total student FTE times the program credit hours, times the tuition. With the fully online program using a service-based, cost recovery tuition model, modest tuition increases may occur each year for the fully online program, as modeled below, to account for potential increases in costs. Tuition rates are also intended to be driven by market forces. Tuition rates will be reviewed annually, with consideration given to current costs and the competitive landscape. Note the FTE numbers below are rounded, potentially resulting in slight discrepancies with the stated total revenue as seen in the Cost and Revenue worksheets.

Traditional face-to-face (less than 50% online) program:

1. Year-1, $64,532: 13.8 FTE x 20 credits @ $233.81 per credit.
2. Year-2, $176,171: 37.7 FTE x 20 credits @ $233.81 per credit.
3. Year-3, $332,092: 71.0 FTE x 20 credits @ $233.81 per credit.
4. Year-4, $508,128: 108.7 FTE x 20 credits @ $233.81 per credit.
5. Year-5, $647,358: 138.4 FTE x 20 credits @ $233.81 per credit.

Customized Instruction (fully online) program:

1. Year-1, $110,400: 13.8 FTE x 20 credits @ $400.00 per credit.
2. Year-2, $307,420: 37.7 FTE x 20 credits @ $408.00 per credit.
3. Year-3, $552,594: 66.4 FTE x 20 credits @ $416.00 per credit.
4. Year-4, $814,966: 96.1 FTE x 20 credits @ $424.00 per credit.
5. Year-5, $1,031,307: 119.4 FTE x 20 credits @ $432.00 per credit.

Program Revenue (PR): There will not be any PR generated or allocated from other units to offset the program costs.

Section V – Program Expenses

<u>Expenses – Salary and Fringe</u>: Faculty salaries were calculated as follows:

The average annual salary of discipline-appropriate faculty within the Mathematics, Statistics and Computer Science Department is anticipated to be $85,000 in Year 1, with instructional academic staff (IAS) at $61,000. A 2% pay raise was added for each year. The FTE and the 2% annual pay raise amounts listed are rounded, leading in some cases to minor discrepancies compared to the tabulated estimates in the amounts below and the UWS Budget document.

Expenses for the program director (0.2 FTE instructional backfill and $2,500 annual stipend) have been divided evenly between the face-to-face program and the online program (0.10 FTE backfill and $1,250 stipend annually in each case).

Face-to Face Program: Salaries plus fringe costs at the standard 38.2% System rate.

Year 1 expenses were calculated multiplying $61,000 by the new IAS expense of 0.1 FTE ($6,100); adding $1,250 for the program director stipend; and adding fringes at 38.2% ($2,805).

Year 2 expenses were calculated multiplying $62,220 by the new IAS expense of 0.13 FTE ($8,296); multiplying $86,700 by the new faculty expense of 0.25 FTE ($21,675); adding fringes at 38.2% ($11,440); and adding the continued new expenses (adjusted for salary increases) from year 1 ($10,324).

Year 3 expenses were calculated multiplying $63,464 by the new IAS expense of 0.60 FTE ($38,079); multiplying $88,434 by the new faculty expense of 0.13 FTE ($11,054); adding fringes at 38.2% ($18,754); and adding the continued new expenses (adjusted for salary increases) from year 2 ($52,735).

Year 4 expenses were calculated at $90,202 for 1.00 new faculty; multiplying $64,734 by the new IAS expense of 0.033 FTE ($2,158); adding fringes at 38.2% ($35,254); and adding the continued new expenses (adjusted for salary increases) from year 3 ($123,000).

Year 5 expenses were calculated multiplying $66,028 by the new IAS expense of 0.40 FTE ($26,411); adding fringes at 38.2% ($10,081); and adding the continued new expenses (adjusted for salary increases) from year 4 ($255,592).

Online (Customized Instruction) Program: Salaries plus fringe costs at the standard 38.2% System rate.

Year 1 expenses were calculated multiplying $61,000 by the new IAS expense of 0.23 FTE ($14,233); adding $1,250 for the program director stipend; and adding fringes at 38.2% ($5,900).

Year 2 expenses were calculated multiplying $62,220 by the new IAS expense of 0.33 FTE ($20,740); adding fringes at 38.2% ($7,916); and adding the continued new expenses (adjusted for salary increases) from Year 1 ($21,787).

Year 3 expenses were calculated multiplying $88,434 by the new faculty expense of 0.88 FTE ($77,380); adding fringes at 38.2% ($29,536); and adding the continued new expenses (adjusted for salary increases) from Year 2 ($51,417).

Year 4 expenses were calculated multiplying $64,734 by the new IAS expense of 0.63 FTE ($40,988); multiplying $90,202 by the new faculty expense of 0.13 FTE ($11,275); adding fringes at 38.2% ($19,953); and adding the continued new expenses (adjusted for salary increases) from Year 3 ($161,465).

Year 5 expenses were calculated multiplying $66,028 by the new IAS expense of 0.50 FTE ($33,014); adding fringes at 38.2% ($12,602); and adding the continued new expenses (adjusted for salary increases) from Year 4 ($238,330).

Other Expenses: The campus overhead expense is 26.74% of the administration overhead rate based on the total revenue of the program. In Year 5, estimated expenses ($8,000 total) are included for potential ABET accreditation costs. There are no other additional expenses for the traditional face-to-face program. For the customized instruction program, as cost recovery, a small annual expense of $200 per staff FTE is included for supplies, along with $3,000 annually to support marketing of the program. As enrollments grow and to support expanded online offerings, additional facilities work, and equipment are anticipated beginning in Year 3. This also includes regular updating and upgrades to align with the advances in the curriculum.

Section VI – Net Revenue
The net revenue is projected to be positive for the first year of the program and is generally projected to continue to rise as enrollment numbers grow, with dips as new faculty are hired. Any net revenue will be reinvested into the program and the institution.

University of Wisconsin-Stout
P.O. Box 790
Menomonie, WI 54751-0790

715/232-2421 office
provost@uwstout.edu

January 6, 2022   *(via electronic mail)*

Tommy Thompson, President
University of Wisconsin System Administration
1720 Van Hise Hall, 1220 Linden Drive
Madison, WI 53706

Dear President Thompson:

I am writing to provide you with this Letter of Commitment in support of the University of Wisconsin-Stout's proposed B.S. in Cybersecurity degree.

As the nation's first four-year university to earn the prestigious NIST Malcolm Baldrige National Quality Award, the first four-year university in the State of Wisconsin to receive the designation of National Center of Academic Excellence in Cyber Defense by the National Security Agency and the Department of Homeland Security, and as Wisconsin's Polytechnic University, this proposed program will allow UW-Stout to continue providing leadership and innovation to produce qualified cybersecurity professionals and meet future industry and government needs. The proposed program leverages well-established computer and information technologies programs at UW-Stout and aligns with our overall strategic plan. The program will build on existing student enrollment, curriculum, facilities, and faculty and staff expertise in the College of Science, Technology, Engineering, Mathematics and Management. A financial review has been conducted to confirm that the necessary financial and human resources are available to launch this proposed program in the context of the current Covid crisis.

The development of the program responds to the increased market and student demand for cybersecurity knowledge and skills. The global cybersecurity workforce is anticipated to be short 1.8 million people by 2022, despite cybersecurity being one of the best financially compensated technology-related careers. There are over 250 students in computer and information technologies programs at UW-Stout that offer various components of cybersecurity-related curriculum. This proposed program will enhance current offerings at UW-Stout by providing a

Malcolm Baldrige
National Quality Award
2001 Award Recipient

UNIVERSITY OF WISCONSIN-STOUT
P.O. Box 790 I Menomonie, WI 54751
www.uwstout.edu

degree that focuses on all aspects of cybersecurity, including security of data, software, component, connection, and systems, as well as human, organizational, and societal security. It complements UW-Stout's program array due to its focus on developing students for careers through applied curriculum and aligns with UW-Stout's designation as Wisconsin's Polytechnic University.

The proposed degree has been approved through the campus curriculum approval process. Governance groups confirmed that the design of the proposed program meets the definition and standards of quality at UW-Stout. All programs at UW-Stout participate in the biannual Assessment in the Major and the four-year Planning and Review Committee review to support continuous improvement. Assessment of the student learning objectives will be coordinated by the program director in collaboration with the faculty, staff and the program industry advisory committee.

Thank you for consideration and support of this new program.

Sincerely,

Glendalí Rodríguez
Provost and Vice Chancellor for Academic Affairs

attachment

GR/tb
Letters 2022

NEW PROGRAM AUTHORIZATION (IMPLEMENTATION) BACHELOR OF SCIENCE IN BUSINESS ANALYTICS, UW-SUPERIOR

REQUESTED ACTION

Adoption of Resolution C.6., authorizing the implementation of the Bachelor of Science in Business Analytics at the University of Wisconsin-Superior.

Resolution C.6.: That, upon the recommendation of the Chancellor of the University of Wisconsin-Superior and the President of the University of Wisconsin System, the Chancellor is authorized to implement the Bachelor of Science in Business Analytics at the University of Wisconsin-Superior.

SUMMARY

The University of Wisconsin–Superior proposes to establish a Bachelor of Science (B.S.) in Business Analytics. The development of this program aligns with the UW-Superior mission and strategic plan to "provide distinctive and high-quality academic experiences that respond to the needs of students and the region." The program will fill student demand for a multi-disciplinary major that prepares students to make data-driven decisions and to engage in and address complex issues in the business world. Business Analytics is used in most industries including health care, retail, technology, finance, transportation, and operations. There is a rising market demand regionally, nationally, and internationally for individuals with skills related to business analytics. According to the Bureau of Labor Statistics projections, business analytics-relevant occupations have faster than average growth. The B.S. in Business Analytics will be comprised of 120 credits, which will include 63 credits in the major. These will include 33 credits of business core courses that are required for all majors in the School of Business and 30 credits of coursework in data visualization, database development and utilization, data mining, business forecasting, simulation-based decision making, and statistical analysis. Students in the Business Analytics program will benefit from several High Impact Practices, including Senior Year Experience (capstone) courses and projects and experiential learning and community-based learning through required internships.

Presenter

- Dr. Maria Cuzzo, 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 March 19, 2021), 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 BUSINESS ANALYTICS
AT UNIVERSITY OF WISCONSIN-SUPERIOR
PREPARED BY UW-SUPERIOR

ABSTRACT

The University of Wisconsin–Superior proposes to establish a Bachelor of Science (B.S.) in Business Analytics. The development of this program aligns with the UW-Superior mission and strategic plan to "provide distinctive and high-quality academic experiences that respond to the needs of students and the region." The program will fill student demand for a multi-disciplinary major that prepares students to make data-driven decisions and to engage in and address complex issues in the business world. Business Analytics is used in most industries including health care, retail, technology, finance, transportation, and operations. There is a rising market demand regionally, nationally, and internationally for individuals with skills related to business analytics. According to the Bureau of Labor Statistics projections, business analytics-relevant occupations have faster than average growth. The B.S. in Business Analytics will be comprised of 120 credits, which will include 63 credits in the major. These will include 33 credits of business core courses that are required for all majors in the School of Business and 30 credits of coursework in data visualization, database development and utilization, data mining, business forecasting, simulation-based decision making, and statistical analysis. Students in the Business Analytics program will benefit from several High Impact Practices, including Senior Year Experience (capstone) courses and projects and experiential learning and community-based learning through required internships.

PROGRAM IDENTIFICATION

University Name
University of Wisconsin-Superior

Title of Proposed Academic Degree Program
Business Analytics

Degree Designation(s)
Bachelor of Science

Mode of Delivery
Single university; Face-to-face delivery

Department or Functional Equivalent

School of Business & Economics. The organizational structure at UW-Superior comprises a single Academic Affairs unit, housing 11 academic departments. The School of Business and Economics is one of these departments.

College, School, or Functional Equivalent

Academic Affairs

Proposed Date of Implementation

September 2022

Projected Enrollments and Graduates by Year Five

The development of a B.S. in Business Analytics represents a new, distinct area of growth for the university, attracting students to UW-Superior who might not have otherwise attended the institution. The Executive Director of Admissions referenced enrollment trends at UW-Superior and national projections to establish projected enrollment figures for new enrollees. Table 1 represents enrollment and graduation projections for students entering the program over the next five years. The three continuing students in Year 1 reflect those current UW-Superior students who are either undeclared or have declared a different major who would change to Business Analytics.

Table 1: Five-Year Academic Degree Program Enrollment Projections

Students/Year	Year 1	Year 2	Year 3	Year 4	Year 5
New Students	7	14	18	22	25
Continuing Students	3	7	15	23	29
Total Enrollment	10	21	33	45	54
Graduating Students		1	1	3	5

Projections for new student retention are based on the current UW-Superior's year-to-year retention rate average, which is approximately 70%. UW-Superior offers an array of academic and student support services such as bridge programming, tutoring, supplemental instruction, emergency assistance, and counseling services. Additionally, UW-Superior has recently implemented a Student Success Initiative, focusing on identifying key obstacles in student retention and graduation and developing effective strategies to address them. This work began in February 2022, with an extensive data summit, hosted by the Provost and Office of Institutional Research and attended by key leaders in Academic Affairs and Student Affairs (e.g., department chairs, Dean's Office staff, and Dean of Students staff). From this first summit, smaller working groups will be developed to address key patterns that emerged from the data summit. This work will also supplement and enhance the campus-wide efforts outlined in the Forward Superior Strategic Goals, specifically those that focus on strengthening academic advising, removing barriers for

students to be successful in their courses, and addressing obstacles outside of the classroom that can impede students' progress. UW-Superior is committed to improving student retention and graduation rates, for all academic degree programs. By the end of Year 5, it is expected that 86 students will have enrolled in the program and 10 students will have graduated from the program.

Given the enrollment profile of UW-Superior students, some students may stop-out and re-enter the program in a subsequent year. Going out to Year 7 it is expected that the enrollment of students will stabilize at 64 students each year. It is expected that overall retention and completion will improve so that 25 new students and 39 continuing, reentry or transfer students will enroll in the program each year. Consequently, the number of graduates is expected to reach and exceed eight graduates each year.

Tuition Structure

For students enrolled in the B.S. in Business Analytics program, standard tuition and fee rates will apply. For the current academic year, residential tuition and segregated fees total $4,077.57 per semester for a full-time student enrolled in 12 to 18 credits per semester. Of this amount, $3,267.72 is attributable to tuition and $809.85 is attributable to segregated fees. Based on 15 credits, this equates to $217.85 per credit. Nonresident tuition and segregated fees total $7,864.05 per semester for a full-time student enrolled in 12 to 18 credits per semester. Of this amount, $7,054.20 is attributable to tuition and $809.85 is attributable to segregated fees.

DESCRIPTION OF PROGRAM

Overview of the Program

The B.S in Business Analytics will be a multi-disciplinary program, working with the support of the Department of Mathematics & Computer Science and Communication Arts. This program would include a sequence of courses for students with strong analytical and quantitative abilities that they desire to use in a business environment.

The program will be comprised of 120 credits, which will include 42 credits in the University Studies program (UW-Superior's general education program). Major requirements include 33 credits of business core courses that are required for all majors in the School of Business (SBE). Students will be required to complete an additional 30 credits of coursework across a wide range of topics including data visualization in business, database development and utilization, data mining, business forecasting, simulation-based decision making in business, regression analysis, and business statistics, for a total of 63 credits in the major. Students will complete approximately 15 credits of elective coursework. Students in the Business Analytics program will benefit from several High Impact Practices, including Senior Year Experience (capstone) courses and projects as well as experiential learning and community-based learning through required internships.

Student Learning Outcomes and Program Objectives

The B.S. in Business Analytics will provide students with strong analytical and quantitative abilities that are necessary in a business environment. Students will develop new insights and understanding of business performance based on the data and statistical methods. They will be prepared to apply their learning to help business managers make optimal decisions and solve problems. Students will learn to use analytical and visualization tools to make important decisions and solve complex problems in the world of data. Students completing the B.S. in Business Analytics will gain the ability to:

1. Identify business problems and opportunities using business analytic tools and techniques.
2. Apply creative and critical thinking using data, information, statistics, and analytical models to solve business-related problems.
3. Propose business solutions using data-driven decision-making process.
4. Communicate the recommendations and solutions to the various stakeholders.

The program curriculum will engage students to study the past through descriptive analytics, predict what will happen, explain why it will happen, prescribe a solution, or make recommendations based on analysis, and utilize a wide range of software for analysis.

Program Requirements and Curriculum

The B.S. in Business Analytics is open to all undergraduate students admitted to UW-Superior. There are no specific program admission requirements or prerequisites. Table 2 illustrates the 120-credit program curriculum for the proposed program. Up 6 credits of coursework completed for the Business Core section of the major may be applied to meeting select University Studies program requirements (e.g., MATH 151 can meet the Mathematics and Computer Science requirement; ECON 250 can contribute to the Social Sciences knowledge requirement). Courses labeled BUS XXX are in development and will be assigned course numbers upon final approval.

Table 2: Bachelor of Science in Business Analytics Program Curriculum
University Studies courses required for graduation

Academic and Professional Writing	6 credits
Communicating Arts	3 credits
Mathematics and Computer Science	3 credits
Health and Human Performance	3 credits
Knowledge Category – Humanities	9 credits
Knowledge Category – Social Sciences	6 credits
Knowledge Category – Natural and Physical Sciences	6 credits
Knowledge Category – Fine and Applied Arts	6 credits
Diversity and Global Awareness - 3 credits for each and may be completed through designated courses within the Knowledge Categories, Major, Minor, or electives.	6 credits

Academic degree program or major course requirements (63 credits)

I.   Business Core (33 credits)

MATH 151, *or*	Calculus for Business, Life, and Social Sciences	3 credits
MATH 240	Calculus and Analytic Geometry I	4 credits
BUS 101	Introduction to Business	3 credits
ECON 250	Principles of Microeconomics	3 credits
ECON 251	Principles of Macroeconomics	3 credits
ACCT 200	Financial Accounting	3 credits
ACCT 201	Managerial Accounting	3 credits
BUS 211	Business Law	3 credits
BUS 270	Business Statistics	3 credits
BUS 380	Principles of Management	3 credits
BUS 370	Principles of Marketing	3 credits
FIN 320	Principles of Finance	3 credits

II.   Major Requirements (21 credits)

BUS 2XX	Business Intelligence	3 credits
BUS 306	Management Science	3 credits
BUS 3XX	Applied Business Statistics and Regression	3 credits
BUS 3XX	Business Forecasting	3 credits
BUS 3XX	Data Visualization in Business	3 credits
BUS 3XX	Data Mining for Business (Capstone)	3 credits
CSCI 356	Database Systems	3 credits

III. Major Electives (9 credits, a minimum of 3 three-credit courses from this category)

ACCT 357	Accounting Information Systems	3 credits
BUS 3XX	Simulation for Business Decision Making	3 credits
BUS 400	Internship	3 credits
BUS 4XX	Marketing Analytics	3 credits
TRSP 3XX	Supply Chain Analytics	3 credits
ECON 370	Data Exploration & Economics Analysis	3 credits
ECON 470	Applied Economics Analysis	3 credits
COMM 370	Organizational Communication	3 credits
CSCI 101	Introduction to Computer Science	3 credits

Additional Electives	**15 credits**
Total Credits	**120 credits**

Assessment of Outcomes and Objectives

UW-Superior requires all academic majors to perform outcome-based assessment of student learning on an annual basis. Capstone measures will be collected through qualitative analysis of student work in the capstone experience supplemented by student exit interviews. Each year the Capstone will be evaluated through university assessment goals, creating alignment with the university as a whole, and all programs within. The program will further assess student preparation for professional careers through annual surveys of internship supervisors should a student choose to complete an internship, graduates of the program, and those who employ graduates of the program.

Based on the results of this annual assessment, modifications will be made to either the structure of the curriculum, the content/skill development focus of courses, or other pedagogical or experiential elements of courses that are determined to be needed, to best prepare students for success. The contributing departments to the proposed Business Analytics major have strong records of implementing curricular modification when needed to support continuous improvement and assessment efforts.

Diversity

The Business Analytics major prepares students for a wide range of careers that involve engagement in the workplace in analytical, consultative, and leadership roles. Developing the knowledge and ability to effectively communicate and collaborate within a diverse workplace, regardless of role or function, is a critical skill for the successful application of program knowledge and career advancement. Furthermore, it is important for analysts to be aware of equity implications when collecting and organizing data and choosing methodologies. As such, this degree emphasizes inclusivity and cross-cultural competence as reflected though several key student learning outcomes: the gathering of data from disparate sources; collaboration with business partners and subject matter experts; working as a part of and in support of a team; developing interpersonal skills; identifying critical trends; providing actional business insights to senior leadership and other stakeholders; assuring the quality of analysis; and clear, concise presentation of findings and storylines.

The B.S. in Business Analytics will support experiential and community-based learning, partnering with local businesses and organizations to provide student internship opportunities. These partnerships include minority- and women-owned companies, across for-profit, non-profit, and service-based organizations. Students will experience different perspectives and approaches through interactions with these partners and will be presented with opportunities to engage with diverse customer groups. The level of applied of knowledge students acquire in the program will add to the dimensions of their social development and practice in working in a wide range of different environments.

UW-Superior is committed to creating a diverse and inclusive environment and is committed to the success of individuals in the UW-Superior community. The university's Strategic Plan includes strategies specific to implementing programs to improve access, inclusion, and retention.[1,2] Within its student body, the program actively pursues equity across recruitment, access, retention, and degree completion activities. In conjunction with the campus enrollment office, recruitment for the Business Analytics degree includes

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[1] UW-Superior Strategic Plan for Equity, Diversity and Inclusion. Located at https://www.uwsuper.edu/edi/equity-diversity-inclusion-plan/upload/Equity-Diversity-Inclusion-Booklet-3-5-18.pdf
[2] Superior Visions 2020. Located at https://www.uwsuper.edu/strategic-plan/superiorvisions2020.cfm

greater emphasis on women in STEM with the goal of narrowing the gender gap and increasing female representation in the field. In addition, the campus supports international students from over 30 countries, and the Business Analytics program will work with the UW-Superior Office of Intercultural Student Success to ensure access and support is provided through the pursuit of the degree. The program also serves first generation college students from all backgrounds, with campus representation of this group at approximately 40% of the total student enrollment. The UW-Superior Educational Success Center offers tutoring (in-person and virtually) and disability support services. The Equity, Diversity, and Inclusion Office provides programming and support to students for a broad range of identity and inclusion topics (gender, culture, veterans, nontraditional status). The investment UW–Superior has made across this array of units has led to an 8% increase in students of color enrollment in the past five years.[3]

The Business Analytics major also emphasizes diversity, equity, and inclusion in teaching, with a diverse existing faculty and staff. Students will have classes throughout their program progression with nearly every member of faculty and academic staff in the School of Business and Economics, allowing them to experience different perspectives and ideas. Additional hiring of faculty continues to prioritize diversity in screening and hiring decisions, and the overall culture that students are exposed to is respectful, inclusive, and vibrant.

The university's current strategic initiatives place high value on experiential and community-based learning, which is woven into this program through its community partnerships, internships, interactional classroom experiences, and group projects and interactions. In addition, the university emphasizes three goals in assessing programs: communication, individual and social responsibility, and critical and creative thinking. Each course in the proposed Business Analytics program integrates these factors into the curriculum. Students will be presented with numerous opportunities to practice in the real-world setting.

Collaborative Nature of the Program

UW-Superior has long-established formal and informal transfer arrangements and articulation agreements with several 2-year institutions in Wisconsin, such as Northwood Technical College. Furthermore, articulation agreements for the Associate in Science degree are already established for select Minnesota State Community and Technical Colleges. The university also maintains discipline-specific articulation agreements and transfer guides with regional tribal colleges such as Lac Courte Oreilles Community College. This situates UW-Superior to market this new major to students completing associate degrees at these institutions, having established successful relationships and processes. UW-Superior also has an established and well-utilized Prior Learning Assessment process that inclusively recognizes and supports of all the ways in which student learning and

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[3] UW-Superior Fact Book. Located at https://www.uwsuper.edu/ir/factbook/index.cfm

growth occurs. The Planning Team will invest in building on these foundations to ease the transfer/PLA process for students.

Projected Time to Degree

The B.S. in Business Analytics is designed to be completed in four years of full-time study. Per the advising model adopted by the School of Business and Economics, students are strongly encouraged to complete 15 credits per semester. Students may also pursue the program on a part-time basis, completing their degree in a longer timeframe. Core courses will be sequenced and offered on an annual basis. At least one course in each elective category will be available every semester. Transfer students with an A.A./A.S. will be able to complete the degree in two years if they are full-time.

Program Review

UW-Superior has a comprehensive process for ongoing program review, which was recently updated in 2020. The entity charged with conducting the review process is the Academic Program Review Committee (APRC). The information is collected from each program and reviewed every four years to inform strategies for continuous institutional improvement. Upon the completion of the review, APRC sends the information to the Faculty Senate who then submits the information to the Provost and Dean of Academic Affairs. The purpose of the program review is:

- To identify the key strengths of the program, its contributions to the mission, and strategic priorities of UW-Superior and what it offers to the region.
- To reflect on and analyze the program's past performance, noting trends over the review period, including both successes and weaknesses.
- To reflect on and analyze how the program can address challenges to its program, identifying opportunities that could improve effectiveness and viability.
- To reflect on and identify strategies for growth including necessary monetary and non-monetary resources that would be necessary to undertake expansion.

The academic program review will allow the committee to review the effectiveness of the major to employ active learning approaches, implement High Impact Practices, engage in continuous improvement to stay modern and relevant, build student professional development, and engage the community, among other initiatives and priorities that may progress over time.

Accreditation

The Higher Learning Commission (HLC) has confirmed that this proposed program will not need individual approval. Rather, notification to HLC of the new program will be sufficient.

JUSTIFICATION

Rationale and Relation to Mission

The B.S. in Business Analytics planning team is composed of the SBE Director and four SBE faculty and staff members. The Planning Team collected and analyzed information from comparable programs and conducted research to determine the market and student demand for the proposed major. Once determined that there was high interest and a local need for this new degree program, the Planning Team collected information about the curriculum for the new program. Support of the proposed plan has been expressed by SBE, SBE Advisory Council, and UW-Superior Administration and the Planning Team has been permitted to plan the next steps for approval of the program.

The B.S. in Business Analytics will contribute directly to the mission of the UW System by preparing students with the technical skills necessary to be successful in the regional economy and beyond. This aligns with the UW System mission to extend knowledge and its application beyond the campus through the development of students heightened intellectual, cultural, and humane sensitivities, scientific, professional, and technological expertise, and a sense of purpose.

The UW-Superior mission states, "The University of Wisconsin-Superior fosters intellectual growth and career preparation within a liberal arts tradition that emphasizes individual attention, embodies respect for diverse cultures and multiple voices, and engages the community and region."[4] The proposed B.S. in Business Analytics program supports the university mission of UW-Superior by attracting high-quality students by ensuring to provide a skill set that continues to be in high demand. The program will build on inter-institutional relationships by combining various business fields with computer science, mathematics, statistics, and communication arts. This way the program will serve students who are interested in a career in business or a technical career with a strong business acumen. Furthermore, building community partnerships with local and regional businesses is an inherent characteristic of UW-Superior programming. UW-Superior has a strong reputation for serving the local community and surrounding counties with quality educational services. This program is designed to utilize these partnerships by exposing students to real-world problem solving and decision-making.

The proposed program at UW-Superior supports major themes in the university's Strategic Plan (Forward Superior), specifically Goal #1: "UW-Superior will provide distinctive and high-quality academic experiences that respond to the needs of students and the region." The program curriculum will provide many opportunities to students to learn through case studies, problem-based learning, applied research, simulations, and internship. This way Objective 1.1 "Ensure experiential learning opportunities are provided to students in all classes" will be addressed. In particular, this program will focus on

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[4] https://www.uwsuper.edu/about/mission-history.cfm

Objective 1.3 "Curate a vibrant and healthy array of academic programs and experiences that prepare students for varied and diverse professional and educational opportunities that reflect the needs of the region and beyond" by developing a curriculum that has high demand in the regional economy and beyond.

University Program Array

The B.S. in Business Analytics will be a valuable addition to the UW-Superior program array. The multi-disciplinary program will leverage coursework and expertise across departments and will be delivered with the support of the Department of Mathematics & Computer Science and the Department of Communication Arts. The curriculum will produce graduates that will meet the demand within the regional economy and local and regional businesses.

Other Programs in the University of Wisconsin System

No other UW university offers an undergraduate degree or program in Business Statistics, which will be the curricular focus of this program. Two UW institutions offer an undergraduate program in a similar curricular area. UW-Whitewater offers a B.B.A. in Business Analytics and UW-Stevens Point offers a B.S. in Data Analytics. The addition of this major will enable UW-Superior to train the local first-generation and rural community for fast growing business analytics related occupations. Furthermore, the development of a B.S. in Business Analytics at UW-Superior would expand the pool of potential applicants to graduate programs within the UW System, such as the M.S. in Business Analytics offered at UW-Madison and UW-Whitewater.

According to the market and student demand research conducted by the Planning Team, the new program has high potential to increase enrollment at UW-Superior and SBE. Aligning with the job market, the curriculum will attract students who want to develop a strong base with quantitative skills to UW-Superior.

Need as Suggested by Current Student Demand

To evaluate student demand, the Planning Team surveyed current UW-Superior students. Students in five courses, consisting of seven sections, were surveyed. In total, 141 students of various major, minors, undeclared, and levels responded to the survey.

Questions were asked to gauge the students' general knowledge of the subject and to assess current student demand. Of the students surveyed, 77% know about business analytics/data analytics and 94% believe business analytics is a valuable major. Although most students surveyed have already chosen their major(s), 7% of respondents are interested in having business analytics as their major while 33% are interested in a minor. Similarly, 14% of current students showed an interest in double majoring in Business Analytics which would strengthen the School of Business and Economics programs. Furthermore, 64% of the respondents said they would recommend a business analytics major to new students. Finally, 66% of surveyed students are interested in careers that

require business analytical skills. This implies that there is a demand among students for learning the relevant knowledge and acquiring the skill.

Findings of the survey show that the new program will not draw students away from other majors at the university. Rather, the proposed program will be useful in attracting new students. The new program will complement an already broad range of majors offered at UW-Superior.

Need as Suggested by Market Demand

Market research completed by the Business Analytics Planning team shows that there is a continuing and rising demand for individuals with skills related to business analytics.

Table 3: Business Analytics Relevant Occupational Employment Growth Projection for 2018-2028 by Bureau of Labor Statistics[5]

Occupation	USA	Wisconsin	2019 Median Wage
Market Research Analyst	20.4%	18.8%	$63,790
Management Analyst	13.5%	14.2%	$85,260
Operational Research Analyst	25.7%	26.2%	$84,810
Financial Analyst	6.2%	5.8%	$85,660
Logistics Analyst/Logistician	5%	7.8%	$74,750
Data Processing Systems Analyst	9%	8.1%	$90,920

According to the Bureau of Labor Statistics, jobs related to Business Analytics programs (i.e., Market Research Analyst, Management Analyst, Operational Research Analyst, Financial Analyst, etc.) are projected to have faster than average or as fast as the average growth from 2018-2028. The above-mentioned occupations related to business analytics are projected to have a faster than average or as fast as the average growth during the period 2018-2028.

Similarly, according to a 2018 report published by the National Association of Colleges and Employers, "By 2021, 67% of executives expect to choose job candidates with data skills over ones without. Yet only 23% of educators say their students will graduate with these skills." This implies there will be large unmet demand for data oriented analytical skills.[6] Information obtained by the Planning Team from job search websites confirms the high number of job opportunities related to business analytics. Glassdoor ranked the 2020 best jobs in the United States with Business Analyst being ranked #26 with

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[5] Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, https://www.bls.gov/ooh/.Data accessed July 2020

[6] Business Higher Education Forum (2017). Investing in America's data science talent: The case for action. See https://www.naceweb.org/uploadedfiles/files/2018/publication/free-report/bhef-investing-in-data-science.pdf. Accessed July 2020

more than 13,000 jobs.[7] Monster.com showed 10,037 jobs in the United States with 208 of those being in Wisconsin.[8] Indeed.com advertised 20% of the openings as entry level.[9]

Finally, the Advisory Council for the School of Business and Economics includes regional business and industry experts and leaders, who have indicated strong support for the development of this program at UW-Superior. These business leaders and employers see the addition of the proposed major as necessary to preparing an informed and skilled workforce, as needed in the current and future labor market.

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[7] See https://www.glassdoor.com/List/Best-Jobs-in-America-LST_KQ0,20.htm. Data accessed July 2020
[8] See https://www.monster.com/jobs/search/?q=Business-Analyst.Data accessed July 2020
[9] See https://www.indeed.com/jobs?q=business+analyst&l=Wisconsin.Data accessed July 2020

	Items	Projections				
University of Wisconsin - Superior Cost and Revenue Projections For BS in Business Analytics						
		2022-23	2023-24	2024-25	2025-26	2026-27
		Year 1	Year 2	Year 3	Year 4	Year 5
I	**Enrollment (New Student) Headcount**	7	14	18	22	25
	Enrollment (Continuing Student) Headco	3	7	15	23	29
	Enrollment (New Student) FTE	7	14	18	22	25
	Enrollment (Continuing Student) FTE	3	7	15	23	29
II	**Total New Credit Hours**	18	42	93	168	229
	Existing Credit Hours	102	210	441	456	531
III	**FTE of New Faculty/Instructional Staff**					
	FTE of Current Fac/IAS	0.5	0.75	1	1	1
	FTE of New Admin Staff					
	FTE Current Admin Staff					
IV	**Revenues**					
	From Tuition	$26,142	$54,898	$116,332	$135,938	$165,566
	From Fees					
	Program Revenue (Grants)					
	Program Revenue - Other	$12,000	$4,000			
	GPR (re)allocation	$38,600	$57,900	$77,200	$77,200	$77,200
	Total New Revenue	$76,742	$116,798	$193,532	$213,138	$242,766
V	**Expenses**					
	Salaries plus Fringes					
	Faculty/Instructional Staff	$38,600	$57,900	$77,200	$77,200	$77,200
	Other Staff					
	Other Expenses					
	Facilities					
	Equipment					
	Other (Marketing)	$1,500	$1,500	$1,500	$1,500	$1,500
	Other (Course development)	$12,000	$4,000			
	Total Expenses	$52,100	$63,400	$78,700	$78,700	$78,700
VI	**Net Revenue**	$24,642	$53,398	$114,832	$134,438	$164,066

Submit budget narrative in MS Word Format

Provost's Signature:	**Date:**
	12/14/2021
Chief Business Officer's Signature:	**Date:**
	12/17/2021

COST AND REVENUE PROJECTIONS NARRATIVE
UNIVERSITY OF WISCONSIN-SUPERIOR
BACHELOR OF SCIENCE IN BUSINESS ANALYTICS

Introduction

The B.S. in Business Analytics represents a new, distinct area of growth for UW-Superior, attracting students who might not have otherwise attended the institution. The B.S. in Business Analytics will be comprised of 120 credits, which will include 63 credits in the major, 42 credits of University Studies requirements, and 15 credits of electives. The program has no unique program characteristics that would impact budget projections. There is a rising market demand regionally, nationally, and internationally for individuals with skills related to business analytics. According to the Bureau of Labor Statistics projections, business analytics-relevant occupations have faster than average growth.

Section I – Enrollment

Enrollment projections are based on each headcount being one student FTE, as it is expected most students will enroll in the program full-time.

These enrollment projections were developed by reviewing multiple sources of data and through collaboration between the Business Analytics planning team and the Executive Director of Admissions at UW-Superior. The Executive Director of Admissions referenced enrollment trends at UW-Superior and national projections to establish projected enrollment figures for new enrollees. These values were augmented by survey research conducted on existing UW-Superior students. Students in five courses, consisting of seven sections, were surveyed. In total, 141 students of various majors (including undeclared), minors, and year-levels responded to the survey. Of the respondents, 7% were interested in having business analytics as their major. These projections emphasize the expectation that the proposed Business Analytics degree program will draw new students to UW-Superior, who would not otherwise have attended UW-Superior, and only a handful of students will switch from a currently declared major to Business Analytics (as supported by the survey results from current students; current UW-Superior students in business-focused majors indicated being content with their current major).

UW-Superior's average year-to-year retention rate is approximately 70%; a 0.7 multiplier was used to calculate continuing students in the projected enrollment section.

Section II – Credit Hours

The curriculum for the B.S. in Business Analytics consists of 63 credits, comprised of core courses (33 credits), major requirements (21 credits), and major electives (9 credits). All core courses already exist at UW-Superior. About half of the major requirements and elective options already exist and the other half will need to be developed. For the existing courses, enrollment room exists for new Business Analytics students to take these courses;

new sections of existing courses are not projected to be needed, based on current enrollment trends.

To determine the credit hours, this spreadsheet assumed students would follow the courses outlined in the Business Analytics four-year planning sheet; the four-year plan for students in the proposed degree program assumes a 15-credit course load each semester. By following the semester-by-semester course plan, it was determined when students would take the different courses for the Business Analytics degree program. For example, a student would take the following:

- Year 1: 3 core courses, 0 major requirements and/or major elective courses
- Year 2: 5 core courses, 1 major requirement and/or major elective courses
- Year 3: 3 core courses, 4 major requirements and/or major elective courses
- Year 4: 0 core course, 5 major requirements and/or major elective courses

This method was used to determine the courses and credit hours per student and then multiplied by the number of students based on which year of study they were in. All major requirement courses and major elective courses were deemed to be new credits hours. All core courses are considered existing credit hours.

Section III – Faculty and Staff Appointments

All B.S. in Business Analytics required courses will be taught by faculty and staff who already teach at UW-Superior. The major will be housed in the School of Business and Economics (SBE). In addition to faculty from SBE, one major requirement course and two major elective courses will be taught by the Math & Computer Sciences (CSCI 101) and Communication Arts (COMM 371) departments; these departments are able to accommodate the additional enrollment without additional staffing. The current faculty FTE represented in the budget represents an individual who will be responsible for developing and delivering the courses. This will equate to 0.5 FTE in Year 1 and will increase to 1.0 FTE in Year 3. In the first two years of the program, the faculty will have a course re-assignment for professional development and will teach courses not specific to the proposed Business Analytics program. Time will increase after the first two years, as the full course load for the proposed degree enters the rotation of offerings within SBE. No additional faculty or staff positions are required to implement and sustain this major.

Section IV – Program Revenues

The figures below illustrate new revenues that will be generated as a result of the new B.S. in Business Analytics major and existing revenues that will be redirected to support it. No new additional UW System funding will be requested for this major.

Tuition Revenues

For students enrolled in the B.S. in Business Analytics program, standard tuition and fee rates will apply. For the current academic year, residential tuition and segregated fees total $4,077.57 per semester for a full-time student enrolled in 12 to 18 credits per semester. Of this amount, $3,267.72 is attributable to tuition and $809.85 is attributable to segregated fees. Based on 15 credits (per the advising model adopted by the School of Business and Economics, which strongly encourages students to complete 15 credits per semester), this equates to $217.85 in tuition per credit. To calculate projected revenue, the total credit hours per year was multiplied by the credit cost of tuition.

The current revenue projections are conservative as the calculations assume all tuition generated will be at the Wisconsin resident rate. Nonresident students would generate additional revenue.

Program Revenue (PR)

The cost associated with course development will be supported from funds generated by the participation of the School of Business and Economic participation in the UW Extended Campus Collaborative programs partnership. There are no program/course fees, grants/extramural funding, or additional GPR funding.

Section V – Program Expenses

As this program utilizes existing campus resources, there are minimal new program expenses.

Salary and Fringe Expenses

All courses will be taught by existing faculty and staff at UW-Superior. No additional faculty or staff positions are required to implement and sustain this major. The funding for the FTE attributed to the proposed Business Analytics is provided through GPR reallocation.

Other Expenses

There will be eight new courses not previously offered by the university. These new courses will need to be developed at a cost of $2,000 per course. Six courses will be developed in Year 1 (requiring $12,000 in expense) and the two remaining courses will be developed in Year 2 (requiring $4,000 in expense). Also, marketing costs will be allocated at $1,500 per year to market this new program.

Section VI – Net Revenue

The program is projected to be self-sufficient within the first year of implementation. New revenues generated will cover the program expenses, as well as positively contribute to the university's general fund.

UNIVERSITY *of* WISCONSIN

Superior

December 14, 2021

President Tommy Thompson
University of Wisconsin System Administration
1720 Van Hise Hall, 1220 Linden Drive
Madison, WI 53706

RE: Provost Letter of Support for UW-Superior Business Analytics major

Dear President Thompson:

I am writing to provide this letter of commitment in support of the proposed B.S. in Business Analytics. This new major will add a unique and distinctive offering to the UW-Superior program array and ensure that the needs of employers in the northern region for employees with these skills will be met.

The program has been designed to meet the university's definition and standards of quality and will make a meaningful contribution to the university's select mission, overall academic plan, and academic degree program array. It is designed as a 120-credit interdisciplinary undergraduate major which includes 63 credits in the major, UWS University Studies program of 42-48 credits and additional electives in multiple disciplines (9-15 credits). The development of this degree corresponds to the need for a major that will prepare students in making data-driven decisions and tackling the complex and multi-faceted issues in the business world today. These skills are used in many industries including health care, retail, technology, finance, transportation and operations. There is a rise in market demand both regionally and nationally for individuals with skills related to business analytics. According to the Bureau of Labor Statistics, business analytics relevant occupations have faster than average growth rates. This degree is timely, efficient and appealing in its relevance to the current needs of employers in the region. The inclusion of the University Studies program ensures that the students receive a strong foundation in the liberal arts. It will add to and enhance our already strong portfolio in Business and Economics fields.

The program will be delivered in face-to-face format on campus. There is an assessment plan in place and this program will be evaluated every four years through the UW-Superior academic program review process. These results are reported out to UW-System on a regular basis.

There is university wide support for this program as evidenced by approvals from the School of Business and Economics and numerous governance layers of review for quality assurance including

Undergraduate Academic Affairs Council (UAAC), Planning and Budgetary Council (PBC) and Faculty Senate. The program has also been vetted and approved by the Chancellor, Provost and Dean of Academic Affairs & Graduate Studies. All of these councils are public bodies so the campus has had the opportunity to learn of this new major proposal.

The necessary financial and human resources are in place to implement and sustain the program. A new academic line was approved in 2020-2021 and will be hired by the time this major is approved. Sufficient S&E and marketing support will be provided to ensure a successful launch of the program. There is strong student support services for academic advising and other academic success supports. The budget preparation and enrollment projection tables shows that we expect this program to be generated good tuition revenues within the five year period of development. The program will be held accountable long-term through our campus Continuous Program Monitoring Policy which assesses metrics of performance for the programs annually.

The campus is well positioned to offer this new degree and the program will provide a pathway for students looking for this opportunity to enhance their business analytics skills. It is expected that this program will draw students to UW-Superior and will thrive.

Thank you for your consideration of this new program at UW-Superior in Business Analytics.

Maria Stalzer Wyant Cuzzo, Ph.D.
Interim Provost and Vice Chancellor of Academic Affairs

CC: Associate Vice President of Academic Programs & Faculty Advancement
    File
    Dr. Mei Cao, Director, School of Business and Economics, UW-Superior
    Dr. Shevaun Stocker, Associate Dean

**COLLABORATIVE REQUEST FOR NEW LIBERAL ARTS TRANSFER
PROGRAM AUTHORIZATION FOR THE
ASSOCIATE OF ARTS IN LIBERAL ARTS AT
BLACKHAWK TECHNICAL COLLEGE, FOX VALLEY TECHNICAL
COLLEGE, LAKESHORE TECHNICAL COLLEGE, MID-STATE TECHNICAL
COLLEGE, MORAINE PARK TECHNICAL COLLEGE, NORTHEAST
WISCONSIN TECHNICAL COLLEGE, WAUKESHA TECHNICAL COLLEGE,
WESTERN TECHNICAL COLLEGE**

REQUESTED ACTION

Adoption of Resolution C.7., authorizing the implementation of the Associate of Arts in Liberal Studies transfer program at Blackhawk Technical College, Fox Valley Technical College, Lakeshore Technical College, Mid-State Technical College, Moraine Park Technical College, Northeast Wisconsin Technical College, Waukesha Technical College and Western Technical College.

Resolution C.7.   That, upon the recommendation of the President of the University of Wisconsin System, the Presidents of Blackhawk Technical College, Fox Valley Technical College, Lakeshore Technical College, Mid-State Technical College, Moraine Park Technical College, Northeast Wisconsin Technical College, Waukesha Technical College and Western Technical College are authorized to implement the transfer degree program for an Associate of Arts in Liberal Arts.

SUMMARY

Wisconsin lags the U.S. in adults with baccalaureate degrees; a greater level of education leads to higher living wages and job opportunities, which positively impacts economic stability within communities.[1] These programs can increase transfer opportunities for technical college graduates to help grow a pool of Baccalaureate degree holders who live and work in the state of Wisconsin (93% of WTCS program graduates work within

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[1] National Science Foundation (2020). Percent of individuals 25-44 years old who are bachelor's degree holders

Wisconsin after graduation—7,924 of 8,491 graduates in 2018-19).[2] Wisconsin's statewide attainment goal through the Lumina Foundation's grant (collaboration between WTCS, UW System and WAICU) to ensure those between the ages of 25 and 64 have every opportunity to earn degrees and high-value education credentials, ensuring opportunities are equally accessible to all prospective students including first-generation college students, low-income students, people of color, and working adults. The statewide postsecondary credential attainment goal is 60% adults by 2027; in 2019, it was 53%.[3]

WTCS institutions need flexible, multi-path options for students seeking to transfer to the UW System and other universities, especially under-represented, non-traditional, and under-resourced students. Traditional linear articulation agreements are cumbersome to manage and do not offer flexibility for the evolving education needs of many adult learners; although a Universal Undergraduate Credit Transfer Agreement is in place between the UW System and WTCS colleges, approved courses are subject to transfer per each UW institution and at times only transfer as electives rather than coursework, thus requiring lengthy alternative conversations and agreements between each WTCS college and any UW institution it wishes to partner on behalf of its students.[4]

By offering these programs within the WTCS Districts, learners will be able to remain living and working in their local communities while taking classes at one of WTCS's locations. An Associate of Arts degree in Liberal Arts will also increase access through increased affordability for all learners, especially lower income individuals (2020-21 WTCS in-resident tuition for a 3-credit collegiate transfer course is $563.55 vs. 2020-21 UW in-resident tuition for a 3-credit course is $1,381.91, a savings of $818.36 in personal and/or financial aid loan repayment), seeking to obtain a Baccalaureate Degree.[5]

The programs are comprised of 60 credits and have been constructed according to the standards for associate degrees as stipulated in UW SYS 115 Standards for Associate Degrees as well as the approval requirements found in SYS 110: Criteria for Approval of Wisconsin Technical College System Collegiate Transfer Programs. The degrees consists of 39 to 41 credits of general education, and 19-21 credits of electives. The courses included in this array allow for students to experience several High Impact Practices (HIPs): writing intensive courses; undergraduate research; collaborative assignments/projects; diversity/global learning opportunities; and service learning/community-based learning. Upon matriculation with an Associate of Arts degree at WTCS institutions, students will be guaranteed admission to a four-year institution as a transfer student, given that students meet the requirements. Students would enter the transfer receiving institution with junior

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[2] Wisconsin Technical College System (2020). WTCS Program Performance Tableau Dashboard.
[3] 360Forward (2017). Wisconsin's statewide attainment goal.
[4] University of Wisconsin System. (2020). Universal credit transfer agreement (UCTA).
[5] Wisconsin Technical College System. (2020). Tuition and material fees.

standing. At the point of transfer, students will be able to enter a variety of majors to complete baccalaureate degrees in the Bachelor of Arts degree fields and have general education and some degree requirements already completed. This will save time toward earning the bachelor level degree, eliminating unnecessary duplication of classes and increased student debt.

To fully realize the benefits of these improved pathways, UW System and WTCS institutions have signed an MOU that will help ensure WTCS students who express an interest in a four-year degree are advised into the appropriate pathways and that there will be a staff presence by UW institutions to assist in these efforts. WTCS and UW institutions seek to close the attainment gap by expanding and maximizing access to postsecondary education in the WTCS Districts.

Presenter*s*

- Dr. Carleen Vande Zande, UW System Associate Vice President for Academic Programs & Faculty Advancement UW System
- Dr. Colleen McCabe, WTCS Provost and Vice President

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 (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/).

Previous Action or Discussion

The Board has previously approved nine WTCS institutions to offer the AS/AA associate degree programs.

Related Policies

- Regent Policy Document 4-12: Academic Program Planning, Review, and Approval in the University of Wisconsin System.
- Regent Policy Document 4-16: Criteria for Approval of Wisconsin Technical College System Collegiate Transfer Programs.
- UW System Administrative Policy 102: Policy on University of Wisconsin System Array Management: Program Planning, Delivery, Review, and Reporting.

- UW System Administrative Policy 110: Criteria for Approval of Wisconsin Technical College System Collegiate Transfer Programs.
- UW System Administrative Policy 115: Associate Degree Standards
- Reference related Regent Policy Documents and/or other relevant guidelines on this topic.

ATTACHMENTS

A) Form for approval of associate degree
B) Associate degree crosswalks for Associate of Arts degree
C) Letters from WTCS Board for Associate of Arts approvals

NEW ASSOCIATE OF ARTS

1. Name of Person Submitting:
Colleen McCabe, Provost and Vice President, Wisconsin Technical College System

2. Wisconsin Technical College (WTC) Name:
The Wisconsin Technical College System Office and Wisconsin Technical College System Board submit this request on behalf of the following technical college districts—
Blackhawk Technical College, Fox Valley Technical College, Lakeshore Technical College, Mid-State Technical College, Moraine Park Technical College, Northeast Wisconsin Technical College, Waukesha County Technical College, and Western Technical College.

3. Proposed Program: Associate of Arts

4. Mode of Delivery: Face to face, Online, Hybrid, Competency-based

5. Provide a Brief Rational for Adding the Degree:
The Wisconsin Technical College System (WTCS), the University of Wisconsin System (UWS), and the Wisconsin Association of Independent Colleges and Universities (WAICU) are committed to Wisconsin's *60Forward* attainment goal: to ensure at least 60% of Wisconsin's population between the ages of 25 and 64 have every opportunity to earn degree and high-value education credentials by 2027. Of particular interest is ensuring these opportunities are equally accessible to all prospective students, including first-generation college students, low-income students, people of color, and working adults.

Wisconsin's technical colleges are working collaboratively with UWS and WAICU to offer the Associate of Arts degree to prepare students for transfer to four-year colleges and universities. The degree provides students a broad general education background in humanities and social sciences, emphasizing written and verbal communication skills, critical thinking, and knowledge of diverse cultures. Elective options provide students with the opportunity to have a career focus. This degree will benefit stakeholders by providing local communities with increased postsecondary educational opportunities for students to transfer into a bachelor's degree program. Through institutional partnerships, students completing the WTCS Associate of Arts degree and meeting admissions criteria will be guaranteed admission at one or more baccalaureate degree-granting institutions in Wisconsin with junior status. Wisconsin's four-year colleges and universities will benefit by receiving Associate of Arts transfer students that are well-prepared to successfully complete a bachelor's degree.

WTCS Associate of Arts degree students across the state will have flexible and affordable transfer pathways to transition between the state's technical colleges and four-year institutions. The development of these new programs is helping to establish cooperative partnerships for

instructional resources and student services between transfer partners that will strengthen transfer pathways, improve retention and graduation rates for students who transfer, and increase bachelor's degree attainment rates in Wisconsin.

New Associate of Arts programs will support the state's workforce and economic development by growing the number and diversity of bachelor's degree holders in Wisconsin which will in turn, attract new and higher wage employers to our state. The economic and community benefits of increased educational attainment include higher wages and lifetime earnings, better health outcomes, lower unemployment rates and greater civic engagement.

6. Provide an Outline of the Curriculum. Include a List of Courses and Other Requirements such as Internships, Practica, etc.:
The curricula outlined in the attached tables aligns with the UW System Shared Learning Goals, as required in [UW System Admin Policy 115](#). The courses included in this array allow for students to experience several High Impact Practices (HIPs): writing-intensive courses; undergraduate research; collaborative assignments/projects; diversity/global learning opportunities; and service learning/community-based learning.

7. Provide Information on the Program Assessment Process:
WTCS institutions are developing Associate of Arts program learning outcomes based on the WTCS degree requirements, the UW System Administrative Policy 115 Associate Degree Standards, and alignment with individual transfer partners' general education learning goals. Program assessment plans are collaboratively being developed between technical colleges and bachelor's degree-granting institutions utilizing direct and indirect measures of student learning. The program assessment process will use both quantitative and qualitative data when assessing student learning and overall program viability.

Direct measures and indirect measures of student success will be used as assessment measures. Direct measures could include a WTCS program evaluation process like a Technical Skills Attainment analysis of program outcomes. Indirect measures of student learning could be gathered from graduate surveys, alumni surveys, or focus group discussions. Program viability will be assessed through goals for the program such as rates of enrollment, graduation rates, persistence factors, and transfer rates. Additional methods of data collection that will provide useful feedback for improving processes that support student learning and provide an overall picture of success include course evaluations, course grades, and program advisory committee feedback.

8. Provide Information on Transfer Possibilities to a Bachelor's Degree. Identify the Bachelor's Degree(s) for Possible Transfer:
Transfer students that enroll and complete the Associate of Arts program at a WTCS institution and meet the requirements documented in the Guaranteed Transfer Agreement with a four-year college or university will be admitted to the four-year institution with junior status. The terms of

these agreements are outlined in the Memorandum of Understanding developed cooperatively by the WTCS institution and receiving institution in support of the new Associate of Arts degrees. General education bachelor's degree requirements may also be satisfied at other four-year colleges and universities.

9. Provide Information on Opportunities for Collaboration with additional Universities:
The WTCS Associate of Arts degrees are focused on providing general education courses that optimize transferability with UW System and WAICU institutions and satisfy general education bachelor's degree requirements at other four-year institutions that have established transfer relationships with Wisconsin's technical colleges.

10. Provide the Desired Implementation Term and Year:
Depending on the timing of the Higher Learning Commission (HLC) approval, WTCS institutions are seeking to implement the new Associate of Arts programs during the 2022-23 academic year.

11. State whether Higher Learning Commission Approval will be Needed:
All WTCS institutions, except for Western Technical College (WTC), will be pursuing HLC approval for the ability to offer the Associate of Arts Degree. WTC, approved by UWS to offer the Associate of Science degree in 2007, requested the HLC screen their proposal to offer the Associate of Arts degree and it was determined the degree falls within their current ability to offer transfer degrees, so no additional approvals are needed

12. How will the program be staffed in terms of current faculty, new faculty, and staff members?
Existing WTCS faculty will instruct courses in the Associate of Arts programs. The colleges will hire additional qualified faculty to teach in program areas that are not currently staffed. To ensure sufficient course offerings for students as the Associate of Arts programs grow and develop, some WTCS colleges and their UW partner institutions will share curriculum. Partnership course offerings will focus on courses that fulfill degree requirements, enhance elective options, and/or satisfy major requirements for program-specific transfer pathways. The institutions will work collaboratively to ensure courses from both institutions are properly transcripted to document degree completion with appropriate student releases in place. The Associate of Arts partner institutions recognize their unique missions and plan to limit course duplication to make the best use of their respective resources.

Blackhawk Technical College			**Associate of Arts (60 credits)***		
General Education (39-41 credits)**					
Blackhawk Technical College Course Title			UW-Whitewater Rock County Campus Course Title (or UW-Whitewater Course from UCTA)		
Knowledge of Human Cultures and the Natural World (18-20)			**Knowledge of Human Cultures and the Natural World (18-20)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			Science and Math		
General Biology (w/lab)	806-114 (UCTA)	4	Biological Foundations	BIOLOGY 120 (UCTA)	4
General Chemistry (w/lab)	806-134 (UCTA)	4	General Chemistry I	CHEM 100 (UCTA)	4
Survey of Physics	806-139	3			
Physics (w/lab)	806-140	3			
General Physics 1 (w/lab)	806-154 (UCTA)	4	College Physics I (w/lab)	PHY 141	4
General Pathophysiology	806-175	3			
General Anatomy and Physiology (w/lab)	806-177	4			
Advanced Anatomy and Physiology (w/lab)	806-179	4			
Introduction to Biochemistry (w/lab)	806-186 (UCTA)	4	Survey of Biochemistry (W/Lab)	CHE 204	4
Microbiology (w/lab)	806-197	4			
Introductory Statistics	**804-189 (UCTA)**	**3**	Elementary Statistics	STAT 101 (UCTA)	3
Intermediate Algebra with Applications	804-118	4			
Quantitative Reasoning (in development)	804-211	3			
Trigonometry with Apps	804-196 (UCTA)	3	Trigonometry	MATH 151 (UCTA)	3
College Algebra & Trigonometry with Applications	804-197 (UCTA)	5	Precalculus	MATH 152 (UCTA)	5
Calculus 1	804-198 (UCTA)	4	Applied Calculus Survey for Business and Social Sciences	MATH 250 (UCTA)	4
			Concepts of Biology (w/lab)	BIO 101	5
			Foundations of Biological Sciences I (w/lab)	BIO 121	5
			Human Biology	BIO 180	3
			Natural History of Wisconsin	BIO 193	3
			General Survey of Microbiology w/lab	BIO 251	5
			Anatomy and Physiology I	BIO 285	5
			Anatomy and Physiology II	BIO 286	5
			Chemistry in the Kitchen (w/lab)	CHE 114	4
			Applied Chemistry and Society (w/lab)	CHE 124	4
			Introductory Chemistry w/lab	CHE 125	5
			General Chemistry I w/lab	CHE 145	5
			General Chemistry II w/lab	CHE 155	5
			Introduction to Computer Science	CPS 110	3
			Introduction to Programming	CPS 130	3
			Nutrition & Weight Management	HES 209	3
			Introduction to College Algebra	MAT 105	3
			College Algebra	MAT 110	3

			Calculus	MAT 211	5
			Calculus and Analytical Geometry I	MAT 221	5
			Calculus and Analytical Geometry II	MAT 222	5
			Calculus and Analytical Geometry III	MAT 223	5
			College Physics II w/lab	PHY 142	5
			University Physics I w/lab	PHY 201	5
			University Physics II w/lab	PHY 202	5
			Introduction to Engineering	EGR 105	3
			Engineering Graphics with Computer Aided Drafting	EGR 110	3
			Fitness for Life	HES 127	2
			Quantitative Reasoning	MAT 108	3
			Elementary Statistics	MAT 117	3
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Introduction to American Government	**809-122 (UCTA)**	**3**	American Government & Politics	POL 104	3
Introduction to Psychology	809-198 (UCTA)	3	Introductory Psychology	PSY 202	3
Developmental Psychology	809-188 (UCTA)	3	Lifespan Developmental Psychology	PSY 250	3
Introduction to Sociology	**809-196 (UCTA)**	**3**	Introduction to Sociology	SOC 101	3
Abnormal Psychology	809-159 (UCTA)	3	Social and Behavioral Sciences Elective	(UCTA)	3
Microeconomics	809-143	3	Economics-Micro	ECO 204	3
Macroeconomics	809-144	3	Economics-Macro	ECO 203	3
Thinking Critically and Creatively	**809-103 (UCTA)**	**3**	Humanities Elective	(UCTA)	3
			Introduction to Drawing	ART 101	3
			Introduction to Painting	ART 121	3
			Introduction to Acting	CTA 232	3
			Educational Psychology	EDU 230	3
			Creative Writing	ENG 203	3
			Introduction to Philosophy	PHI 101	3
			General Anthropology	ANT 100	3
			Religion, Witchcraft, and Magic	ANT 343	3
			Worlds of Art/Images/Objects/Ideas	ART 175	3
			Introduction to Theatre	CTA 130	3
			Introduction to Film	CTA 150	3
			Introduction to Mass Communication	CTA 201	3
			Popular Culture in the Media	CTA 218	3
			Introduction to Literature	ENG 250	3
			Women Writers	ENG 279	3
			Introduction to LGBTQ+ Literature	ENG 289	3
			Social Aspects of Sport	HES 217	3
			The US from Columbian Exchange to Civil War	HIS 101	3
			Music Literature and Appreciation	MUS 173	3
			Introduction to the Study of Religion	REL 101	3
Critical and Creative Thinking Skills (3)* **			**Critical and Creative Thinking Skills (3)*** **		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**

Science and Math			Science and Math		
General Biology (w/lab)	806-114 (UCTA)	4	Biological Foundations	BIOLOGY 120 (UCTA)	4
General Chemistry (w/lab)	806-134 (UCTA)	4	General Chemistry I	CHEM 100 (UCTA)	4
Survey of Physics	806-139	3			
Physics (w/lab)	806-140	3			
General Physics 1 (w/lab)	806-154 (UCTA)	4	College Physics I (w/lab)	PHY 141	4
General Pathophysiology	806-175	3			
General Anatomy and Physiology (w/lab)	806-177	4			
Advanced Anatomy and Physiology (w/lab)	806-179	4			
Introduction to Biochemistry (w/lab)	806-186 (UCTA)	4	Survey of Biochemistry (W/Lab)	CHE 204	4
Microbiology (w/lab)	806-197	4			
Introductory Statistics	**804-189 (UCTA)**	**3**	Elementary Statistics	STAT 101 (UCTA)	3
Intermediate Algebra with Applications	804-118	4			
Quantitative Reasoning (in development)	804-211	3			
Trigonometry with Apps	804-196 (UCTA)	3	Trigonometry	MATH 151 (UCTA)	3
College Algebra & Trigonometry with Applications	804-197 (UCTA)	5	Precalculus	MATH 152 (UCTA)	5
Calculus 1	804-198 (UCTA)	4	Applied Calculus Survey for Business and Social Sciences	MATH 250 (UCTA)	4
			Concepts of Biology (w/lab)	BIO 101	5
			Foundations of Biological Sciences I (w/lab)	BIO 121	5
			Human Biology	BIO 180	3
			Natural History of Wisconsin	BIO 193	3
			General Survey of Microbiology w/lab	BIO 251	5
			Anatomy and Physiology I	BIO 285	5
			Anatomy and Physiology II	BIO 286	5
			Chemistry in the Kitchen (w/lab)	CHE 114	4
			Applied Chemistry and Society (w/lab)	CHE 124	4
			Introductory Chemistry w/lab	CHE 125	5
			General Chemistry I w/lab	CHE 145	5
			General Chemistry II w/lab	CHE 155	5
			Introduction to Computer Science	CPS 110	3
			Introduction to Programming	CPS 130	3
			Nutrition & Weight Management	HES 209	3
			Introduction to College Algebra	MAT 105	3
			College Algebra	MAT 110	3
			Calculus	MAT 211	5
			Calculus and Analytical Geometry I	MAT 221	5
			Calculus and Analytical Geometry II	MAT 222	5
			Calculus and Analytical Geometry III	MAT 223	5
			College Physics II w/lab	PHY 142	5
			University Physics I w/lab	PHY 201	5
			University Physics II w/lab	PHY 202	5
			Introduction to Engineering	EGR 105	3
			Engineering Graphics with Computer Aided Drafting	EGR 110	3
			Fitness for Life	HES 127	2
			Quantitative Reasoning	MAT 108	3

			Elementary Statistics	MAT 117	3
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Introduction to American Government	**809-122 (UCTA)**	**3**	American Government & Politics	POL 104	3
Introduction to Psychology	809-198 (UCTA)	3	Introductory Psychology	PSY 202	3
Developmental Psychology	809-188 (UCTA)	3	Lifespan Developmental Psychology	PSY 250	3
Introduction to Sociology	**809-196 (UCTA)**	**3**	Introduction to Sociology	SOC 101	3
Abnormal Psychology	809-159 (UCTA)	3	Social and Behavioral Sciences Elective	(UCTA)	3
Microeconomics	809-143	3	Economics-Micro	ECO 204	3
Macroeconomics	809-144	3	Economics-Macro	ECO 203	3
Thinking Critically and Creatively	**809-103 (UCTA)**	**3**	Humanities Elective	(UCTA)	3
			Introduction to Drawing	ART 101	3
			Introduction to Painting	ART 121	3
			Introduction to Acting	CTA 232	3
			Educational Psychology	EDU 230	3
			Creative Writing	ENG 203	3
			Introduction to Philosophy	PHI 101	3
			General Anthropology	ANT 100	3
			Religion, Witchcraft, and Magic	ANT 343	3
			Worlds of Art/Images/Objects/Ideas	ART 175	3
			Introduction to Theatre	CTA 130	3
			Introduction to Film	CTA 150	3

Associate of Arts (60 credits)*					

General Education (39-41 credits)**

Fox Valley Technical College Course Title			UW-Oshkosh Course Title		
Knowledge of Human Cultures and the Natural World (18-20)			**Knowledge of Human Cultures and the Natural World (18-20)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
General Biology	10-806-114	4	Biological Concepts	BIOLOGY 105	4
General Chemistry	10-806-134	4	General, Organic and Biochemistry	CHEM 101	4
General Physics	10-806-154	4	College Physics 1	PHYS/AST 171	4
General Anatomy & Physiology	10-806-177	4	Human Anatomy	BIOLOGY 211	4
Advanced Anatomy & Physiology	10-806-179	4	Human Physiology	BIOLOGY 212	4
Microbiology	10-806-197	4	Microbial Survey	BIOLOGY 233	4
Quantitative Reasoning	**10-804-135**	**3**	**Quantitative Reasoning**	**MATH 105**	**3**
Introductory Statistics	**10-804-189**	**3**	**Problem Based Inquiry Seminar in Statistics**	**MATH 189**	**3**
College Algebra & Trigonometry	10-804-197	5	Pre-Calculus	MATH 108	5
Calculus 1	10-809-159	4	Calculus I	MATH 171	4
Calculus 2	10-809-188	4	Calculus II	MATH 172	4
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Introduction to Literature	20-801-204	3	Modern World Literature	ENGLISH 227	3
Literature and Popular Culture	20-801-221	3	English Elective	ENGLISH 6	3
Introduction to Sociology	10-809-196	3	Introductory Sociology	SOC 101	3
Introduction to Psychology	10-809-198	3	General Psychology	PSYCH 101	3
Think Critically and Creatively	**10-809-103**	**3**	**General Elective**	**GEN ELEC 6**	**3**
Introduction to Ethics	10-809-166	3	Ethics	PHIL 105	3
Abnormal Psychology	10-809-159	3	Psychology of Abnormal Behavior	PSYCH 303	3
Developmental Psychology	10-809-188	3	Developmental Psychology	PSYCH 391	3
American History 1607-1865	20-803-211	3	Early United States History to 1877	HISTORY 201	3
Introduction to American Government	10-809-122	3	American Government and Politics	POLISCI 105	3
Microeconomics	10-809-143	3	Principles of Microeconomics	ECON 202	3
Macroeconomics	10-809-144	3	Principles of Macroeconomics	ECON 201	3
Critical and Creative Thinking Skills (3)*			**Critical and Creative Thinking Skills (3)***		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
General Biology	10-806-114	4	Biological Concepts	BIOLOGY 105	4
General Chemistry	10-806-134	4	General, Organic and Biochemistry	CHEM 101	4
General Physics	10-806-154	4	College Physics 1	PHYS/AST 171	4
General Anatomy & Physiology	10-806-177	4	Human Anatomy	BIOLOGY 211	4
Advanced Anatomy & Physiology	10-806-179	4	Human Physiology	BIOLOGY 212	4
Microbiology	10-806-197	4	Microbial Survey	BIOLOGY 233	4
Quantitative Reasoning	**10-804-135**	**3**	**Quantitative Reasoning**	**MATH 105**	**3**
Introductory Statistics	**10-804-189**	**3**	**Problem Based Inquiry Seminar in Statistics**	**MATH 189**	**3**
College Algebra & Trigonometry	10-804-197	5	Pre-Calculus	MATH 108	5
Calculus 1	10-809-159	4	Calculus I	MATH 171	4
Calculus 2	10-809-188	4	Calculus II	MATH 172	4
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Introduction to Literature	20-801-204	3	Modern World Literature	ENGLISH 227	3
Literature and Popular Culture	20-801-221	3	English Elective	ENGLISH 6	3
Introduction to Sociology	10-809-196	3	Introductory Sociology	SOC 101	3
Introduction to Psychology	10-809-198	3	General Psychology	PSYCH 101	3
Think Critically and Creatively	**10-809-103**	**3**	**General Elective**	**GEN ELEC 6**	**3**
Introduction to Ethics	10-809-166	3	Ethics	PHIL 105	3
Abnormal Psychology	10-809-159	3	Psychology of Abnormal Behavior	PSYCH 303	3
Developmental Psychology	10-809-188	3	Developmental Psychology	PSYCH 391	3
American History 1607-1865	20-803-211	3	Early United States History to 1877	HISTORY 201	3
Introduction to American Government	10-809-122	3	American Government and Politics	POLISCI 105	3
Microeconomics	10-809-143	3	Principles of Microeconomics	ECON 202	3
Macroeconomics	10-809-144	3	Principles of Macroeconomics	ECON 201	3
Effective Communication (6)			**Effective Communication (6)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
English Composition 1	**10-801-136**	**3**	**First-Year College Writing**	**WRT 188**	**3**

English Composition 2	20-801-223	3	Advanced Writing	WRT 287	3
Speech OR	10-801-198	3	Introduction to Public Speaking	COMM 111	3
Oral/Interpersonal Communication	10-801-196	3			

Intercultural Knowledge and Competence (6)			Intercultural Knowledge and Competence (6)		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Introduction to Literature	20-801-204	3	Modern World Literature	ENGLISH 227	3
Literature and Popular Culture	20-801-221	3	English Elective	ENGLISH 6	3
Introduction to Diversity Studies	**10-809-172**	**3**	**Sociology Elective**	**SOC 13**	**3**
Spanish 1	20-802-211	4	Introduction to Spanish I	SPANISH 110	4
Spanish 2	20-802-212	4	Introduction to Spanish II	SPANISH 111	4

Individual, Social, and Environmental Responsibility (6)			Individual, Social, and Environmental Responsibility (6)		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Introduction to Diversity Studies	**10-809-172**	**3**	**Sociology Elective**	**SOC 13**	**3**
Introduction to Ethics	10-809-166	3	Ethics	PHIL 105	3
Introduction to Sustainability	10-806-112	3	Introduction to Sustainability	ENV STDS 102	3
Note: courses recorded in **bold** in this table incorporate high impact practices, and also fulfill this category.					

Electives (19-21 credits)****

Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Health & Fitness for Life	20-807-267	2	The Active Lifestyle	PHY ED 105	2

Additional Considerations

*The Associate of Arts degree is primarily intended to provide a broad liberal arts background and is designed to be the foundation for most bachelor degree programs and to satisfy general education requirements. Credits are focused toward the area of Human Cultures (this learning area typically includes coursework in social sciences, humanities, fine arts, and world languages).

**Each associate degree must contain a two-course sequence in which the first course provides the foundation for the second.

***The Critical and Creative Thinking Skills learning goal includes inquiry, problem solving, and qualitative and quantitative reasoning proficiencies, and may be typically included as learning goals in different disciplines throughout the university curriculum. To meet this learning objective, students seeking the AA degree should select 3 additional credits from the Human Cultures and Knowledge of the Natural World category. Note that an individual course cannot be used to fulfill the requirements of two different learning goals.

****Any course in any category can be utilized to fulfill the electives category, as long as that course has not already been used to fulfill the requirement of another category.

Associate of Arts (60 credits)*					

General Education (39-41 credits)**

Lakeshore Technical College Course Title			UW-Green Bay Course Title		
Knowledge of Human Cultures and the Natural World (18-20)			**Knowledge of Human Cultures and the Natural World (18-20)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
General Chemistry	10-806-134	4	Elective	CHEM Elective	4
General Physics 1	10-806-154	4	Fundamentals of Physics 1	PHYSICS 103	4
Principles of Sustainability	**10-806-112**	**3**	Elective	ENV SCI Elective	3
General Biology	10-806-114	4	Principals of Biology Cell/Molecular w/lab	BIOLOGY 201-202	4
Basic Anatomy	10-806-189	3	Introduction to Human Biology	HUM BIO 102	3
Introductory Statistics	10-804-189	3	Introductory Statistics	BUS ADM 220	3
Calculus	10-804-198	4	Calculus and Analytic Geometry 1	MATH 202	4
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Introduction to Sociology	**10-809-196**	**3**	Intro to Sociology	SOCIOL 101	3
Introduction to Psychology	**10-809-198**	**3**	Intro to Psychology	PSYCH 102	3
Intro to Literature	20-801-204	3	Introduction to Literature	ENGLISH 104	3
Intro to American Government	10-809-122	3	Intro to American Government	POLSCI 101	3
Macroeconomics	10-809-144	3	Macroeconomic Analysis	ECON 202	3
Microeconomics	10-809-143	3	Microeconomic Analysis	ECON 203	3
Critical and Creative Thinking Skills (3)*			**Critical and Creative Thinking Skills (3)***		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
General Chemistry	10-806-134	4	Elective	CHEM Elective	4
General Physics 1	10-806-154	4	Fundamentals of Physics 1	PHYSICS 103	4
Principles of Sustainability	**10-806-112**	**3**	Elective	ENV SCI Elective	3
General Biology	10-806-114	4	Principals of Biology Cell/Molecular w/lab	BIOLOGY 201-202	4
Basic Anatomy	10-806-189	3	Introduction to Human Biology	HUM BIO 102	3
Introductory Statistics	10-804-189	3	Introductory Statistics	BUS ADM 220	3
Calculus	10-804-198	4	Calculus and Analytic Geometry 1	MATH 202	4
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Introduction to Sociology	**10-809-196**	**3**	Intro to Sociology	SOCIOL 101	3
Introduction to Psychology	**10-809-198**	**3**	Intro to Psychology	PSYCH 102	3
Intro to Literature	20-801-204	3	Introduction to Literature	ENGLISH 104	3
Intro to American Government	10-809-122	3	Intro to American Government	POLSCI 101	3
Macroeconomics	10-809-144	3	Macroeconomic Analysis	ECON 202	3
Microeconomics	10-809-143	3	Microeconomic Analysis	ECON 203	3
Effective Communication (6)			**Effective Communication (6)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
English Composition 1	**10-801-136**	**3**	First Year Writing	WF 100	3
English Composition 2	**20-801-203**	**3**	Research and Rhetoric	WF 105	3
Speech	10-801-198	3	Fundamentals of Public Address	COMM 103	3
Oral/Interpersonal Communication	10-801-196	3	Fundamentals of Interpersonal Communication	COMM 166	3
Intercultural Knowledge and Competence (6)			**Intercultural Knowledge and Competence (6)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Introduction to Diversity Studies	**10-809-172**	**3**	Ethnic Diversity & Human Values	HUM STUD 213	3
Race, Class, Gender	20-809-217	3	Elective - Democracy and Justice Studies	DJS Elective	3
Spanish 1	20-802-211	4	Introduction to the Spanish Language 1	SPANISH 101	4
Spanish 2	20-802-212	4	Introduction to the Spanish Language 2	SPANISH 102	4
Individual, Social, and Environmental Responsibility (6)			**Individual, Social, and Environmental Responsibility (6)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Introduction to Diversity Studies	**10-809-172**	**3**	Ethnic Diversity & Human Values	HUM STUD 213	3
Race, Class, Gender	20-809-217	**3**	Elective - Democracy and Justice Studies	DJS Elective	3
Introduction to Ethics: Theory and Application	10-809-166	3	Contemporary Ethical Issues	PHILOS 102	3
Principles of Sustainability	10-806-112	3	Elective	ENV SCI Elective	3
Note: courses throughout this table that are recorded with bold font incorporate high impact practices, and also fulfill this category.					

Electives (19-21 credits)****

Course Title	Course Number	Credits	Course Title	Course Number	Credits
Stress Management	XX-XXX-XXX	1			
Accounting 1	10-101-111	4	Accounting Elective	ACCTG	4
Intro to Business Management	**10-102-110**	**3**	Business and Its Environment	BUS ADM 202	3
Intro to HR Management	**10-196-193**	**3**	Intro to Human Resources Management	HRM 362	3
Principles of Marketing	**10-104-102**	**3**	Principles of Marketing	MKTG 322	3
Supply Chain Management	10-182-131	3	Principles of Supply Chain Management	SCM 200	3

Additional Considerations

*The Associate of Arts degree is primarily intended to provide a broad liberal arts background and is designed to be the foundation for most bachelor degree programs and to satisfy general education requirements. Credits are focused toward the area of Human Cultures (this learning area typically includes coursework in social sciences, humanities, fine arts, and world languages).

**Each associate degree must contain a two-course sequence in which the first course provides the foundation for the second.

***The Critical and Creative Thinking Skills learning goal includes inquiry, problem solving, and qualitative and quantitative reasoning proficiencies, and may be typically included as learning goals in different disciplines throughout the university curriculum. To meet this learning objective, students seeking the AA degree should select 3 additional credits from the Human Cultures and Knowledge of the Natural World category.

****Any course in any category can be utilized to fulfill the electives category, as long as that course has not already been used to fulfill the requirement of another category.

Associate of Arts (60 credits)*

General Education (39-41 credits)**

Mid-State Technical College Course Title			UW-Stevens Point Course Title		
Knowledge of Human Cultures and the Natural World (18-20)			**Knowledge of Human Cultures and the Natural World (18-20)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
Environmental Science *	**20-806-215**	**3**	People, Resources, and the Biosphere	NRES 150	3
General Biology	10-806-114	4	General Biology	BIOL 101	4
General Chemistry	10-806-134	4	Basic Chemistry	CHEM 101	4
Basic Anatomy	10-806-189	3	Human Anatomy	BIOL 387	3
General Anatomy & Physiology	10-806-177	4	Natural Science Elective		4
Advanced Anatomy & Physiology	10-806-179	4	Natural Science Elective		4
Microbiology *	**10-806-197**	**4**	Natural Science Elective		4
General Physics I	10-806-154	4	Applied Principles of Physics I	PHYS 201	4
College Physics I	10-806-143	3	Natural Science Elective		3
Soil & Water Resources	10-001-198	3	Introduction to Soil and Water Resources	NRES 251	3
Principles of Sustainability *	**10-806-112**	**3**	**Natural Resources Elective**		**3**
Intro to Physical Geography	20-806-206	5	Natural Science Elective		5
Introductory Statistics *	**10-804-189**	**3**	Elementary Statistical Methods	MATH 255	3
Trigonometry with Applications	10-804-196	4	Precalculus Trigonometry	MATH 119	4
College Algebra with Applications	10-804-195	3	Precalcus Algebra	MATH 118	3
Calculus and Analytic Geometry 1	20-804-236	5	Calculus I	MATH 225	5
Quantitative Reasoning *	**10-804-135**	**3**	Mathematical Applications, Appreciations, and Skills	MATH 105	3
Elementary Math Education 1 *	**20-804-227**	**4**	Fundamental Mathematical Concepts for Elementary Teachers I	MATH 228	4
Elementary Math Education 2 *	**20-804-237**	**4**	Fundamental Mathematical Concepts for Elementary Teachers II	MATH 338	4
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Think Critically & Creatively *	**10-809-103**	**3**	Critical Thinking	PHIL 121	3
Intro to Ethics: Theory and Application *	**10-809-166**	**3**	Introduction to Ethics in Society	PHIL 101	3
Environmental Ethics*	20-809-226	3	Humanities Elective		3
Introduction to Philosophy *	**20-809-260**	**3**	Introduction to Philosophy	PHIL 100	3
Cultural Anthropology & Human Diversity *	**20-809-283**	**3**	Humanities Elective		3
History of the United States to 1877	20-803-215	3	United States to 1877	HIST 176	3
History of the United States since 1877	20-803-219	3	United States since 1877	HIST 177	3
World History to 1500	20-803-258	3	World History to 1500	HIST 101	3
World History since 1500	20-803-259	3	World History since 1500	HIST 102	3
Introduction to Literature	20-801-255	3	Introduction to the Study of Literature	ENGL 200	3
Contemporary World Literature	20-801-247	3	Humanities Elective		3
Children's Literature	20-801-233	3	Children's Literature	ENGL 275	3
Art Appreciation	20-815-201	3	Introduction to the Visual Arts	ART 100	3

Basic Photography	20-815-240	3	Photography 1	ART 215	3
Music Appreciation *	**20-805-201**	**3**	Appreciation and History of Music	MUS 100	3
Music in Film	20-805-280	3	Arts Elective		3
Principles of Macroeconomics *	**20-809-287**	**3**	Principles of Macroeconomics	ECON 110	3
Principles of Microeconomics *	**20-809-291**	**3**	Principles of Microeconomcis	ECON 111	3
Intro to Sociology *	**10-809-196**	**3**	Introduction to Sociology	SOC 101	3
Marriage and Family *	**20-809-275**	**3**	Marriage and the Family	SOC 240	3
Introduction to Psychology *	**10-809-198**	**3**	Introduction to Psychology	PSYC 110	3
Developmental Psychology *	**10-809-196**	3	Human Growth and Development: A Life Span Approach	HD 265	3
Educational Psychology *	**20-809-254**	3	Educational Psychology	PSYC 381	3
Abnormal Psychology *	**20-809-237**	3	Abnormal Psychology	PSYC 351	3

Critical and Creative Thinking Skills (3)***			Critical and Creative Thinking Skills (3)***		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Science and Math			Science and Math		
Environmental Science *	**20-806-215**	**3**	People, Resources, and the Biosphere	NRES 150	3
General Biology	10-806-114	4	General Biology	BIOL 101	4
General Chemistry	10-806-134	4	Basic Chemistry	CHEM 101	4
Basic Anatomy	10-806-189	3	Human Anatomy	BIOL 387	3
General Anatomy & Physiology	10-806-177	4	Natural Science Elective		4
Advanced Anatomy & Physiology	10-806-179	4	Natural Science Elective		4
Microbiology *	**10-806-197**	**4**	Natural Science Elective		4
General Physics I	10-806-154	4	Applied Principles of Physics I	PHYS 201	4
College Physics I	10-806-143	3	Natural Science Elective		3
Principles of Sustainability *	**10-806-112**	**3**	Natural Resources Elective		3
Soil & Water Resources	10-001-198	3	Introduction to Soil and Water Resources	NRES 251	3
Principles of Sustainability *	**10-806-112**	**3**	**Natural Resources Elective**		**3**
Intro to Physical Geography	20-806-206	5	Natural Science Elective		5
Introductory Statistics *	**10-804-189**	**3**	Elementary Statistical Methods	MATH 255	3
Trigonometry with Applications	10-804-196	4	Precalculus Trigonometry	MATH 119	4
College Algebra with Applications	10-804-195	3	Precalcus Algebra	MATH 118	3
Calculus and Analytic Geometry 1	20-804-236	5	Calculus I	MATH 225	5
Quantitative Reasoning *	**10-804-135**	**3**	Mathematical Applications, Appreciations, and Skills	MATH 105	3
Elementary Math Education 1 *	**20-804-227**	**4**	Fundamental Mathematical Concepts for Elementary Teachers I	MATH 228	4
Elementary Math Education 2 *	**20-804-237**	**4**	Fundamental Mathematical Concepts for Elementary Teachers II	MATH 338	4
Social Science, Humanities, and Fine Arts			Social Science, Humanities, and Fine Arts		
Think Critically & Creatively *	**10-809-103**	**3**	Critical Thinking	PHIL 121	3
Intro to Ethics: Theory and Application *	**10-809-166**	**3**	Introduction to Ethics in Society	PHIL 101	3
Environmental Ethics*	20-809-226	3	Humanities Elective		3
Introduction to Philosophy *	**20-809-260**	**3**	Introduction to Philosophy	PHIL 100	3
Intro to American Government *	**10-809-122**	**3**	American Politics	POLI 101	3

Cultural Anthropology & Human Diversity *	**20-809-283**	**3**	Humanities Elective		3
History of the United States to 1877	20-803-215	3	United States to 1877	HIST 176	3
History of the United States since 1877	20-803-219	3	United States since 1877	HIST 177	3
World History to 1500	20-803-258	3	World History to 1500	HIST 101	3
World History since 1500	20-803-259	3	World History since 1500	HIST 102	3
Introduction to Literature	20-801-255	3	Introduction to the Study of Literature	ENGL 200	3
Contemporary World Literature	20-801-247	3	Humanities Elective		3
Children's Literature	20-801-233	3	Children's Literature	ENGL 275	3
Art Appreciation	20-815-201	3	Introduction to the Visual Arts	ART 100	3
Basic Photography	20-815-240	3	Photography 1	ART 215	3
Music Appreciation *	**20-805-201**	**3**	Appreciation and History of Music	MUS 100	3
Music in Film	20-805-280	3	Arts Elective		3
Principles of Macroeconomics *	**20-809-287**	**3**	Principles of Macroeconomics	ECON 110	3
Principles of Microeconomics *	**20-809-291**	**3**	Principles of Microeconomcis	ECON 111	3
Intro to Sociology *	**10-809-196**	**3**	Introduction to Sociology	SOC 101	3
Marriage and Family *	**20-809-275**	**3**	Marriage and the Family	SOC 240	3
Introduction to Psychology *	**10-809-198**	**3**	Introduction to Psychology	PSYC 110	3
Developmental Psychology *	**10-809-196**	3	Human Growth and Development: A Life Span Approach	HD 265	3
Educational Psychology *	**20-809-254**	3	Educational Psychology	PSYC 381	3
Abnormal Psychology *	**20-809-237**	3	Abnormal Psychology	PSYC 351	3

Effective Communication (6)			Effective Communication (6)		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
English Composition 1	10-801-136	3	Freshman English	ENG0L 101	3
English 2	20-801-223	3	Sophomore English	ENGL 202	3
Speech	10-801-198	3	Fundamentals of Oral Communication	COMM 101	3
Creative Writing	20-801-227	3	Introduction to Creative Writing	ENGL 253	3
Oral/Interpersonal Communication	10-801-196	3	Foundations of Workplace Communication	COMM 180	3

Intercultural Knowledge and Competence (6)			Intercultural Knowledge and Competence (6)		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Introduction to Diversity Studies *	**10-809-172**	**3**	Social Science Elective		3
Race, Class, Gender *	**20-809-217**	**3**	Social Science Elective		3
Cultural Anthropology & Human Diversity *	**20-809-283**	**3**	Humanities Elective		3
Spanish 1	20-802-217	4	First Semester Spanish	SPAN 101	4
Spanish 2	20-802-221	4	Second Semester Spanish	SPAN 102	4
Contemporary World Literature	20-801-247	3	Humanities Elective		3
Introduction to World Religions *	**20-809-223**	**3**	Humanities Elective		3

Individual, Social, and Environmental Responsibility (6)			Individual, Social, and Environmental Responsibility (6)		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Introduction to Diversity Studies *	**10-809-172**	**3**	Social Science Elective		3
Race, Class, Gender *	**20-809-217**	**3**	Social Science Elective		3
Cultural Anthropology & Human Diversity *	**20-809-283**	**3**	Humanities Elective		3
Contemporary World Literature	20-801-247	3	Humanities Elective		3

Course Title	Course Number	Credits	Course Title	Course Number	Credits
Introduction to World Religions *	**20-809-223**	**3**	Humanities Elective		3
Environmental Ethics*	20-809-226	3	Humanities Elective		3
Principles of Sustainability *	**10-806-112**	**3**	**Natural Resources Elective**		**3**
Note: courses throughout this table that are recorded with bold font and an asterisk incorporate high impact practices, and also fulfill this category.					

Electives (19-21 credits)****

Course Title	Course Number	Credits	Course Title	Course Number	Credits
Physical Fitness for Life *	20-807-204	1	Wellness Elective		1
Stress Management: Fitness for Life *	20-807-203	1	Wellness Elective		1
Nutrition for Life *	20-807-202	1	Wellness Elective		1

Additional Considerations

*The Associate of Arts degree is primarily intended to provide a broad liberal arts background and is designed to be the foundation for most bachelor degree programs and to satisfy general education requirements. Credits are focused toward the area of Human Cultures (this learning area typically includes coursework in social sciences, humanities, fine arts, and world languages).

**Each associate degree must contain a two-course sequence in which the first course provides the foundation for the second.

***The Critical and Creative Thinking Skills learning goal includes inquiry, problem solving, and qualitative and quantitative reasoning proficiencies, and may be typically included as learning goals in different disciplines throughout the university curriculum. To meet this learning objective, students seeking the AA degree should select 3 additional credits from the Human Cultures and Knowledge of the Natural World category.

****Any course in any category can be utilized to fulfill the electives category, as long as that course has not already been used to fulfill the requirement of another category.

Associate of Arts (60 credits)*

General Education (39-41 credits)**

Moraine Park Technical College Course Title			Lakeland University Course Title		
Knowledge of Human Cultures and the Natural World (18-20)			**Knowledge of Human Cultures and the Natural World (18-20)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
Basic Anatomy	10-806-189	3	Life Sciences 1	BIO 111	3
Anatomy & Physiology I	20-806-207	4	Human Anatomy & Physiology I	BIO 211	4
Anatomy & Physiology II	20-806-208	4	Human Anatomy & Physiology II	BIO 212	4
College Algebra	20-804-212	4	Advanced Algebra	MAT 140	3
Introductory Statistics	**10-804-189**	**3**	**Probability and Statistics**	**MAT 220**	**3**
General Chemistry	10-806-134	4	Everyday Chemistry	CHM 100	4
Principles of Chemistry I	20-806-245	5	Principles of Chemistry I	CHM 131	4
Principles of Chemistry II	20-806-249	5	General Chemistry II: Introduction to Analytical Chemistry	CHM 202	4
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Developmental Psychology	20-809-233	3	Human Growth and Development	PSY 330	3
General Psychology	20-809-251	3	General Psychology	PSY 200	3
Introduction to Ethics: Theory and Application	**10-809-166**	**3**	**Ethics**	**PHI 232**	**3**
Introduction to Literature	20-801-255	3	Approaching Literature	ENG 190	3
Introduction to Sociology	**20-809-271**	**3**	**Introduction to Sociology**	**SOC 100**	**3**
Think Critically and Creatively	**10-809-103**	**3**	**CORE 1: Foundations of Critical Thinking**	**GEN 130**	**3**
Introduction to American Government	10-809-122	3	American Government 1	POL 221	3
Principles of Microeconomics	**20-809-291**	**3**	**Principles of Microeconomics**	**ECN 230**	**3**
Principles of Macroeconomics	**20-809-207**	**3**	**Principles of Microeconomics**	**ECN 235**	**3**
Critical and Creative Thinking Skills (3)*			**Critical and Creative Thinking Skills (3)***		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
Basic Anatomy	10-806-189	3	Life Sciences 1	BIO 111	3
Anatomy & Physiology I	20-806-207	4	Human Anatomy & Physiology I	BIO 211	4
Anatomy & Physiology II	20-806-208	4	Human Anatomy & Physiology II	BIO 212	4
College Algebra	20-804-212	4	Advanced Algebra	MAT 140	3
Introductory Statistics	**10-804-189**	**3**	**Probability and Statistics**	**MAT 220**	**3**
General Chemistry	10-806-134	4	Everyday Chemistry	CHM 100	4
Principles of Chemistry I	20-806-245	5	Principles of Chemistry I	CHM 131	4
Principles of Chemistry II	20-806-249	5	General Chemistry II: Introduction to Analytical Chemistry	CHM 202	4
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Developmental Psychology	20-809-233	3	Human Growth and Development	PSY 330	3
General Psychology	20-809-251	3	General Psychology	PSY 200	3
Introduction to Ethics: Theory and Application	**10-809-166**	**3**	**Ethics**	**PHI 232**	**3**
Introduction to Literature	20-801-255	3	Approaching Literature	ENG 190	3
Introduction to Sociology	**20-809-271**	**3**	**Introduction to Sociology**	**SOC 100**	**3**
Think Critically and Creatively	**10-809-103**	**3**	**CORE 1: Foundations of Critical Thinking**	**GEN 130**	**3**
Introduction to American Government	10-809-122	3	American Government 1	POL 221	3
Principles of Microeconomics	**20-809-291**	**3**	**Principles of Microeconomics**	**ECN 230**	**3**
Principles of Macroeconomics	**20-809-207**	**3**	**Principles of Microeconomics**	**ECN 235**	**3**
Effective Communication (6)			**Effective Communication (6)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
English Composition 1	**20-801-219**	**3**	**Composition 1: Academic Writing**	**GEN 110**	**3**
English Composition 2	**20-801-223**	**3**	**Composition 2: Argumentation and Research**	**GEN 112**	**3**
Oral and Interpersonal Communications OR	10-801-196	3	Fundamentals of Public Speaking	COM 111	3
Speech	10-801-198	3			
Intercultural Knowledge and Competence (6)			**Intercultural Knowledge and Competence (6)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Introduction to Diversity Studies	**10-809-172**	**3**	**Majority/Minority Relations**	**SOC 210**	**3**
Contemporary World Literature	801-247	3	Exploring World Literature	ENG 200	3
Spanish 1	20-802-217	4	Elementary Spanish 1 with Lab	SPA 101	4
Spanish 2	802-212	4	Elementary Spanish 2 with Lab	SPA 102	4
Individual, Social, and Environmental Responsibility (6)			**Individual, Social, and Environmental Responsibility (6)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Introduction to Diversity Studies	**10-809-172**	**3**	**Majority/Minority Relations**	**SOC 210**	**3**
Introduction to Ethics: Theory and Application	**10-809-166**	**3**	**Ethics**	**PHI 232**	**3**
Contemporary World Literature	801-247	3	Exploring World Literature	ENG 200	3
Note: courses throughout this table that are recorded with bold font incorporate high impact practices, and also fulfill this category.					

Electives (19-21 credits)****

Course Title	Course Number	Credits	Course Title	Course Number	Credits
Accounting 1	10-101-112	3	Financial Accounting Principles	ACC 210	3

Accounting 2	10-101-114	3	Managerial Accounting Principles	ACC 220	3
Data Management, Analysis & Reporting	10-101-138	3	Management Information Systems	BUS 301	3
Introduction to Business	10-102-101	3	Pathways to Success: Intro to Business	BUS 150	3

Additional Considerations

*The Associate of Arts degree is primarily intended to provide a broad liberal arts background and is designed to be the foundation for most bachelor degree programs and to satisfy general education requirements. Credits are focused toward the area of Human Cultures (this learning area typically includes coursework in social sciences, humanities, fine arts, and world languages).

**Each associate degree must contain a two-course sequence in which the first course provides the foundation for the second.

***The Critical and Creative Thinking Skills learning goal includes inquiry, problem solving, and qualitative and quantitative reasoning proficiencies, and may be typically included as learning goals in different disciplines throughout the university curriculum. To meet this learning objective, students seeking the AA degree should select 3 additional credits from the Human Cultures and Knowledge of the Natural World category.

****Any course in any category can be utilized to fulfill the electives category, as long as that course has not already been used to fulfill the requirement of another category.

General Education (39-41 credits)**

Northeast Wisconsin Technical College Course Title			UW-Green Bay Title		
Knowledge of Human Cultures and the Natural World (18-20)			**Knowledge of Human Cultures and the Natural World (18-20)**		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Science and Math			**Science and Math**		
Intermediate Algebra	**10-804-118**	**4**	**Intermediate and Advanced Algebra**	**MATH 99 + 101**	**4**
Introductory Statistics	**10-804-189**	**3**	**Introductory Statistics**	**BUS ADM 220**	**3**
Quantitative Reasoning	**10-804-135**	**3**	**Quantitative Reasoning**	**MATH 102**	**3**
College Algebra	10-804-195	3	MATH Elective* (*MATH 104 if both Algebra and Trig are completed)		3
Trigonometry	**10-804-196**	**3**	**MATH Elective**		**3**
College Algebra and Trig	**10-804-196**	**3**	**Pre-Calculus**	**MATH 104**	**3**
Calculus I	**10-804-198**	**4**	**Calculus and Analytic Geometry I**	**MATH 202**	**4**
Calculus 2	**10-804-181**	**4**	**Calculus and Analytic Geometry II**	**MATH 203**	**4**
General Biology	10-806-114	4	Principles of Bio Cell/Molecular w/ Lab	BIO 201 + 202	4
General Chemistry	**10-806-134**	**4**	**CHEM Elective**		**4**
Microbiology	**10-806-197**	**4**	**Principles of Microbiology**	**BIO 323 + 324**	**4**
College Chemistry	**10-806-134**	**5**	**Principles of Chemistry I w/lab**	**CHEM 211 + 213**	**5**
General Anatomy & Physiology	**10-806-177**	**4**	HUM BIOL Elective** (**HUM BIOL 240 + 241 if both A&P courses are taken)		**4**
Advanced Anatomy & Physiology	**10-806-179**	**4**	**HUM BIOL Elective**		**4**
Basic Anatomy (No lab)	**10-806-189**	**3**	**Introduction to Human Biology**	**HUM BIOL 102**	**3**
Principles of Sustainability	**10-806-112**	**3**	**ENV SCI Elective**		**3**
General Physics I	10-806-154	4	Fundamentals of Physics I	PHYSICS 103	4
General Physics 2	**10-806-164**	**4**	**Fundamentals of Physics II**	**PHYSICS 104**	**4**
Energy-Intro to Renewable & Sustainable	**10-480-101**	**4**	**Energy and Society**	**ENV SCI 260**	**4**
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Intro to Sociology	**10-809-196**	**3**	**Intro to Sociology**	**SIOL 101**	**3**
Intro to Ethics	**10-809-166**	**3**	**Contemporary Ethical Issues**	**PHILOS 102**	**3**
Intro to American Government	**10-809-122**	**3**	**Intro to American Government**	**POL SCI 101**	**3**
Economics	**10-809-195**	**3**	**ECON Elective**		**3**
Microeconomics	**10-809-143**	**3**		**TBD**	**3**
Macroeconomics	**10-809-144**	**3**		**TBD**	**3**
Intro to Psychology	**10-809-198**	**3**	**Intro to Psychology**	**PSYCH 102**	**3**
Developmental Psychology	**10-809-188**	**3**	**Intro to Lifespan Development**	**PSYCH 203**	**3**
Abnormal Psychology	**10-809-159**	**3**	**Abnormal Psychology**	**PSYCH 435**	**3**
Thinking Critically & Creatively	**10-809-103**	**3**	**Introduction to Philosophy**	**PHILOS 101**	**3**
Ceramics I	**10-306-200**	**3**	**ART Elective**		**3**
Ceramics II	**10-306-201**	**3**	**ART Elective**		**3**
Photography-Digital	**10-203-104**	**3**	Introduction to Photography	**ART 243**	3
Critical and Creative Thinking Skills (3)*			**Critical and Creative Thinking Skills (3)***		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Science and Math			**Science and Math**		
Intermediate Algebra	**10-804-118**	**4**	**Intermediate and Advanced Algebra**	**MATH 99 + 101**	**4**
Introductory Statistics	**10-804-189**	**3**	**Introductory Statistics**	**BUS ADM 220**	**3**
Quantitative Reasoning	**10-804-135**	**3**	**Quantitative Reasoning**	**MATH 102**	**3**
College Algebra	10-804-195	3	MATH Elective* (*MATH 104 if both Algebra and Trig are completed)		3
Trigonometry	**10-804-196**	**3**	**MATH Elective**		**3**
College Algebra and Trig	**10-804-196**	**3**	**Pre-Calculus**	**MATH 104**	**3**
Calculus I	**10-804-198**	**4**	**Calculus and Analytic Geometry I**	**MATH 202**	**4**
Calculus 2	**10-804-181**	**4**	**Calculus and Analytic Geometry II**	**MATH 203**	**4**
General Biology	10-806-114	4	Principles of Bio Cell/Molecular w/ Lab	BIO 201 + 202	4
General Chemistry	**10-806-134**	**4**	**CHEM Elective**		**4**
Microbiology	**10-806-197**	**4**	**Principles of Microbiology**	**BIO 323 + 324**	**4**
College Chemistry	**10-806-134**	**5**	**Principles of Chemistry I w/lab**	**CHEM 211 + 213**	**5**
General Anatomy & Physiology	**10-806-177**	**4**	HUM BIOL Elective** (**HUM BIOL 240 + 241 if both A&P courses are taken)		**4**
Advanced Anatomy & Physiology	**10-806-179**	**4**	**HUM BIOL Elective**		**4**
Basic Anatomy (No lab)	**10-806-189**	**3**	**Introduction to Human Biology**	**HUM BIOL 102**	**3**
Principles of Sustainability	**10-806-112**	**3**	**ENV SCI Elective**		**3**
General Physics I	10-806-154	4	Fundamentals of Physics I	PHYSICS 103	4
General Physics 2	**10-806-164**	**4**	**Fundamentals of Physics II**	**PHYSICS 104**	**4**
Energy-Intro to Renewable & Sustainable	**10-480-101**	**4**	**Energy and Society**	**ENV SCI 260**	**4**
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Intro to Sociology	**10-809-196**	**3**	**Intro to Sociology**	**SIOL 101**	**3**
Intro to Ethics	**10-809-166**	**3**	**Contemporary Ethical Issues**	**PHILOS 102**	**3**
Intro to American Government	**10-809-122**	**3**	**Intro to American Government**	**POL SCI 101**	**3**
Economics	**10-809-195**	**3**	**ECON Elective**		**3**
Microeconomics	**10-809-143**	**3**		**TBD**	**3**
Macroeconomics	**10-809-144**	**3**		**TBD**	**3**
Intro to Psychology	**10-809-198**	**3**	**Intro to Psychology**	**PSYCH 102**	**3**
Developmental Psychology	**10-809-188**	**3**	**Intro to Lifespan Development**	**PSYCH 203**	**3**
Abnormal Psychology	**10-809-159**	**3**	**Abnormal Psychology**	**PSYCH 435**	**3**
Thinking Critically & Creatively	**10-809-103**	**3**	**Introduction to Philosophy**	**PHILOS 101**	**3**
Ceramics I	**10-306-200**	**3**	**ART Elective**		**3**

Ceramics II	10-306-201	3	ART Elective		3

Effective Communication (6)			Effective Communication (6)		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
English Composition I	**10-801-136**	**3**	**First Year Writing**	**WF 100**	3
English Composition II	**10-801-185**	**3**	**Research and Rhetoric**	**WF 105**	3
Oral & Interpersonal Communication	**10-801-196**	**3**	**Fundamentals of Interpersonal Communication**	**COMM 166**	3
Speech	**10-809-198**	**3**	**Fundamentals of Public Address**	**COMM 133**	3
Technical Reporting	10-801-197	3	COMM Elective		3

Intercultural Knowledge and Competence (6)			Intercultural Knowledge and Competence (6)		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Intro to Diversity Studies	**10-809-172**	**3**	**Ethnic Diversity and Human Values**	**HUM STUD 213**	**3**
Ethnic Literature	10-801-145	3	English Elective		3
Spanish 101	10-802-104	4	Introduction to the Spanish Language I	SPANISH 101	4
Spanish 102	10-802-105	4	Introduction to the Spanish Language I	SPANISH 102	4

Individual, Social, and Environmental Responsibility (6)			Individual, Social, and Environmental Responsibility (6)		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Intro to Diversity Studies	**10-809-172**	**3**	**Ethnic Diversity and Human Values**	**HUM STUD 213**	**3**
Ethnic Literature	10-801-145	3	English Elective		3
Principles of Sustainability	**10-806-112**	**3**	**ENV SCI Elective**		**3**
Energy-Intro to Renewable & Sustainable	**10-480-101**	**4**	**Energy and Society**	**ENV SCI 260**	**4**
Note: courses throughout this table that are recorded with bold font incorporate high impact practices, and also fulfill this category.					

Electives (19-21 credits)****					
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Personal Wellness & Fitness	**10-546-101**	**3**	Meets WTCS Health/Wellness/Physical Education Requirements		
LEAD Fitness & Wellness	10-504-190	1	Meets WTCS Health/Wellness/Physical Education Requirements		
College 101	**10-890-101**	**1**	Meets NWTC Requirements		

Additional Considerations

*The Associate of Arts degree is primarily intended to provide a broad liberal arts background and is designed to be the foundation for most bachelor degree programs and to satisfy general education requirements. Credits are focused toward the area of Human Cultures (this learning area typically includes coursework in social sciences, humanities, fine arts, and world languages).

**Each associate degree must contain a two-course sequence in which the first course provides the foundation for the second.

***The Critical and Creative Thinking Skills learning goal includes inquiry, problem solving, and qualitative and quantitative reasoning proficiencies, and may be typically included as learning goals in different disciplines throughout the university curriculum. To meet this learning objective, students seeking the AA degree should select 3 additional credits from the Human Cultures and Knowledge of the Natural World category.

****Any course in any category can be utilized to fulfill the electives category, as long as that course has not already been used to fulfill the requirement of another category.

Associate of Arts (60 credits)*					

General Education (39-41 credits)**

Waukesha County Technical College			UW-Milwaukee		
Knowledge of Human Cultures and the Natural World (18-20)			**Knowledge of Human Cultures and the Natural World (18-20)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
Introductory Statistics	10-804-189	3	Elementary Statistical Analysis	MTHSTAT 215	3
Trigonometry with Apps	10-804-196	3	Trigonometry	MATH 117	3
Calculus 1	10-804-198	4	Calculus & Analytic Geometry 1	MATH 231	4
Quantitative Reasoning	20-804-2xx	3	Mathematical Literacy for College Students 2	MATH 102	3
Intermediate Algebra	20-804-2xx	3	Introduction to College Algebra	MATH 105	3
College Algebra	20-804-2xx	3	College Algebra	MATH 116	3
General Biology	10-806-114	4	Elements of Biology	BIO SCI 102	4
Intro to Biochemistry	10-806-186	4	Survey of Biochemistry	CHEM 103	4
General Chemistry	10-806-134	4	General Chemistry	CHEM 100	5
College Physics I	10-806-143	3	General Physics Lab 1	PHYSICS 121	1
			Physics Elective	PHYSICS EL	2
Anatomy and Physiology 1	20-806-2xx	4	Anatomy and Physiology I	BIO SCI 202	4
Anatomy and Physiology 2	20-806-2xx	4	Anatomy and Physiology II	BIO SCI 203	4
Microbiology	10-806-197	4	General Survey of Microbiology	BIO SCI 101	4
			The Solar System	CGS ASTRON 105	3
			Introduction to Environmental Science	CGS BIO 190	3
			Physical Geology	CGS GLG 101	4
			World Regional Geography	CGS GEO 110	3
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Intro to Ethics: Theory & Applications	**10-809-166**	**3**	Moral Problems	PHIL 243	3
Introduction to Psychology	**10-809-198**	**3**	Introduction to Psychology	PSYC 101	3
Developmental Psychology	10-809-188	3	Child Psychology	PSYC 260	3
Economics	10-809-195	3	Introductory Economics	ECON 100	3
Microeconomics	10-809-143	3	Principles of Microeconomics	ECON 103	3
Principles of Macroeconomics	10-809-xxx	3	Principles of Macroeconomics	ECON 104	3
Introduction to Sociology	**10-809-196**	**3**	Introduction to Sociology	SOCIOL 101	3
Introduction to Literature	**20-801-2xx**	**3**	Introduction to English Studies	ENGLISH 215	3
Introduction to World Religions	**20-809-2xx**	**3**	Introduction to World Religions	RELIGST 101	3

Critical and Creative Thinking Skills (3)*			**Critical and Creative Thinking Skills (3)***		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
Introductory Statistics	10-804-189	3	Elementary Statistical Analysis	MTHSTAT 215	3
Trigonometry with Apps	10-804-196	3	Trigonometry	MATH 117	3
Calculus 1	10-804-198	4	Calculus & Analytic Geometry 1	MATH 231	4
Quantitative Reasoning	20-804-2xx	3	Mathematical Literacy for College Students 2	MATH 102	3
Intermediate Algebra	20-804-2xx	3	Introduction to College Algebra	MATH 105	3
College Algebra	20-804-2xx	3	College Algebra	MATH 116	3
General Biology	10-806-114	4	Elements of Biology	BIO SCI 102	4
Intro to Biochemistry	10-806-186	4	Survey of Biochemistry	CHEM 103	4
General Chemistry	10-806-134	4	General Chemistry	CHEM 100	5
College Physics I	10-806-143	3	General Physics Lab 1	PHYSICS 121	1
			Physics Elective	PHYSICS EL	2
Anatomy and Physiology 1	20-806-2xx	4	Anatomy and Physiology I	BIO SCI 202	4
Anatomy and Physiology 2	20-806-2xx	4	Anatomy and Physiology II	BIO SCI 203	4
Microbiology	10-806-197	4	General Survey of Microbiology	BIO SCI 101	4
			The Solar System	CGS ASTRON 105	3
			Introduction to Environmental Science	CGS BIO 190	3
			Physical Geology	CGS GLG 101	4
			World Regional Geography	CGS GEO 110	3
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Introduction to Psychology	**10-809-198**	**3**	Introduction of Psychology	PSYC 101	3
Developmental Psychology	10-809-188	3	Child Psychology	PSYC 260	3
Economics	10-809-195	3	Introductory Economics	ECON 100	3
Microeconomics	10-809-143	3	Principles of Microeconomics	ECON 103	3
Principles of Macroeconomics	20-809-xxx	3	Principles of Macroeconomics	ECON 104	3
Introduction to Sociology	**10-809-186**	**3**	Introduction to Sociology	SOCIOL 101	3
Intro to Ethics: Theory and App	**10-809-166**	**3**	Moral Problems	PHIL 243	3
Introduction to Literature	**20-801-2xx**	**3**	Introduction to English Studies	ENGLISH 215	3
Introduction to World Religions	**20-809-2xx**	**3**	Introduction to World Religions	RELIGST 101	3

Effective Communication (6)			**Effective Communication (6)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
English Composition I	10-801-136	3	College Writing and Critical Reading	ENG 101	3
English Composition II	**20-801-2xx**	**3**	College Writing and Research	ENGLISH 102	3
Speech	10-801-198	3	Public Speaking	COM 103	3
Oral/Interpersonal Comm	10-801-196	3	Business & Professional Communication	COMM 105	3
Business Writing	**20-801-2xx**	**3**	Business Writing	ENGLISH 205	3
Technical Reporting	**10-801-197**	**3**	Technical Writing	ENGLISH 206	3

Intercultural Knowledge and Competence (6)					
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Intro to Diversity Studies	**10-809-172**	**3**	American Minority Groups	SOCIOL 224	3
Introduction to World Religions	**20-809-xxx**	**3**	Introduction to World Religions	RELIGST 101	3
Contemporary World Literature	20-809-247	3	Humanities Elective		3
			First Semester Spanish	CGS SPA 101	4
			Second Semester Spanish	CGS SPA 102	4
				CGS GEO 110	3
Individual, Social, and Environmental Responsibility (6)			Individual, Social, and Environmental Responsibility (6)		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Intro to Diversity Studies	**10-809-172**	**3**	American Minority Groups	SOCIOL 224	3
Intro to Ethics: Theory and App	**10-809-166**	**3**	Moral Problems	PHIL 243	3
Contemporary American Society	10-809-197	3	Solving Social Problems	SOCIOL 102	3
Introduction to World Religions	**20-809-2xx**	**3**	Introduction to World Religions	RELIGST 101	3
			Introduction to Environmental Science	CGS BIO 190	3
			World Regional Geography	CGS GEO 110	3
Note: courses recorded in bold in this table incorporate high impact practices, and also fulfill this category.					

Electives (19-21 credits)****

Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Marketing Principles	**10-104-102**	**3**	Principles of Marketing	BUS ADM 300	3
Business Law	**10-102-160**	**3**	Business Law 1	BUS ADM 391	3
Intro to CJ Studies	10-504-101	3	Intro to Criminal Justice	CRM-JST 110	3
Forensic Investigation I	10-504-124	3	Criminalistics	CRM-JST 481	3
Criminal Evidence	10-504-115	3	Criminal Evidence/Investigation	CRM-JST 480	3
Constitutional Rights Crim Law	10-504-116	3	Criminal Process	CRM-JST 300	3

Additional Considerations

*The Associate of Arts degree is primarily intended to provide a broad liberal arts background and is designed to be the foundation for most bachelor degree programs and to satisfy general education requirements. Credits are focused toward the area of Human Cultures (this learning area typically includes coursework in social sciences, humanities, fine arts, and world languages).

**Each associate degree must contain a two-course sequence in which the first course provides the foundation for the second.

***The Critical and Creative Thinking Skills learning goal includes inquiry, problem solving, and qualitative and quantitative reasoning proficiencies, and may be typically included as learning goals in different disciplines throughout the university curriculum. To meet this learning objective, students seeking the AA degree should select 3 additional credits from the Human Cultures and Knowledge of the Natural World category.

****Any course in any category can be utilized to fulfill the electives category, as long as that course has not already been used to fulfill the requirement of another category.

Form for UW-System Review

Courses on the same row are treated as direct equivalents between the two institutions.

Associate of Arts (60 credits)		
General Education (39-41 credits)		
WTCS Course Title	**Credits**	**UW-La Crosse Equivalent**
Knowledge of Human Cultures and the Natural World (18-20)		
Introduction to Literature	3	ENG 200
American Literature: Beginnings - 1865	3	ENG 201
American Literature: 1865 - Present	3	ENG 202
Music Appreciation	3	MUS 105
Philosophy of the Arts	3	PHL 332
Art History: Prehistory to Medieval	3	ART 102
Art History: Renaissance to Modern	3	(No Current Equivalency)
Abnormal Psychology	3	PSY 204
General Psychology	3	PSY 100
Anatomy and Physiology I	4	BIO 312*
Anatomy and Physiology II	4	BIO 313*
College Chemistry I	5	CHM 103
College Chemistry 2	5	CHM 104
College Physics	5	PHY 103
University Physics 1 - Calculus Based	5	PHY 203
University Physics 2 - Calculus Based	5	PHY 204
General Biology	4	BIO 105
Quantitative Reasoning	3	MTH 123
College Algebra	4	MTH 150
Math Analysis	5	MTH 151
Calculus and Analytic Geometry 1	5	MTH 207
Calculus and Analytic Geometry 2	5	MTH 208
Basic Statistics	4	STAT 145
Calculus 3	5	MTH 310
Mathematics for Decision Making	4	(No Current Equivalency – NEW Course)
Critical and Creative Thinking (3)		
Introduction to Philosophy	3	PHL 100
Principles of Microeconomics	3	ECO 110
Principles of Macroeconomics	3	ECO 120
Anatomy and Physiology I	4	BIO 312*
Anatomy and Physiology II	4	BIO 312*
College Chemistry I	5	CHM 103
College Chemistry 2	5	CHM 104
College Physics	5	PHY 103
University Physics 1 - Calculus Based	5	PHY 203
University Physics 2 - Calculus Based	5	PHY 204
General Biology	4	BIO 105

Quantitative Reasoning	4	MTH 123
College Algebra	4	MTH 150
Math Analysis	5	MTH 151
Calculus and Analytic Geometry 1	5	MTH 207
Calculus and Analytic Geometry 2	5	MTH 208
Basic Statistics	4	STAT 145
Calculus 3	5	MTH 310
Mathematics for Decision Making	4	(No Current Equivalency – NEW Course)
Effective Communication (6)		
English I	3	ENG 110
English II	3	(No Current Equivalency)
Creative Writing	3	ENG 305
Creative Writing - Nonfiction	3	ENG: Lower Division Elective Credit
Public Speaking	3	CST 110
Intercultural Knowledge and Competence (6)		
Introduction to World Religions	3	PHL: Gen Ed - Humanistic Studies requirement
Ethnic Literature	3	ENG 207
Race, Class, Gender	3	ERS 100
Native American History	3	HIS: Gen Ed - Minority Cultures/Multicultural Women's Studies requirement
The World in the 20th Century	3	HIST 110
Spanish I	4	SPA 101
Spanish II	4	SPA 102
Individual, Social and Environmental Responsibility (6)		
Environmental Issues	3	GEO 200
Philosophy of Leadership	3	GEL: Lower Division Elective Credit
American History (1865 - Present)	3	HIS: Gen Ed - Self and Society Requirement
American History (1607 - 1865)	3	HIS: Gen Ed - Self and Society Requirement
The World in the 20th Century	3	HIS 110
Environmental Issues	4	GEO 200
Total Fitness	1	ESS 100
Fitness Fundamentals	1	ESS 100
Wellness Today	3	HPR 105
American National Government	3	POL 101
Social Problems	3	SOC 120
Principles of Sociology	3	SOC 110
Electives (19-21 credits)		
WTCS Course Title	**Credits**	**UW-La Crosse Equivalent**
College Success	1	FYS 100
Career Development	1	GEL: Lower Division Elective Credit

Philosophy of Leadership	3	GEL: Lower Division Elective Credit
American History (1865 - Present)	3	HIS: Gen Ed - Self and Society Requirement
American History (1607 - 1865)	3	HIS: Gen Ed - Self and Society Requirement
The World in the 20th Century	3	HIS 110
Environmental Issues	4	GEO 200
Total Fitness	1	ESS 100
Fitness Fundamentals	1	ESS 100
Wellness Today	3	HPR 105
Total Credits: 60		

*Must take both Anatomy and Physiology I & II to receive BIO 312 credit.

Note: Some courses may appear in more than one learning goal category. An individual course cannot be used to fulfill the requirements of more than one learning goal.

Western Technical College - AALA Degree - Proposed Curriculum (60 Credits)

Course #	Course Title	CR		Course #	Course Title	CR
English	**(Minimum of 6 Credits)**			**Health & Wellness**	**(Minimum of 1 Credits)**	
20801201	English 1	3		20807200	Fitness Fundamentals	1
20801203	English 2	3		20807202	Total Fitness	1
20801240	Creative Writing	3		20807266	Wellness Today	3
20801244	Creative Writing - Nonfiction	3				
				Social Science	**(Minimum of 12 Credits)**	
Speech	**(Minimum of 3 Credits)**			20809202	Social Problems	3
20810201	Public Speaking	3		20809203	Principles of Sociology	3
				20809211	Principles of Macroeconomics	3
				20809212	Principles of Microeconomics	3
Math and Science Requirement (10 Cr Min.)				20809221	American National Government	3
Must Include:				20809231	General Psychology	3
** Any 20 Code Math Course				20809237	Abnormal Psychology	3
** 1 Lab Science Courses				20809262	Contemporary Moral Problems	3
Mathematics	**(Must have at least 1)**			**Diversity/Ethnic Stud**	**(Minimum of 3 Credits)**	
20804211	Quantitative Reasoning	4		20801212	Ethnic Literature	3
20804212	College Algebra	4		20809217	Race, Class, Gender	3
20804229	Math Analysis	5		20803214	Native American History	3
20804231	Calculus & Analytic Geometry 1	5				
20804232	Calculus & Analytic Geometry 2	5				
20804240	Basic Statistics	4		**Humanities**	**(Minimum of 12 Credits)**	
20804233	Calculus 3	5		20801204	Introduction to Literature	3
20804xxx (NEW)	Mathematics for Decision Making	4		20801217	American Literature: Beg - 1865	3
				20801218	American Literature: 1865-Pres	3
				20805227	Music Appreciation	3
				20809223	Introduction to World Religions	3
Lab Science	**(Must have at least 1)**			20809260	Introduction to Philosophy	3
20806207	Anatomy & Physiology I	4		20809265	Philosophy of the Arts	3
20806208	Anatomy & Physiology II	4		20815200	Art History: Prehistory to Medieval	3
20806209	College Chemistry I	5		20815210	Art History: Renaissance to Modern	3
20806212	College Chemistry 2	5				
20806221	College Physics I	5				
20806223	University Physics 1 - Calc Based	5		**Electives ONLY**	**(Minimum of 9 Credits) - Any 20-**	
20806224	University Physics 2 - Calc Based	5		20890200	College Success	1
20806234	General Biology	4		20890202	Career Development	1
				20890267	Philosophy of Leadership	3
				20803211	American History (1607-1865)	3
Foreign Language	**(Minimum of 4 Credits)**			20803212	American History (1865-Present)	3
20802211	Spanish 1	4		20803225	The World in the 20th Century	3
20802212	Spanish 2	4		20806280	Environmental Issues	4

January 18, 2022

Dr. Tracy Pierner
Blackhawk Technical College
6004 S County Rd G
Janesville WI 53547

Dear Dr. Pierner:

Program Approval Submission Approved by Board

Program Name:	Liberal Arts – Associate of Arts
Program Number:	20-800-1
CIP Code:	24.0101
SOC Code:	N/A
Education Director:	Valerie Crespin-Trujillo, 608-266-5517
	valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the January 18, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
        Sara Mackey, WTCS
        Dr. Karen Schmitt, BTC
        Lynn Neitzel, BTC
        Sandy McNutt, BTC

March 16, 2022

Dr. Chris Matheny
Fox Valley Technical College
1825 North Bluemound Drive
Appleton WI 54913

Dear Dr. Chris Matheny:

Program Approval Submission Approved by Board

Program Name: Liberal Arts – Associate of Arts

Program Number: 20-800-1

CIP Code: 24.0101

SOC Code: N/A

Education Director: Valerie Crespin-Trujillo, 608-266-5517
                     valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the March 16, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
        Sara Mackey, WTCS
        Dr. Jennifer Lanter, FVTC
        Carisa Corser, FVTC
        Mary Hrubes, FVTC
        Kim Olson, FVTC

COLLEGES: Blackhawk, Chippewa Valley, Fox Valley, Gateway, Lakeshore, Madison Area, Mid-State, Milwaukee Area, Moraine Park, Nicolet Area, Northcentral, Northeast Wisconsin, Northwood, Southwest Wisconsin, Waukesha County, Western

Morna K. Foy, President

4622 University Avenue
PO Box 7874
Madison, Wisconsin 53707-7874
608.266.1207 | Wisconsin Relay System: 711
info@wtcsystem.edu | www.wtcsystem.edu

January 18, 2022

Dr. Paul Carlsen
Lakeshore Technical College
1290 North Avenue
Cleveland WI 53015-1414

Dear Dr. Carlsen:

Program Approval Submission Approved by Board

Program Name:	Liberal Arts – Associate of Arts
Program Number:	20-800-1
CIP Code:	24.0101
SOC Code:	N/A
Education Director:	Valerie Crespin-Trujillo, 608-266-5517
	valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the January 18, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
        Sara Mackey, WTCS
        Mr. Jim Lemerond, LTC
        Lynne Thompson, LTC
        Barbara Backhaus, LTC
        Tanya Wasmer, LTC

COLLEGES: Blackhawk, Chippewa Valley, Fox Valley, Gateway, Lakeshore, Madison Area, Mid-State, Milwaukee Area, Moraine Park, Nicolet Area, Northcentral, Northeast Wisconsin, Northwood, Southwest Wisconsin, Waukesha County, Western

Morna K. Foy, President

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January 18, 2022

Dr. Shelly Mondeik
Mid-State Technical College
500 32nd Street North
Wisconsin Rapids WI 54494

Dear Dr. Mondeik:

Program Approval Submission Approved by Board

Program Name:	Liberal Arts – Associate of Arts
Program Number:	20-800-1
CIP Code:	24.0101
SOC Code:	N/A
Education Director:	Valerie Crespin-Trujillo, 608-266-5517
	valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the January 18, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
        Sara Mackey, WTCS
        Dr. Deb Stencil, Mid-State
        Lyz Hassett, Mid-State

Morna K. Foy, President

4622 University Avenue
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Madison, Wisconsin 53707-7874
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info@wtcsystem.edu | www.wtcsystem.edu

January 18, 2022

Ms. Bonnie Baerwald
Moraine Park Technical College
235 North National Avenue
Fond du Lac WI 54936

Dear Ms. Baerwald:

Program Approval Submission Approved by Board

Program Name:	Liberal Arts – Associate of Arts
Program Number:	20-800-1
CIP Code:	24.0101
SOC Code:	N/A
Education Director:	Valerie Crespin-Trujillo, 608-266-5517
	valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the January 18, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
        Sara Mackey, WTCS
        Dr. James Eden, MPTC
        Lisa Pollard, MPTC
        Rhea Behlke, MPTC
        Carrie Braskamp, MPTC

Morna K. Foy, President

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Madison, Wisconsin 53707-7874
608.266.1207 | Wisconsin Relay System: 711
info@wtcsystem.edu | www.wtcsystem.edu

January 18, 2022

Dr. H. Jeffrey Rafn
Northeast Wisconsin Technical College
2740 West Mason Street
Green Bay WI 54307

Dear Dr. Rafn:

Program Approval Submission Approved by Board

Program Name: Liberal Arts – Associate of Arts

Program Number: 20-800-1

CIP Code: 24.0101

SOC Code: N/A

Education Director: Valerie Crespin-Trujillo, 608-266-5517
                     valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the January 18, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
        Sara Mackey, WTCS
        Dr. Kathryn Rogalski, NWTC
        Vicki Csida, NWTC
        Barbara Conard, NWTC

Morna K. Foy, President

4622 University Avenue
PO Box 7874
Madison, Wisconsin 53707-7874
608.266.1207 | Wisconsin Relay System: 711
info@wtcsystem.edu | www.wtcsystem.edu

January 18, 2022

Dr. Richard Barnhouse
Waukesha County Technical College
800 Main Street
Pewaukee WI 53072

Dear Dr. Barnhouse:

Program Approval Submission Approved by Board

Program Name: Liberal Arts – Associate of Arts

Program Number: 20-800-1

CIP Code: 24.0101

SOC Code: N/A

Education Director: Valerie Crespin-Trujillo, 608-266-5517
                      valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the January 18, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
        Sara Mackey, WTCS
        Dr. Brad Piazza, WCTC
        Jean Furstenberg, WCTC
        Dr. Randall Coorough, WCTC
        Dannise Bartlett, WCTC

January 18, 2022

Dr. Roger Stanford
Western Technical College
400 Seventh St North
La Crosse WI 54601

Dear Dr. Stanford:

Program Approval Submission Approved by Board

Program Name: Liberal Arts – Associate of Arts

Program Number: 20-800-1

CIP Code: 24.0101

SOC Code: N/A

Education Director: Valerie Crespin-Trujillo, 608-266-5517
                       valerie.crespintrujillo@wtcsystem.edu

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Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
        Sara Mackey, WTCS
        Dr. Kathleen Linaker, WTC
        Nicki McCallson, WTC
        Amy Kothe, WTC
        Amy Thornton, WTC

COLLEGES: Blackhawk, Chippewa Valley, Fox Valley, Gateway, Lakeshore, Madison Area, Mid-State, Milwaukee Area, Moraine Park, Nicolet Area, Northcentral, Northeast Wisconsin, Northwood, Southwest Wisconsin, Waukesha County, Western

COLLABORATIVE REQUEST FOR NEW LIBERAL ARTS TRANSFER PROGRAM AUTHORIZATION FOR THE ASSOCIATE OF SCIENCE IN LIBERAL ARTS AT BLACKHAWK TECHNICAL COLLEGE, FOX VALLEY TECHNICAL COLLEGE, LAKESHORE TECHNICAL COLLEGE, MID-STATE TECHNICAL COLLEGE, MORAINE PARK TECHNICAL COLLEGE, NORTHEAST WISCONSIN TECHNICAL COLLEGE, WAUKESHA TECHNICAL COLLEGE

REQUESTED ACTION

Adoption of Resolution C.8., authorizing the implementation of the Associate of Science in Liberal Studies transfer program at Blackhawk Technical College, Fox Valley Technical College, Lakeshore Technical College, Mid-State Technical College, Moraine Park Technical College, Northeast Wisconsin Technical College, and Waukesha Technical College.

Resolution C.8.	That, upon the recommendation of the President of the University of Wisconsin System, the Presidents of at Blackhawk Technical College, Fox Valley Technical College, Lakeshore Technical College, Mid-State Technical College, Moraine Park Technical College, Northeast Wisconsin Technical College, and Waukesha Technical College are authorized to implement the transfer degree program for an Associate of Science in Liberal Arts.

SUMMARY

Wisconsin lags the U.S. in adults with baccalaureate degrees; a greater level of education leads to higher living wages and job opportunities, which positively impacts economic stability within communities.[1] These programs can increase transfer opportunities for technical college graduates to help grow a pool of Baccalaureate degree holders who live and work in the state of Wisconsin (93% of WTCS program graduates work within Wisconsin after graduation—7,924 of 8,491 graduates in 2018-19).[2] Wisconsin's statewide

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[1] National Science Foundation (2020). Percent of individuals 25-44 years old who are bachelor's degree holders

[2] Wisconsin Technical College System (2020). WTCS Program Performance Tableau Dashboard.

attainment goal through the Lumina Foundation's grant (collaboration between WTCS, UW System and WAICU) to ensure those between the ages of 25 and 64 have every opportunity to earn degrees and high-value education credentials, ensuring opportunities are equally accessible to all prospective students including first-generation college students, low-income students, people of color, and working adults. The statewide postsecondary credential attainment goal is 60% adults by 2027; in 2019, it was 53%.[3]

WTCS institutions need flexible, multi-path options for students seeking to transfer to the UW System and other universities, especially under-represented, non-traditional, and under-resourced students. Traditional linear articulation agreements are cumbersome to manage and do not offer flexibility for the evolving education needs of many adult learners; although a Universal Undergraduate Credit Transfer Agreement is in place between the UW System and WTCS colleges, approved courses are subject to transfer per each UW institution and at times only transfer as electives rather than coursework, thus requiring lengthy alternative conversations and agreements between each WTCS college and any UW institution it wishes to partner on behalf of its students.[4]

By offering these programs within the WTCS Districts, learners will be able to remain living and working in their local communities while taking classes at one of WTCS's locations. An Associate of Science degree in Liberal Arts will also increase access through increased affordability for all learners, especially lower income individuals (2020-21 WTCS in-resident tuition for a 3-credit collegiate transfer course is $563.55 vs. 2020-21 UW in-resident tuition for a 3-credit course is $1,381.91, a savings of $818.36 in personal and/or financial aid loan repayment), seeking to obtain a Baccalaureate Degree.[5]

The programs are comprised of 60 credits and have been constructed according to the standards for associate degrees as stipulated in UW SYS 115 Standards for Associate Degrees as well as the approval requirements found in SYS 110: Criteria for Approval of Wisconsin Technical College System Collegiate Transfer Programs. The degrees consists of 39 to 41 credits of general education, and 19-21 credits of electives. The courses included in this array allow for students to experience several High Impact Practices (HIPs): writing intensive courses; undergraduate research; collaborative assignments/projects; diversity/global learning opportunities; and service learning/community-based learning. Upon matriculation with an Associate of Science degree at WTCS institutions, students will be guaranteed admission to a four-year institution as a transfer student, given that students meet the requirements. Students would enter the transfer receiving institution with junior standing. At the point of transfer, students will be able to enter a variety of majors to complete baccalaureate degrees in the Bachelor of Science degree fields and

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[3] 360Forward (2017). Wisconsin's statewide attainment goal.
[4] University of Wisconsin System. (2020). Universal credit transfer agreement (UCTA).
[5] Wisconsin Technical College System. (2020). Tuition and material fees.

have general education and some degree requirements already completed. This will save time toward earning the bachelor level degree, eliminating unnecessary duplication of classes and increased student debt.

To fully realize the benefits of these improved pathways, UW System and WTCS institutions have signed an MOU that will help ensure WTCS students who express an interest in a four-year degree are advised into the appropriate pathways and that there will be a staff presence by UW institutions to assist in these efforts. WTCS and UW institutions seek to close the attainment gap by expanding and maximizing access to postsecondary education in the WTCS Districts.

Presenter*s*

- Dr. Carleen Vande Zande, UW System Associate Vice President for Academic Programs & Faculty Advancement UW System
- Dr. Colleen McCabe, WTCS Provost and Vice President

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 (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/).

Previous Action or Discussion

The Board has previously approved nine WTCS institutions to offer the AS/AA associate degree programs.

Related Policies

- Regent Policy Document 4-12: Academic Program Planning, Review, and Approval in the University of Wisconsin System.
- Regent Policy Document 4-16: Criteria for Approval of Wisconsin Technical College System Collegiate Transfer Programs.
- UW System Administrative Policy 102: Policy on University of Wisconsin System Array Management: Program Planning, Delivery, Review, and Reporting.
- UW System Administrative Policy 110: Criteria for Approval of Wisconsin Technical College System Collegiate Transfer Programs.
- UW System Administrative Policy 115: Associate Degree Standards

- Reference related Regent Policy Documents and/or other relevant guidelines on this topic.

ATTACHMENTS

A) Form for approval of associate degree
B) Associate degree crosswalks for Associate of Science degree
C) Letters from WTCS Board for Associate of Science approvals

NEW ASSOCIATE OF SCIENCE

1. Name of Person Submitting:
Colleen McCabe, Provost and Vice President, Wisconsin Technical College System

2. Wisconsin Technical College (WTC) Name:
The Wisconsin Technical College System Office and Wisconsin Technical College System Board submit this request on behalf of the following technical college districts—
Blackhawk Technical College, Fox Valley Technical College, Lakeshore Technical College, Mid-State Technical College, Moraine Park Technical College, Northeast Wisconsin Technical College, and Waukesha County Technical College.

3. Proposed Program: Associate of Science

4. Mode of Delivery: Face to face, Online, Hybrid, Competency-based

5. Provide a Brief Rational for Adding the Degree:
The Wisconsin Technical College System (WTCS), the University of Wisconsin System (UWS), and the Wisconsin Association of Independent Colleges and Universities (WAICU) are committed to Wisconsin's *60Forward* attainment goal: to ensure at least 60% of Wisconsin's population between the ages of 25 and 64 have every opportunity to earn degree and high-value education credentials by 2027. Of particular interest is ensuring these opportunities are equally accessible to all prospective students, including first-generation college students, low-income students, people of color, and working adults.

Wisconsin's technical colleges are working collaboratively with UWS and WAICU to offer the Associate of Science degree to prepare students for transfer to four-year colleges and universities. The degree provides students with skills in using observation, quantitative analysis and logic in math and science, emphasizing written and verbal communication skills, critical thinking, and knowledge of diverse cultures. Elective options provide students with the opportunity to have a career focus. This degree will benefit stakeholders by providing local communities with increased postsecondary educational opportunities for students to transfer into a bachelor's degree program. Through institutional partnerships, students completing the WTCS Associate of Science degree and meeting admissions criteria will be guaranteed admission at one or more baccalaureate degree-granting institutions in Wisconsin with junior status. Wisconsin's four-year colleges and universities will benefit by receiving Associate of Science transfer students that are well-prepared to successfully complete a bachelor's degree.

WTCS Associate of Science degree students across the state will have flexible and affordable transfer pathways to transition between the state's technical colleges and four-year institutions. The development of these new programs is helping to establish cooperative partnerships for instructional resources and student services between transfer partners that will strengthen

transfer pathways, improve retention and graduation rates for students who transfer, and increase bachelor's degree attainment rates in Wisconsin.

New Associate of Science programs will support the state's workforce and economic development by growing the number and diversity of bachelor's degree holders in Wisconsin which will in turn, attract new and higher wage employers to our state. The economic and community benefits of increased educational attainment include higher wages and lifetime earnings, better health outcomes, lower unemployment rates and greater civic engagement.

6. Provide an Outline of the Curriculum. Include a List of Courses and Other Requirements such as Internships, Practica, etc.:
The curricula outlined in the attached tables aligns with the UW System Shared Learning Goals, as required in [UW System Admin Policy 115](). The courses included in this array allow for students to experience several High Impact Practices (HIPs): writing-intensive courses; undergraduate research; collaborative assignments/projects; diversity/global learning opportunities; and service learning/community-based learning.

7. Provide Information on the Program Assessment Process:
WTCS institutions are developing Associate of Science program learning outcomes based on WTCS degree requirements, the UW System Administrative Policy 115 Associate Degree Standards, and alignment with individual transfer partners' general education learning goals. Program assessment plans are collaboratively being developed between technical colleges and bachelor's degree-granting institutions utilizing direct and indirect measures of student learning. The program assessment process will use both quantitative and qualitative data when assessing student learning and overall program viability.

Direct measures and indirect measures of student success will be used as assessment measures. Direct measures could include a WTCS program evaluation process like a Technical Skills Attainment analysis of program outcomes. Indirect measures of student learning could be gathered from graduate surveys, alumni surveys, or focus group discussions. Program viability will be assessed through goals for the program such as rates of enrollment, graduation rates, persistence factors, and transfer rates. Additional methods of data collection that will provide useful feedback for improving processes that support student learning and provide an overall picture of success include course evaluations, course grades, and program advisory committee feedback.

8. Provide Information on Transfer Possibilities to a Bachelor's Degree. Identify the Bachelor's Degree(s) for Possible Transfer:
Transfer students that enroll and complete the Associate of Science program at a WTCS institution and meet the requirements documented in the Guaranteed Transfer Agreement with a four-year college or university will be admitted to the four-year institution with junior status. The terms of these agreements are outlined in the Memorandum of Understanding developed cooperatively by the WTCS institution and receiving institution in support of the new Associate of Science degrees.

General education bachelor's degree requirements may also be satisfied at other four-year colleges and universities.

9. Provide Information on Opportunities for Collaboration with additional Universities:
The WTCS Associate of Science degrees are focused on providing general education courses that optimize transferability with UW System and WAICU institutions and satisfy general education bachelor's degree requirements at other four-year institutions that have established transfer relationships with Wisconsin's technical colleges.

10. Provide the Desired Implementation Term and Year:
Depending on the timing of the Higher Learning Commission (HLC) approval, WTCS institutions are seeking to implement the new Associate of Science programs during the 2022-23 academic year.

11. State whether Higher Learning Commission Approval will be Needed:
All WTCS institutions will be pursuing HLC approval for the ability to offer the Associate of Science Degree.

12. How will the program be staffed in terms of current faculty, new faculty, and staff members?
Existing WTCS faculty will instruct courses in the Associate of Science programs. The colleges will hire additional qualified faculty to teach in program areas that are not currently staffed. To ensure sufficient course offerings for students as the Associate of Science programs grow and develop, some WTCS colleges and their UW partner institutions will share curriculum. Partnership course offerings will focus on courses that fulfill degree requirements, enhance elective options, and/or satisfy major requirements for program-specific transfer pathways. The institutions will work collaboratively to ensure courses from both institutions are properly transcripted to document degree completion with appropriate student releases in place. The Associate of Science partner institutions recognize their unique missions and plan to limit course duplication to make the best use of their respective resources.

Blackhawk Technical College			Associate of Science (60 credits)*		
General Education (41-46 credits)**					
Blackhawk Technical College Course Title			**UW-Whitewater Rock County Campus Course Title**		
Knowledge of Human Cultures and the Natural World (20-25)			**Knowledge of Human Cultures and the Natural World (20-25)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
General Biology (w/lab)	806-114 (UCTA)	4	Biological Foundations	BIOLOGY 120 (UCTA)	4
General Chemistry (w/lab)	806-134 (UCTA)	4	General Chemistry I	CHEM 100 (UCTA)	4
Survey of Physics	806-139	3			
Physics (w/lab)	806-140	3			
General Physics 1 (w/lab)	806-154 (UCTA)	4	College Physics I (w/lab)	PHY 141	4
General Pathophysiology	806-175	3			
General Anatomy and Physiology (w/lab)	806-177	4			
Advanced Anatomy and Physiology (w/lab)	806-179	4			
Introduction to Biochemistry (w/lab)	806-186 (UCTA)	4	Survey of Biochemistry (W/Lab)	CHE 204	4
Microbiology (w/lab)	806-197	4			
Introductory Statistics	**804-189 (UCTA)**	**3**	Elementary Statistics	STAT 101 (UCTA)	3
Intermediate Algebra with Applications	804-118	4			
Quantitative Reasoning (in development)	804-211	3			
			Introduction to Engineering	EGR 105	3
			Engineering Graphics with Computer Aided Drafting	EGR 110	3
			Fitness for Life	HES 127	2
			Quantitative Reasoning	MAT 108	3
			Elementary Statistics	MAT 117	3
Trigonometry with Apps	804-196 (UCTA)	3	Trigonometry	MATH 151 (UCTA)	3
College Algebra & Trigonometry with Applications	804-197 (UCTA)	5	Precalculus	MATH 152 (UCTA)	5
Calculus 1	804-198 (UCTA)	4	Applied Calculus Survey for Business and Social Sciences	MATH 250 (UCTA)	4
			Concepts of Biology (w/lab)	BIO 101	5
			Foundations of Biological Sciences I (w/lab)	BIO 121	5
			Human Biology	BIO 180	3
			Natural History of Wisconsin	BIO 193	3
			General Survey of Microbiology w/lab	BIO 251	5
			Anatomy and Physiology I	BIO 285	5
			Anatomy and Physiology II	BIO 286	5
			Chemistry in the Kitchen (w/lab)	CHE 114	4
			Applied Chemistry and Society (w/lab)	CHE 124	4
			Introductory Chemistry w/lab	CHE 125	5
			General Chemistry I w/lab	CHE 145	5
			General Chemistry II w/lab	CHE 155	5
			Introduction to Computer Science	CPS 110	3
			Introduction to Programming	CPS 130	3
			Nutrition & Weight Management	HES 209	3
			Introduction to College Algebra	MAT 105	3
			College Algebra	MAT 110	3
			Calculus	MAT 211	5
			Calculus and Analytical Geometry I	MAT 221	5
			Calculus and Analytical Geometry II	MAT 222	5
			Calculus and Analytical Geometry III	MAT 223	5
			College Physics II w/lab	PHY 142	5
			University Physics I w/lab	PHY 201	5
			University Physics II w/lab	PHY 202	5
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Introduction to American Government	**809-122 (UCTA)**	**3**	American Government & Politics	POL 104	3
Introduction to Psychology	809-198 (UCTA)	3	Introductory Psychology	PSY 202	3
Developmental Psychology	809-188 (UCTA)	3	Lifespan Developmental Psychology	PSY 250	3
Introduction to Sociology	**809-196 (UCTA)**	**3**	Introduction to Sociology	SOC 101	3
Abnormal Psychology	809-159 (UCTA)	3	Social and Behavioral Sciences Elective	(UCTA)	3
Microeconomics	809-143	3	Economics-Micro	ECO 204	3
Macroeconomics	809-144	3	Economics-Macro	ECO 203	3
Thinking Critically and Creatively	**809-103 (UCTA)**	**3**	Humanities Elective	(UCTA)	3
			Introduction to Drawing	ART 101	3
			Introduction to Painting	ART 121	3
			Introduction to Acting	CTA 232	3
			Educational Psychology	EDU 230	3
			Creative Writing	ENG 203	3
			Introduction to Philosophy	PHI 101	3
			General Anthropology	ANT 100	3
			Religion, Witchcraft, and Magic	ANT 343	3
			Worlds of Art/Images/Objects/Ideas	ART 175	3
			Introduction to Theatre	CTA 130	3
			Introduction to Film	CTA 150	3
			Introduction to Mass Communication	CTA 201	3
			Popular Culture in the Media	CTA 218	3
			Introduction to Literature	ENG 250	3
			Women Writers	ENG 279	3
			Introduction to LGBTQ+ Literature	ENG 289	3
			Social Aspects of Sport	HES 217	3
			The US from Columbian Exchange to Civil War	HIS 101	3
			Music Literature and Appreciation	MUS 173	3
			Introduction to the Study of Religion	REL 101	3

Critical and Creative Thinking Skills (6)***			Critical and Creative Thinking Skills (6)***		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Science and Math			**Science and Math**		
General Biology (w/lab)	806-114 (UCTA)	4	Biological Foundations	BIOLOGY 120 (UCTA)	4
General Chemistry (w/lab)	806-134 (UCTA)	4	General Chemistry I	CHEM 100 (UCTA)	4
Survey of Physics	806-139	3			
Physics (w/lab)	806-140	3			
General Physics 1 (w/lab)	806-154 (UCTA)	4	College Physics I (w/lab)	PHY 141	4
General Pathophysiology	806-175	3			
General Anatomy and Physiology (w/lab)	806-177	4			
Advanced Anatomy and Physiology (w/lab)	806-179	4			
Introduction to Biochemistry (w/lab)	806-186 (UCTA)	4	Survey of Biochemistry (W/Lab)	CHE 204	4
Microbiology (w/lab)	806-197	4			
Introductory Statistics	**804-189 (UCTA)**	**3**	Elementary Statistics	STAT 101 (UCTA)	3
Intermediate Algebra with Applications	804-118	4			
Quantitative Reasoning (in development)	804-211	3			
			Introduction to Engineering	EGR 105	3
			Engineering Graphics with Computer Aided Drafting	EGR 110	3
			Fitness for Life	HES 127	2
			Quantitative Reasoning	MAT 108	3
			Elementary Statistics	MAT 117	3
Trigonometry with Apps	804-196 (UCTA)	3	Trigonometry	MATH 151 (UCTA)	3
College Algebra & Trigonometry with Applications	804-197 (UCTA)	5	Precalculus	MATH 152 (UCTA)	5
Calculus 1	804-198 (UCTA)	4	Applied Calculus Survey for Business and Social Sciences	MATH 250 (UCTA)	4
			Concepts of Biology (w/lab)	BIO 101	5
			Foundations of Biological Sciences I (w/lab)	BIO 121	5
			Human Biology	BIO 180	3
			Natural History of Wisconsin	BIO 193	3
			General Survey of Microbiology w/lab	BIO 251	5
			Anatomy and Physiology I	BIO 285	5
			Anatomy and Physiology II	BIO 286	5
			Chemistry in the Kitchen (w/lab)	CHE 114	4
			Applied Chemistry and Society (w/lab)	CHE 124	4
			Introductory Chemistry w/lab	CHE 125	5
			General Chemistry I w/lab	CHE 145	5
			General Chemistry II w/lab	CHE 155	5
			Introduction to Computer Science	CPS 110	3
			Introduction to Programming	CPS 130	3
			Nutrition & Weight Management	HES 209	3
			Introduction to College Algebra	MAT 105	3
			College Algebra	MAT 110	3
			Calculus	MAT 211	5
			Calculus and Analytical Geometry I	MAT 221	5
			Calculus and Analytical Geometry II	MAT 222	5
			Calculus and Analytical Geometry III	MAT 223	5
			College Physics II w/lab	PHY 142	5
			University Physics I w/lab	PHY 201	5
			University Physics II w/lab	PHY 202	5
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Introduction to American Government	**809-122 (UCTA)**	**3**	American Government & Politics	POL 104	3
Introduction to Psychology	809-198 (UCTA)	3	Introductory Psychology	PSY 202	3
Developmental Psychology	809-188 (UCTA)	3	Lifespan Developmental Psychology	PSY 250	3
Introduction to Sociology	**809-196 (UCTA)**	**3**	Introduction to Sociology	SOC 101	3
Abnormal Psychology	809-159 (UCTA)	3	Social and Behavioral Sciences Elective	(UCTA)	3
Microeconomics	809-143	3	Economics-Micro	ECO 204	3
Macroeconomics	809-144	3	Economics-Macro	ECO 203	3
Thinking Critically and Creatively	**809-103 (UCTA)**	**3**	Humanities Elective	(UCTA)	3
			Introduction to Drawing	ART 101	3
			Introduction to Painting	ART 121	3
			Introduction to Acting	CTA 232	3
			Educational Psychology	EDU 230	3
			Creative Writing	ENG 203	3
			Introduction to Philosophy	PHI 101	3
			General Anthropology	ANT 100	3
			Religion, Witchcraft, and Magic	ANT 343	3
			Worlds of Art/Images/Objects/Ideas	ART 175	3
			Introduction to Theatre	CTA 130	3
			Introduction to Film	CTA 150	3
			Introduction to Mass Communication	CTA 201	3
			Popular Culture in the Media	CTA 218	3
			Introduction to Literature	ENG 250	3
			Women Writers	ENG 279	3

Associate of Science (60 credits)*					

General Education (41-46 credits)**

Fox Valley Technical College Course Title			UW-Oshkosh Course Title		
Knowledge of Human Cultures and the Natural World (20-25)			**Knowledge of Human Cultures and the Natural World (20-25)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
General Biology	10-806-114	4	Biological Concepts	BIOLOGY 105	4
General Chemistry	10-806-134	4	General, Organic and Biochemistry	CHEM 101	4
General Physics	10-806-154	4	College Physics 1	PHYS/AST 171	4
General Anatomy & Physiology	10-806-177	4	Human Anatomy	BIOLOGY 211	4
Advanced Anatomy & Physiology	10-806-179	4	Human Physiology	BIOLOGY 212	4
Microbiology	10-806-197	4	Microbial Survey	BIOLOGY 233	4
Quantitative Reasoning	**10-804-135**	**3**	**Quantitative Reasoning**	**MATH 105**	**3**
Introductory Statistics	**10-804-189**	**3**	**Problem Based Inquiry Seminar in Statistics**	**MATH 189**	**3**
College Algebra & Trigonometry	10-804-197	5	Pre-Calculus	MATH 108	5
Calculus 1	10-809-159	4	Calculus I	MATH 171	4
Calculus 2	10-809-188	4	Calculus II	MATH 172	4
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Introduction to Literature	20-801-204	3	Modern World Literature	ENGLISH 227	3
Literature and Popular Culture	20-801-221	3	English Elective	ENG 6	3
Introduction to Sociology	10-809-196	3	Introductory Sociology	SOC 101	3
Introduction to Psychology	10-809-198	3	General Psychology	PSYCH 101	3
Think Critically and Creatively	**10-809-103**	**3**	**General Elective**	**GEN ELEC 6**	**3**
Introduction to Ethics	10-809-166	3	Ethics	PHIL 105	3
Abnormal Psychology	10-809-159	3	Psychology of Abnormal Behavior	PSYCH 303	3
Developmental Psychology	10-809-188	3	Developmental Psychology	PSYCH 391	3
American History 1607-1865	20-803-211	3	Early United States History to 1877	HISTORY 201	3
Introduction to American Government	10-809-122	3	American Government and Politics	POLISCI 105	3
Microeconomics	10-809-143	3	Principles of Microeconomics	ECON 202	3
Macroeconomics	10-809-144	3	Principles of Macroeconomics	ECON 201	3
Critical and Creative Thinking Skills (6)*			**Critical and Creative Thinking Skills (6)***		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
General Biology	10-806-114	4	Biological Concepts	BIOLOGY 105	4
General Chemistry	10-806-134	4	General, Organic and Biochemistry	CHEM 101	4
General Physics	10-806-154	4	College Physics 1	PHYS/AST 171	4
General Anatomy & Physiology	10-806-177	4	Human Anatomy	BIOLOGY 211	4
Advanced Anatomy & Physiology	10-806-179	4	Human Physiology	BIOLOGY 212	4
Microbiology	10-806-197	4	Microbial Survey	BIOLOGY 233	4
Quantitative Reasoning	**10-804-135**	**3**	**Quantitative Reasoning**	**MATH 105**	**3**
Introductory Statistics	**10-804-189**	**3**	**Problem Based Inquiry Seminar in Statistics**	**MATH 189**	**3**
College Algebra & Trigonometry	10-804-197	5	Pre-Calculus	MATH 108	5
Calculus 1	10-804-198	4	Calculus I	MATH 171	4
Calculus 2	10-809-181	4	Calculus II	MATH 172	4
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Introduction to Literature	20-801-204	3	Modern World Literature	ENGLISH 227	3
Literature and Popular Culture	20-801-221	3	English Elective	ENG 6	3
Introduction to Sociology	10-809-196	3	Introductory Sociology	SOC 101	3
Introduction to Psychology	10-809-198	3	General Psychology	PSYCH 101	3
Think Critically and Creatively	**10-809-103**	**3**	**General Elective**	**GEN ELEC 6**	**3**
Introduction to Ethics	10-809-166	3	Ethics	PHIL 105	3
Abnormal Psychology	10-809-159	3	Psychology of Abnormal Behavior	PSYCH 303	3
Developmental Psychology	10-809-188	3	Developmental Psychology	PSYCH 391	3
American History 1607-1865	20-803-211	3	Early United States History to 1877	HISTORY 201	3
Introduction to American Government	10-809-122	3	American Government and Politics	POLISCI 105	3
Microeconomics	10-809-143	3	Principles of Microeconomics	ECON 202	3
Macroeconomics	10-809-144	3	Principles of Macroeconomics	ECON 201	3
Effective Communication (6)			**Effective Communication (6)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
English Composition 1	**10-801-136**	**3**	**First-Year College Writing**	**WRT 188**	**3**
English Composition 2	**20-801-223**	**3**	**Advanced Writing**	**WRT 287**	**3**
Speech OR	10-801-198	3	Introduction to Public Speaking	COMM 111	3

Oral/Interpersonal Communication	10-801-196	3	Introduction to Public Speaking	COMM 111	3

Intercultural Knowledge and Competence (3)			Intercultural Knowledge and Competence (3)		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Introduction to Literature	20-801-204	3	Modern World Literature	ENGLISH 227	3
Literature and Popular Culture	20-801-221	3	English Elective	ENG 6	3
Introduction to Diversity Studies	**10-809-172**	**3**	**Sociology Elective**	**SOC 13**	**3**
Spanish 1	20-802-211	4	Introduction to Spanish I	SPANISH 110	4
Spanish 2	20-802-212	4	Introduction to Spanish II	SPANISH 111	4

Individual, Social, and Environmental Responsibility (6)			Individual, Social, and Environmental Responsibility (6)		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Introduction to Diversity Studies	**10-809-172**	**3**	**Sociology Elective**	**SOC 13**	**3**
Introduction to Ethics	10-809-166	3	Ethics	PHIL 105	3
Introduction to Sustainability	10-806-112	3	Introduction to Sustainability	ENV STDS 102	3
Note: courses recorded in **bold** in this table incorporate high impact practices, and also fulfill this category.					

Electives (14-19 credits)****

Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Health & Fitness for Life	20-807-267	2	The Active Lifestyle	PHY ED 105	2

Additional Considerations

***The Associate of Science degree is primarily intended to provide a basic liberal arts background with an enhanced focus on knowledge of the physical and natural world and quantitative literacy. It is designed to provide the foundational courses in preparation for a bachelor's degree with highly structured major requirements (e.g., art, engineering, business, and the sciences including biology, chemistry, and pre-professional programs). Credits are focused toward and include additional coursework in the area of the Natural World (this learning area typically includes coursework in biology, chemistry, geology, physics, and mathematics).

****Each associate degree must contain a two-course sequence in which the first course provides the foundation for the second.

*****The Critical and Creative Thinking Skills learning goal includes inquiry, problem solving, and qualitative and quantitative reasoning proficiencies, and may be typically included as learning goals in different disciplines throughout the university curriculum. To meet this learning objective, students seeking the AA degree should select 6 additional credits from the Human Cultures and Knowledge of the Natural World category. Note that an individual course cannot be used to fulfill the requirements of two different learning goals.

******Any course in any category can be utilized to fulfill the electives category, as long as that course has not already been used to fulfill the requirement of another category.

General Education (41-46 credits)**

Lakeshore Technical College Course Title			UW-Green Bay Course Title		
Knowledge of Human Cultures and the Natural World (20-25)			**Knowledge of Human Cultures and the Natural World (20-25)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			Science and Math		
General Chemistry	10-806-134	4	Elective	CHEM Elective	4
General Physics 1	10-806-154	4	Fundamentals of Physics 1	PHYSICS 103	4
Principles of Sustainability	**10-806-112**	**3**	Elective	ENV SCI Elective	3
General Biology	10-806-114	4	Principals of Biology Cell/Molecular w/lab	BIOLOGY 201-202	4
Intro to Biochemistry	10-806-186	4	Elective	CHEM Elective	4
Basic Anatomy	10-806-189	3	Introduction to Human Biology	HUM BIO 102	3
Introductory Statistics	10-804-189	3	Introductory Statistics	BUS ADM 220	3
Calculus	10-804-198	4	Calculus and Analytic Geometry 1	MATH 202	4
Social Science, Humanities, and Fine Arts			Social Science, Humanities, and Fine Arts		
Introduction to Sociology	**10-809-196**	**3**	Intro to Sociology	SOCIOL 101	3
Introduction to Psychology	**10-809-198**	**3**	Intro to Psychology	PSYCH 102	3
Intro to Literature	20-801-204	3	Introduction to Literature	ENGLISH 104	3
Intro to American Government	10-809-122	3	Intro to American Government	POLSCI 101	3
Macroeconomics	10-809-144	3	Macroeconomic Analysis	ECON 202	3
Microeconomics	10-809-143	3	Microeconomic Analysis	ECON 203	3
Critical and Creative Thinking Skills (6)*			**Critical and Creative Thinking Skills (6)***		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			Science and Math		
General Chemistry	10-806-134	4	Elective	CHEM Elective	4
General Physics 1	10-806-154	4	Fundamentals of Physics 1	PHYSICS 103	4
Principles of Sustainability	**10-806-112**	**3**	Elective	ENV SCI Elective	3
General Biology	10-806-114	4	Principals of Biology Cell/Molecular w/lab	BIOLOGY 201-202	4
Intro to Biochemistry	10-806-186	4	Elective	CHEM Elective	4
Basic Anatomy	10-806-189	3	Introduction to Human Biology	HUM BIO 102	3
Introductory Statistics	10-804-189	3	Introductory Statistics	BUS ADM 220	3
Calculus	10-804-198	4	Calculus and Analytic Geometry 1	MATH 202	4
Social Science, Humanities, and Fine Arts			Social Science, Humanities, and Fine Arts		
Introduction to Sociology	**10-809-196**	**3**	Intro to Sociology	SOCIOL 101	3
Introduction to Psychology	**10-809-198**	**3**	Intro to Psychology	PSYCH 102	3
Intro to Literature	20-801-204	3	Introduction to Literature	ENGLISH 104	3
Intro to American Government	10-809-122	3	Intro to American Government	POLSCI 101	3
Macroeconomics	10-809-144	3	Macroeconomic Analysis	ECON 202	3
Microeconomics	10-809-143	3	Microeconomic Analysis	ECON 203	3
Effective Communication (6)			**Effective Communication (6)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
English Composition 1	**10-801-136**	**3**	First Year Writing	WF 100	3
English Composition 2	**20-801-203**	**3**	Research and Rhetoric	WF 105	3
Speech	10-801-198	3	Fundamentals of Public Address	COMM 103	3
Oral/Interpersonal Communication	10-801-196	3	Fundamentals of Interpersonal Communication	COMM 166	3
Intercultural Knowledge and Competence (3)			**Intercultural Knowledge and Competence (3)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Introduction to Diversity Studies	**10-809-172**	**3**	Ethnic Diversity & Human Values	HUM STUD 213	3
Race, Class, Gender	20-809-217	3	Elective - Democracy and Justice Studies	DJS Elective	3
Spanish 1	20-802-211	4	Introduction to the Spanish Language 1	SPANISH 101	3
Spanish 2	20-802-212	4	Introduction to the Spanish Language 2	SPANISH 102	4
Individual, Social, and Environmental Responsibility (6)			**Individual, Social, and Environmental Responsibility (6)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Introduction to Diversity Studies	**10-809-172**	**3**	Ethnic Diversity & Human Values	HUM STUD 213	3
Race, Class, Gender	20-809-217	3	Elective - Democracy and Justice Studies	DJS Elective	3
Introduction to Ethics: Theory and Application	**10-809-166**	**3**	Contemporary Ethical Issues	PHILOS 102	3
Principles of Sustainability	**10-806-112**	3	Elective	ENV SCI Elective	3
Note: courses throughout this table that are recorded with bold font incorporate high impact practices, and also fulfill this category.					

Electives (14-19 credits)****

Course Title	Course Number	Credits	Course Title	Course Number	Credits
Stress Management	10-XXX-XXX	1			
Accounting 1	10-101-111	4	Accounting Elective	ACCTG	4
Intro to Business Management	**10-102-110**	**3**	Business and Its Environment	BUS ADM 202	3
Intro to HR Management	**10-196-193**	**3**	Intro to Human Resources Management	HRM 362	3

Principles of Marketing	10-104-102	3	Principles of Marketing	MKTG 322	3
Supply Chain Management	10-182-131	3	Principles of Supply Chain Management	SCM 200	3

Additional Considerations

*The Associate of Science degree is primarily intended to provide a basic liberal arts background with an enhanced focus on knowledge of the physical and natural world and quantitative literacy. It is designed to provide the foundational courses in preparation for a bachelor's degree with highly structured major requirements (e.g., art, engineering, business, and the sciences including biology, chemistry, and pre-professional programs). Credits are focused toward and include additional coursework in the area of the Natural World (this learning area typically includes coursework in biology, chemistry, geology, physics, and mathematics).

**Each associate degree must contain a two-course sequence in which the first course provides the foundation for the second.

***The Critical and Creative Thinking Skills learning goal includes inquiry, problem solving, and qualitative and quantitative reasoning proficiencies, and may be typically included as learning goals in different disciplines throughout the university curriculum. To meet this learning objective, students seeking the AA degree should select 6 additional credits from the Human Cultures and Knowledge of the Natural World category.

****Any course in any category can be utilized to fulfill the electives category, as long as that course has not already been used to fulfill the requirement of another category.

Associate of Science (60 credits)*

General Education (41-46 credits)**

Mid-State Technical College Course Title			UW-Stevens Point Course Title		
Knowledge of Human Cultures and the Natural World (20-25)			**Knowledge of Human Cultures and the Natural World (20-25)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			Science and Math		
Environmental Science *	20-806-215	3	People, Resources, and the Biosphere	NRES 150	3
General Biology	10-806-114	4	General Biology	BIOL 101	4
General Chemistry	10-806-134	4	Basic Chemistry	CHEM 101	4
Basic Anatomy	10-806-189	3	Human Anatomy	BIOL 387	3
General Anatomy & Physiology	10-806-177	4	Natural Science Elective		4
Advanced Anatomy & Physiology	10-806-179	4	Natural Science Elective		4
Microbiology *	10-806-197	4	Natural Science Elective		4
General Physics I	10-806-154	4	Applied Principles of Physics I	PHYS 201	4
College Physics I	10-806-143	3	Natural Science Elective		3
Soil & Water Resources	10-001-198	3	Introduction to Soil and Water Resources	NRES 251	3
Principles of Sustainability *	**10-806-112**	**3**	**Natural Resources Elective**		**3**
Intro to Physical Geography	20-806-206	5	Natural Science Elective		5
Introductory Statistics *	10-804-189	3	Elementary Statistical Methods	MATH 255	3
Trigonometry with Applications	10-804-196	4	Precalculus Trigonometry	MATH 119	4
College Algebra with Applications	10-804-195	3	Precalcus Algebra	MATH 118	3
Calculus and Analytic Geometry 1	20-804-236	5	Calculus I	MATH 225	5
Quantitative Reasoning *	10-804-135	3	Mathematical Applications, Appreciations, and Skills	MATH 105	3
Elementary Math Education 1 *	20-804-227	4	Fundamental Mathematical Concepts for Elementary Teachers I	MATH 228	4
Elementary Math Education 2 *	20-804-237	4	Fundamental Mathematical Concepts for Elementary Teachers II	MATH 338	4
Social Science, Humanities, and Fine Arts			Social Science, Humanities, and Fine Arts		
Think Critically & Creatively *	**10-809-103**	**3**	**Critical Thinking**	**PHIL 121**	**3**
Intro to Ethics: Theory and Application *	**10-809-166**	**3**	Introduction to Ethics in Society	PHIL 101	3
Environmental Ethics*	20-809-226	3	Humanities Elective		3
Introduction to Philosophy *	**20-809-260**	**3**	Introduction to Philosophy	PHIL 100	3
Intro to American Government *	**10-809-122**	**3**	American Politics	POLI 101	3
Cultural Anthropology & Human Diversity *	**20-809-283**	**3**	Humanities Elective		3
History of the United States to 1877	20-803-215	3	United States to 1877	HIST 176	3
World History to 1500	20-803-258	3	World History to 1500	HIST 101	3
World History since 1500	20-803-259	3	World History since 1500	HIST 102	3
Introduction to Literature	20-801-255	3	Introduction to the Study of Literature	ENGL 200	3
Contemporary World Literature	20-801-247	3	Humanities Elective		3
Children's Literature	20-801-233	3	Children's Literature	ENGL 275	3
Art Appreciation	20-815-201	3	Introduction to the Visual Arts	ART 100	3
Basic Photography	20-815-240	3	Photography 1	ART 215	3
Music Appreciation *	**20-805-201**	**3**	Appreciation and History of Music	MUS 100	3
Music in Film	20-805-280	3	Arts Elective		3
Principles of Macroeconomics *	**20-809-287**	**3**	Principles of Macroeconomics	ECON 110	3
Principles of Microeconomics *	**20-809-291**	**3**	Principles of Microeconomcis	ECON 111	3
Intro to Sociology *	**10-809-196**	**3**	Introduction to Sociology	SOC 101	3
Marriage and Family *	**20-809-275**	**3**	Marriage and the Family	SOC 240	3
Introduction to Psychology *	**10-809-198**	**3**	Introduction to Psychology	PSYC 110	3
Developmental Psychology *	10-809-196	3	Human Growth and Development: A Life Span Approach	HD 265	3
Educational Psychology *	20-809-254	3	Educational Psychology	PSYC 381	3
Abnormal Psychology *	**20-809-237**	3	Abnormal Psychology	PSYC 351	3
Critical and Creative Thinking Skills (6)*			**Critical and Creative Thinking Skills (6)***		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			Science and Math		
Environmental Science *	20-806-215	3	People, Resources, and the Biosphere	NRES 150	3
General Biology	10-806-114	4	General Biology	BIOL 101	4
General Chemistry	10-806-134	4	Basic Chemistry	CHEM 101	4
Basic Anatomy	10-806-189	3	Human Anatomy	BIOL 387	3
General Anatomy & Physiology	10-806-177	4	Natural Science Elective		4
Advanced Anatomy & Physiology	10-806-179	4	Natural Science Elective		4
Microbiology *	10-806-197	4	Natural Science Elective		4
General Physics I	10-806-154	4	Applied Principles of Physics I	PHYS 201	4
College Physics I	10-806-143	3	Natural Science Elective		3
Soil & Water Resources	10-001-198	3	Introduction to Soil and Water Resources	NRES 251	3
Principles of Sustainability *	**10-806-112**	**3**	**Natural Resources Elective**		**3**
Intro to Physical Geography	20-806-206	5	Natural Science Elective		5
Introductory Statistics *	10-804-189	3	Elementary Statistical Methods	MATH 255	3
Trigonometry with Applications	10-804-196	4	Precalculus Trigonometry	MATH 119	4
College Algebra with Applications	10-804-195	3	Precalcus Algebra	MATH 118	3
Calculus and Analytic Geometry 1	20-804-236	5	Calculus I	MATH 225	5
Quantitative Reasoning *	10-804-135	3	Mathematical Applications, Appreciations, and Skills	MATH 105	3
Elementary Math Education 1 *	20-804-227	4	Fundamental Mathematical Concepts for Elementary Teachers I	MATH 228	4
Elementary Math Education 2*	20-804-237	4	Fundamental Mathematical Concepts for Elementary Teachers II	MATH 338	4

Social Science, Humanities, and Fine Arts			Social Science, Humanities, and Fine Arts		
Think Critically & Creatively *	10-809-103	3	Critical Thinking	PHIL 121	3
Intro to Ethics: Theory and Application *	10-809-166	3	Introduction to Ethics in Society	PHIL 101	3
Environmental Ethics*	20-809-226	3	Humanities Elective		3
Introduction to Philosophy *	20-809-260	3	Introduction to Philosophy	PHIL 100	3
Intro to American Government *	10-809-122	3	American Politics	POLI 101	3
Cultural Anthropology & Human Diversity *	20-809-283	3	Humanities Elective		3
History of the United States to 1877	20-803-215	3	United States to 1877	HIST 176	3
History of the United States since 1877	20-803-219	3	United States since 1877	HIST 177	3
World History to 1500	20-803-258	3	World History to 1500	HIST 101	3
World History since 1500	20-803-259	3	World History since 1500	HIST 102	3
Introduction to Literature	20-801-255	3	Introduction to the Study of Literature	ENGL 200	3
Contemporary World Literature	20-801-247	3	Humanities Elective		3
Children's Literature	20-801-233	3	Children's Literature	ENGL 275	3
Art Appreciation	20-815-201	3	Introduction to the Visual Arts	ART 100	3
Basic Photography	20-815-240	3	Photography 1	ART 215	3
Music Appreciation *	20-805-201	3	Appreciation and History of Music	MUS 100	3
Music in Film	20-805-280	3	Arts Elective		3
Principles of Macroeconomics *	20-809-287	3	Principles of Macroeconomics	ECON 110	3
Principles of Microeconomics *	20-809-291	3	Principles of Microeconomcis	ECON 111	3
Intro to Sociology *	10-809-196	3	Introduction to Sociology	SOC 101	3
Marriage and Family *	20-809-275	3	Marriage and the Family	SOC 240	3
Introduction to Psychology *	10-809-198	3	Introduction to Psychology	PSYC 110	3
Developmental Psychology *	10-809-196	3	Human Growth and Development: A Life Span Approach	HD 265	3
Educational Psychology *	20-809-254	3	Educational Psychology	PSYC 381	3
Abnormal Psychology *	20-809-237	3	Abnormal Psychology	PSYC 351	3

Effective Communication (6)			Effective Communication (6)		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
English Composition 1	10-801-136	3	Freshman English	ENG0L 101	3
English 2	20-801-223	3	Sophomore English	ENGL 202	3
Speech	10-801-198	3	Fundamentals of Oral Communication	COMM 101	3
Creative Writing	20-801-227	3	Introduction to Creative Writing	ENGL 253	3
Oral/Interpersonal Communication	10-801-196	3	Foundations of Workplace Communication	COMM 180	3
Intercultural Knowledge and Competence (3)			Intercultural Knowledge and Competence (3)		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Introduction to Diversity Studies *	10-809-172	3	Social Science Elective		3
Race, Class, Gender *	20-809-217	3	Social Science Elective		3
Cultural Anthropology & Human Diversity *	20-809-283	3	Humanities Elective		3
Spanish 1	20-802-217	4	First Semester Spanish	SPAN 101	4
Spanish 2	20-802-221	4	Second Semester Spanish	SPAN 102	4
Contemporary World Literature	20-801-247	3	Humanities Elective		3
Introduction to World Religions *	20-809-223	3	Humanities Elective		3
Individual, Social, and Environmental Responsibility (6)			Individual, Social, and Environmental Responsibility (6)		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Introduction to Diversity Studies *	10-809-172	3	Social Science Elective		3
Race, Class, Gender *	20-809-217	3	Social Science Elective		3
Cultural Anthropology & Human Diversity *	20-809-283	3	Humanities Elective		3
Contemporary World Literature	20-801-247	3	Humanities Elective		3
Introduction to World Religions *	20-809-223	3	Humanities Elective		3
Environmental Ethics*	20-809-226	3	Humanities Elective		3
Principles of Sustainability *	10-806-112	3	Natural Resources Elective		3
Note: courses throughout this table that are recorded with bold font and an asterisk incorporate high impact practices, and also fulfill this category.					

Electives (14-19 credits)****					
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Physical Fitness for Life *	20-807-204	1	Wellness Elective		1
Stress Management: Fitness for Life *	20-807-203	1	Wellness Elective		1
Nutrition for Life *	20-807-202	1	Wellness Elective		1

Additional Considerations

*The Associate of Science degree is primarily intended to provide a basic liberal arts background with an enhanced focus on knowledge of the physical and natural world and quantitative literacy. It is designed to provide the foundational courses in preparation for a bachelor's degree with highly structured major requirements (e.g., art, engineering, business, and the sciences including biology, chemistry, and pre-professional programs). Credits are focused toward and include additional coursework in the area of the Natural World (this learning area typically includes coursework in biology, chemistry, geology, physics, and mathematics).

**Each associate degree must contain a two-course sequence in which the first course provides the foundation for the second.

***The Critical and Creative Thinking Skills learning goal includes inquiry, problem solving, and qualitative and quantitative reasoning proficiencies, and may be typically included as learning goals in different disciplines throughout the university curriculum. To meet this learning objective, students seeking the AA degree should select 3 additional credits from the Human Cultures and Knowledge of the Natural World category.

****Any course in any category can be utilized to fulfill the electives category, as long as that course has not already been used to fulfill the requirement of another category.

General Education (41-46 credits)**

Moraine Park Technical College Course Title			Lakeland University Course Title		
Knowledge of Human Cultures and the Natural World (20-25)			**Knowledge of Human Cultures and the Natural World (20-25)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
Basic Anatomy	10-806-189	3	Life Sciences 1	BIO 111	3
Anatomy & Physiology I	20-806-207	4	Human Anatomy & Physiology I	BIO 211	4
Anatomy & Physiology II	20-806-208	4	Human Anatomy & Physiology II	BIO 212	4
College Algebra	20-804-212	4	Advanced Algebra	MAT 140	3
Introductory Statistics	**10-804-189**	**3**	**Probability and Statistics**	**MAT 220**	**3**
General Chemistry	10-806-134	4	Everyday Chemistry	CHM 100	4
Principles of Chemistry I	20-806-245	5	Principles of Chemistry I	CHM 131	4
Principles of Chemistry II	20-806-249	5	General Chemistry II: Introduction to Analytical Chemistry	CHM 202	4
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Developmental Psychology	20-809-233	3	Human Growth and Development	PSY 330	3
General Psychology	20-809-251	3	General Psychology	PSY 200	3
Introduction to Ethics: Theory and Application	10-809-166	3	Ethics	PHI 232	3
Introduction to Literature	20-801-255	3	Approaching Literature	ENG 190	3
Introduction to Sociology	**20-809-271**	**3**	**Introduction to Sociology**	**SOC 100**	**3**
Think Critically and Creatively	**10-809-103**	**3**	**CORE 1: Foundations of Critical Thinking**	**GEN 130**	**3**
Introduction to American Government	10-809-122	3	American Government 1	POL 221	3
Principles of Microeconomics	20-809-291	3	Principles of Microeconomics	ECN 230	3
Principles of Macroeconomics	20-809-207	3	Principles of Microeconomics	ECN 235	3
Critical and Creative Thinking Skills (6)*			**Critical and Creative Thinking Skills (6)***		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
Basic Anatomy	10-806-189	3	Life Sciences 1	BIO 111	3
Anatomy & Physiology I	20-806-207	4	Human Anatomy & Physiology I	BIO 211	4
Anatomy & Physiology II	20-806-208	4	Human Anatomy & Physiology II	BIO 212	4
College Algebra	20-804-212	4	Advanced Algebra	MAT 140	3
Introductory Statistics	10-804-189	3	Probability and Statistics	MAT 220	3
General Chemistry	10-806-134	4	Everyday Chemistry	CHM 100	4
Principles of Chemistry I	20-806-245	5	Principles of Chemistry I	CHM 131	4
Principles of Chemistry II	20-806-249	5	General Chemistry II: Introduction to Analytical Chemistry	CHM 202	4
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Developmental Psychology	20-809-233	3	Human Growth and Development	PSY 330	3
General Psychology	20-809-251	3	General Psychology	PSY 200	3
Introduction to Ethics: Theory and Application	10-809-166	3	Ethics	PHI 232	3
Introduction to Literature	20-801-255	3	Approaching Literature	ENG 190	3
Introduction to Sociology	**20-809-271**	**3**	**Introduction to Sociology**	**SOC 100**	**3**
Think Critically and Creatively	**10-809-103**	**3**	**CORE 1: Foundations of Critical Thinking**	**GEN 130**	**3**
Introduction to American Government	10-809-122	3	American Government 1	POL 221	3
Introduction to Diversity Studies	**10-809-172**	**3**	**Majority/Minority Relations**	**SOC 210**	**3**
Principles of Microeconomics	20-809-291	3	Principles of Microeconomics	ECN 230	3
Principles of Macroeconomics	20-809-207	3	Principles of Microeconomics	ECN 235	3
Effective Communication (6)			**Effective Communication (6)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
English Composition 1	**20-801-219**	**3**	**Composition 1: Academic Writing**	**GEN 110**	**3**
English Composition 2	**20-801-223**	**3**	**Composition 2: Argumentation and Research**	**GEN 112**	**3**
Oral and Interpersonal Communications OR	10-801-196	3	Fundamentals of Public Speaking	COM 111	3
Speech	10-801-198	3			
Intercultural Knowledge and Competence (3)			**Intercultural Knowledge and Competence (3)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Introduction to Diversity Studies	**10-809-172**	**3**	**Majority/Minority Relations**	**SOC 210**	**3**
Contemporary World Literature	801-247	3	Exploring World Literature	ENG 200	3
Spanish 1	20-802-217	4	Elementary Spanish 1 with Lab	SPA 101	4
Spanish 2	802-212	4	Elementary Spanish 2 with Lab	SPA 102	4
Individual, Social, and Environmental Responsibility (6)			**Individual, Social, and Environmental Responsibility (6)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Introduction to Diversity Studies	**10-809-172**	**3**	**Majority/Minority Relations**	**SOC 210**	**3**
Introduction to Ethics: Theory and Application	10-809-166	3	Ethics	PHI 232	3
Contemporary World Literature	801-247	3	Exploring World Literature	ENG 200	3

Note: courses throughout this table that are recorded with bold font incorporate high impact practices, and also fulfill this category.

Electives (14-19 credits)****

Course Title	Course Number	Credits	Course Title	Course Number	Credits
Accounting 1	10-101-112	3	Financial Accounting Principles	ACC 210	3
Accounting 2	10-101-114	3	Managerial Accounting Principles	ACC 220	3
Data Management, Analysis & Reporting	10-101-138	3	Management Information Systems	BUS 301	3
Introduction to Business	10-102-101	3	Pathways to Success: Intro to Business	BUS 150	3

Additional Considerations

*The Associate of Science degree is primarily intended to provide a basic liberal arts background with an enhanced focus on knowledge of the physical and natural world and quantitative literacy. It is designed to provide the foundational courses in preparation for a bachelor's degree with highly structured major requirements (e.g., art, engineering, business, and the sciences including biology, chemistry, and pre-professional programs). Credits are focused toward and include additional coursework in the area of the Natural World (this learning area typically includes coursework in biology, chemistry, geology, physics, and mathematics).

**Each associate degree must contain a two-course sequence in which the first course provides the foundation for the second.

***The Critical and Creative Thinking Skills learning goal includes inquiry, problem solving, and qualitative and quantitative reasoning proficiencies, and may be typically included as learning goals in different disciplines throughout the university curriculum. To meet this learning objective, students seeking the AA degree should select 6 additional credits from the Human Cultures and Knowledge of the Natural World category.

****Any course in any category can be utilized to fulfill the electives category, as long as that course has not already been used to fulfill the requirement of another category.

General Education (41-46)**

Northeast Wisconsin Technical College Course Title			UW-Green Bay Title		
Knowledge of Human Cultures and the Natural World (20-25)			**Knowledge of Human Cultures and the Natural World (20-25)**		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Science and Math			Science and Math		
Introductory Statistics	10-804-189	**3**	**Introductory Statistics**	BUS ADM 220	**3**
Quantitative Reasoning	10-804-135	**3**	**Quantitative Reasoning**	MATH 102	**3**
College Algebra	10-804-195	3	MATH Elective* (*MATH 104 if both Algebra and Trig are completed)		3
Trigonometry	10-804-196	**3**	**MATH Elective**		**3**
College Algebra and Trig	10-804-196	**3**	**Pre-Calculus**	MATH 104	**3**
Calculus I	10-804-198	**4**	**Calculus and Analytic Geometry I**	MATH 202	**4**
Calculus 2	10-804-181	**4**	**Calculus and Analytic Geometry II**	MATH 203	**4**
General Biology	10-806-114	4	Principles of Bio Cell/Molecular w/ Lab	BIO 201 + 202	4
General Chemistry	10-806-134	**4**	**CHEM Elective**		**4**
Microbiology	10-806-197	**4**	**Principles of Microbiology**	BIO 323 + 324	**4**
College Chemistry	10-806-134	**5**	**Principles of Chemistry I w/lab**	CHEM 211 + 213	**5**
General Anatomy & Physiology	10-806-177	**4**	HUM BIOL Elective** (**HUM BIOL 240 + 241 if both A&P courses are taken)		4
Advanced Anatomy & Physiology	10-806-179	**4**	**HUM BIOL Elective**		**4**
Basic Anatomy (No lab)	10-806-189	**3**	**Introduction to Human Biology**	HUM BIOL 102	**3**
Principles of Sustainability	10-806-112	**3**	**ENV SCI Elective**		**3**
General Physics I	10-806-154	4	Fundamentals of Physics I	PHYSICS 103	4
General Physics 2	10-806-164	**4**	**Fundamentals of Physics II**	PHYSICS 104	**4**
Energy-Intro to Renewable & Sustainable	10-480-101	**4**	**Energy and Society**	ENV SCI 260	**4**
Social Science, Humanities, and Fine Arts			Social Science, Humanities, and Fine Arts		
Intro to Sociology	10-809-196	**3**	**Intro to Sociology**	SIOL 101	**3**
Intro to Ethics	10-809-166	**3**	**Contemporary Ethical Issues**	PHILOS 102	**3**
Intro to American Government	10-809-122	**3**	**Intro to American Government**	POL SCI 101	**3**
Economics	10-809-195	**3**	**ECON Elective**		**3**
Microeconomics	10-809-143	**3**		TBD	**3**
Macroeconomics	10-809-144	**3**		TBD	**3**
Intro to Psychology	10-809-198	**3**	**Intro to Psychology**	PSYCH 102	**3**
Developmental Psychology	10-809-188	**3**	**Intro to Lifespan Development**	PSYCH 203	**3**
Abnormal Psychology	10-809-159	**3**	**Abnormal Psychology**	PSYCH 435	**3**
Thinking Critically & Creatively	10-809-103	**3**	**Introduction to Philosophy**	PHILOS 101	**3**
Photography-Digital	10-203-104	**3**	**Introduction to Photography**	ART 243	**3**
Ceramics I	10-306-200	**3**	**ART Elective**		**3**
Ceramics II	10-306-201	**3**	**ART Elective**		**3**
Critical and Creative Thinking Skills (6)*			**Critical and Creative Thinking Skills (6)***		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Science and Math			Science and Math		
Introductory Statistics	10-804-189	**3**	**Introductory Statistics**	BUS ADM 220	**3**
Quantitative Reasoning	10-804-135	**3**	**Quantitative Reasoning**	MATH 102	**3**
College Algebra	10-804-195	3	MATH Elective* (*MATH 104 if both Algebra and Trig are completed)		3
Trigonometry	10-804-196	**3**	**MATH Elective**		**3**
College Algebra and Trig	10-804-196	**3**	**Pre-Calculus**	MATH 104	**3**
Calculus I	10-804-198	**4**	**Calculus and Analytic Geometry I**	MATH 202	**4**
Calculus 2	10-804-181	**4**	**Calculus and Analytic Geometry II**	MATH 203	**4**
General Biology	10-806-114	4	Principles of Bio Cell/Molecular w/ Lab	BIO 201 + 202	4
General Chemistry	10-806-134	**4**	**CHEM Elective**		**4**
Microbiology	10-806-197	**4**	**Principles of Microbiology**	BIO 323 + 324	**4**
College Chemistry	10-806-134	**5**	**Principles of Chemistry I w/lab**	CHEM 211 + 213	**5**
General Anatomy & Physiology	10-806-177	**4**	HUM BIOL Elective** (**HUM BIOL 240 + 241 if both A&P courses are taken)		4
Advanced Anatomy & Physiology	10-806-179	**4**	**HUM BIOL Elective**		**4**
Basic Anatomy (No lab)	10-806-189	**3**	**Introduction to Human Biology**	HUM BIOL 102	**3**
Principles of Sustainability	10-806-112	**3**	**ENV SCI Elective**		**3**
General Physics I	10-806-154	4	Fundamentals of Physics I	PHYSICS 103	4
General Physics 2	10-806-164	**4**	**Fundamentals of Physics II**	PHYSICS 104	**4**
Energy-Intro to Renewable & Sustainable	10-480-101	**4**	**Energy and Society**	ENV SCI 260	**4**
Social Science, Humanities, and Fine Arts			Social Science, Humanities, and Fine Arts		
Intro to Sociology	10-809-196	**3**	**Intro to Sociology**	SIOL 101	**3**
Intro to Ethics	10-809-166	**3**	**Contemporary Ethical Issues**	PHILOS 102	**3**
Intro to American Government	10-809-122	**3**	**Intro to American Government**	POL SCI 101	**3**
Economics	10-809-195	**3**	**ECON Elective**		**3**
Microeconomics	10-809-143	**3**		TBD	**3**
Macroeconomics	10-809-144	**3**		TBD	**3**
Intro to Psychology	10-809-198	**3**	**Intro to Psychology**	PSYCH 102	**3**
Developmental Psychology	10-809-188	**3**	**Intro to Lifespan Development**	PSYCH 203	**3**
Abnormal Psychology	10-809-159	**3**	**Abnormal Psychology**	PSYCH 435	**3**
Thinking Critically & Creatively	10-809-103	**3**	**Introduction to Philosophy**	PHILOS 101	**3**
Photography-Digital	10-203-104	**3**	**Introduction to Photography**	ART 243	**3**
Ceramics I	10-306-200	**3**	**ART Elective**		**3**

Ceramics II	10-306-201	3	ART Elective		3

Effective Communication (6)			Effective Communication (6)		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
English Composition I	**10-801-136**	**3**	**First Year Writing**	**WF 100**	3
English Composition II	**10-801-185**	**3**	**Research and Rhetoric**	**WF 105**	3
Oral & Interpersonal Communication	**10-801-196**	**3**	**Fundamentals of Interpersonal Communication**	**COMM 166**	3
Speech	**10-809-198**	**3**	**Fundamentals of Public Address**	**COMM 133**	3
Technical Reporting	10-801-197	3	COMM Elective		3

Intercultural Knowledge and Competence (3)			Intercultural Knowledge and Competence (3)		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Intro to Diversity Studies	**10-809-172**	**3**	**Ethnic Diversity and Human Values**	**HUM STUD 213**	**3**
Ethnic Literature	10-801-145	3	English Elective		3
Spanish 101	**10-802-104**	**4**	**Introduction to the Spanish Language I**	**SPANISH 101**	**4**
Spanish 102	**10-802-105**	**4**	**Introduction to the Spanish Language I**	**SPANISH 102**	**4**

Individual, Social, and Environmental Responsibility (6)			Individual, Social, and Environmental Responsibility (6)		
Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Intro to Diversity Studies	**10-809-172**	**3**	**Ethnic Diversity and Human Values**	**HUM STUD 213**	**3**
Ethnic Literature	10-801-145	3	English Elective		3
Principles of Sustainability	**10-806-112**	**3**	**ENV SCI Elective**		3
Energy-Intro to Renewable & Sustainable	**10-480-101**	**4**	**Energy and Society**	**ENV SCI 260**	**4**
Note: courses throughout this table that are recorded with bold font incorporate high impact practices, and also fulfill this category.					

Electives (14-19 credits)****

Course Title	**Course Number**	**Credits**	**Course Title**	**Course Number**	**Credits**
Personal Wellness & Fitness	**10-546-101**	**3**	Meets WTCS Health/Wellness/Physical Education Requirements		
LEAD Fitness & Wellness	10-504-190	1	Meets WTCS Health/Wellness/Physical Education Requirements		
College 101	**10-890-101**	**1**	Meets NWTC Requirements		

Additional Considerations

*The Associate of Arts degree is primarily intended to provide a broad liberal arts background and is designed to be the foundation for most bachelor degree programs and to satisfy general education requirements. Credits are focused toward the area of Human Cultures (this learning area typically includes coursework in social sciences, humanities, fine arts, and world languages).

**Each associate degree must contain a two-course sequence in which the first course provides the foundation for the second.

***The Critical and Creative Thinking Skills learning goal includes inquiry, problem solving, and qualitative and quantitative reasoning proficiencies, and may be typically included as learning goals in different disciplines throughout the university curriculum. To meet this learning objective, students seeking the AA degree should select 6 additional credits from the Human Cultures and Knowledge of the Natural World category.

****Any course in any category can be utilized to fulfill the electives category, as long as that course has not already been used to fulfill the requirement of another category.

General Education (41-46 credits)**

Waukesha County Technical College			UW-Milwaukee		
Knowledge of Human Cultures and the Natural World (20-25)			**Knowledge of Human Cultures and the Natural World (20-25)**		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
Quantitative Reasoning	20-804-2xx	3	Mathematical Literacy for College Students 2	MATH 102	3
Intermediate Algebra	20-804-2xx	3	Introduction to College Algebra	MATH 105	3
College Algebra	20-804-2xx	3	College Algebra	MATH 116	3
Trigonometry with Apps	10-804-196	3	Trigonometry	MATH 117	3
Introductory Statistics	10-804-189	3	Elementary Statistical Analysis	MTHSTAT 215	3
Calculus 1	10-804-198	4	Calculus & Analytic Geometry 1	MATH 231	4
Calculus 2	10-804-156	4	Calculus and Analytic Geometry II	MATH 232	4
Calculus 3	10-804-167	4	Calculus and Analytic Geometry III	MATH 233	4
General Biology	10-806-114	4	Elements of Biology	BIO SCI 102	4
Intro to Biochemistry	10-806-186	4	Survey of Biochemistry	CHEM 103	4
General Chemistry	10-806-134	4	General Chemistry	CHEM 100	5
College Physics I	10-806-143	3	General Physics Lab 1	PHYSICS 121	1
			Physics Elective	PHYSICS EL	2
Calculus Based Physics 1	10-806-187	3	Physics I (Calculus Treatment)	PHYSICS 209	4
			Lab Physics I (Calculus Treatment)	PHYSICS 214	1
Calculus Based Physics 2	10-806-188	3	Physics II (Calculus Treatment	PHYSICS 210	4
			Lab Physics II (Calculus Treatment)	PHYSICS 215	1
Anatomy and Physiology 1	20-806-2xx	4	Anatomy and Physiology 1	BIO SCI 202	4
Anatomy and Physiology 2	20-806-2xx	4	Anatomy and Physiology II	BIO SCI 203	4
Microbiology	10-806-197	4	General Survey of Microbiology	BIO SCI 101	4
			The Solar System	CGS ASTRON 105	3
			Introduction to Environmental Science	CGSBIO 190	3
			Physical Geology	CGS GLG 101	4
			World Regional Geography	CGS GEO 110	3
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Intro to Ethics: Theory & Applications	**10-809-166**	**3**	Moral Problems	PHIL 243	3
Introduction to Psychology	**10-809-198**	**3**	Introduction to Psychology	PSYC 101	3
Developmental Psychology	10-809-188	3	Child Psychology	PSYC 260	3
Economics	10-809-195	3	Introductory Economics	ECON 100	3
Microeconomics	10-809-143	3	Principles of Microeconomics	ECON 103	3
Principles of Macroeconomics	10-809-xxx	3	Principles of Macroeconomics	ECON 104	3
Introduction to Sociology	**10-809-196**	**3**	Introduction to Sociology	SOCIOL 101	3
Introduction to Literature	**20-801-2xx**	**3**	Introduction to English Studies	ENGLISH 215	3
Introduction to World Religions	**20-809-2xx**	**3**	Introduction to World Religions	RELIGST 101	3
Critical and Creative Thinking Skills (6)*			**Critical and Creative Thinking Skills (6)***		
Course Title	Course Number	Credits	Course Title	Course Number	Credits
Science and Math			**Science and Math**		
Quantitative Reasoning	20-804-2xx	3	Mathematica I Literacy for College Students 2	MATH 102	3
Intermediate Algebra	20-804-2xx	3	Introduction to College Algebra	MATH 105	3
College Algebra	20-804-2xx	3	College Algebra	MATH 116	3
Trigonometry with Apps	10-804-196	3	Trigonometry	MATH 117	3
Introductory Statistics	10-804-189	3	Elementary Statistical Analysis	MTHSTAT 215	3
Calculus 1	10-804-198	4	Calculus & Analytic Geometry 1	MATH 231	4
Calculus 2	10-804-156	4	Calculus and Analytic Geometry II	MATH 232	4
Calculus 3	10-804-167	4	Calculus and Analytic Geometry III	MATH 233	4
General Biology	10-806-114	4	Elements of Biology	BIO SCI 102	4
Intro to Biochemistry	10-806-186	4	Survey of Biochemistry	CHEM 103	4
General Chemistry	10-806-134	4	General Chemistry	CHEM 100	5
College Physics I	10-806-143	3	General Physics Lab 1	PHYSICS 121	1
			Physics Elective	PHYSICS EL	2
Calculus Based Physics 1	10-806-187	3	Physics I (Calculus Treatment)	PHYSICS 209	4
			Lab Physics I (Calculus Treatment)	PHYSICS 214	1
Calculus Based Physics 2	10-806-188	3	Physics II (Calculus Treatment	PHYSICS 210	4
			Lab Physics II (Calculus Treatment)	PHYSICS 215	1
Anatomy and Physiology 1	20-806-2xx	4	Anatomy and Physiology I	BIO SCI 202	4
Anatomy and Physiology 2	20-806-2xx	4	Anatomy and Physiology II	BIO SCI 203	4
Microbiology	10-806-197	4	General Survey of Microbiology	BIO SCI 101	4
			The Solar System	CGS ASTRON 105	3
			Introduction to Environmental Science	CGSBIO 190	3
			Physical Geology	CGS GLG 101	4
			World Regional Geography	CGS GEO 110	3
Social Science, Humanities, and Fine Arts			**Social Science, Humanities, and Fine Arts**		
Introduction to Psychology	**10-809-198**	**3**	Introduction of Psychology	PSYC 101	3
Developmental Psychology	10-809-188	3	Child Psychology	PSYC260	3
Economics	10-809-195	3	Introductory Economics	ECON 100	3

Microeconomics	10-809-143	3	Principles of Microeconomics	ECON 103	3
Principles of Macroeconomics	20-809-xxx	3	Principles of Macroeconomics	ECON 104	3
Introduction to Sociology	**10-809-186**	**3**	Introduction to Sociology	SOCIOL 101	3
Intro to Ethics: Theory & Applications	**10-809-166**	**3**	Moral Problems	PHIL 243	3
Introduction to Literature	**20-801-2xx**	**3**	Introduction to English Studies	ENGLISH 215	3
Introduction to World Religions	**20-809-2xx**	**3**	Introduction to World Religions	RELIGST 101	3

Effective Communication (6) / Effective Communication (6)

Course Title	Course Number	Credits	Course Title	Course Number	Credits
English Composition I	10-801-136	3	College Writing and Critical Reading	ENG 101	3
English Composition II	**20-801-2xx**	**3**	College Writing and Research	ENGLISH 102	3
Speech	10-801-198	3	Public Speaking	COM 103	3
Oral/Interpersonal Comm	10-801-196	3	Business & Professional Communication	COMM 105	3
Business Writing	**20-801-2xx**	**3**	Business Writing	ENGLISH 205	3
Technical Reporting	**10-801-197**	**3**	Technical Writing	ENGLISH 206	3

Intercultural Knowledge and Competence (3) / Intercultural Knowledge and Competence (3)

Course Title	Course Number	Credits	Course Title	Course Number	Credits
Intro to Diversity Studies	**10-809-172**	**3**	American Minority Groups	SOCIOL 224	3
Introduction to World Religions	**20-809-xxx**	**3**	Introduction to World Religions	RELIGST 101	3
Contemporary World Literature	20-809-247	3	Humanities Elective		3
			First Semester Spanish	CGS SPA 101	4
			Second Semester Spanish	CGS SPA 102	4
			World Regional Geography	CGS GEO 110	3

Individual, Social, and Environmental Responsibility (6) / Individual, Social, and Environmental Responsibility (6)

Course Title	Course Number	Credits	Course Title	Course Number	Credits
Intro to Diversity Studies	**10-809-172**	**3**	American Minority Groups	SOCIOL 224	3
Intro to Ethics: Theory and App	**10-809-166**	**3**	Moral Problems	PHIL 243	3
Contemporary American Society	10-809-197	3	Solving Social Problems	SOCIOL 102	3
Introduction to World Religions	**20-809-2xx**	**3**	Introduction to World Religions	RELIGST 101	3
			Introduction to Environmental Science	CGS BIO 190	3
			World Regional Geography	CGS GEO 110	3

Note: courses recorded in bold in this table incorporate high impact practices, and also fulfill this category.

Electives (14-19 credits)****

Course Title	Course Number	Credits	Course Title	Course Number	Credits
Marketing Principles	**10-104-102**	**3**	Principles of Marketing	BUS ADM 300	3
Business Law	**10-102-160**	**3**	Business Law 1	BUS ADM 391	3
Intro to Criminal Justice Studies	10-504-101	3	Intro to Criminal Justice	CRM-JST 110	3
Forensic Investigation I	10-504-124	3	Criminalistics	CRM-JST 481	3
Criminal Evidence	10-504-115	3	Criminal Evidence/Investigation	CRM-JST 480	3
Constitutional Rights Crim Law	10-504-116	3	Criminal Process	CRM-JST 300	3
Medical Terminology	10-501-101	3	Language of Medicine	HS 222	3

Additional Considerations

*The Associate of Science degree is primarily intended to provide a basic liberal arts background with an enhanced focus on knowledge of the physical and natural world and quantitative literacy. It is designed to provide the foundational courses in preparation for a bachelor's degree with highly structured major requirements (e.g., art, engineering, business, and the sciences including biology, chemistry, and pre-professional programs). Credits are focused toward and include additional coursework in the area of the Natural World (this learning area typically includes coursework in biology, chemistry, geology, physics, and mathematics).

**Each associate degree must contain a two-course sequence in which the first course provides the foundation for the second.

***The Critical and Creative Thinking Skills learning goal includes inquiry, problem solving, and qualitative and quantitative reasoning proficiencies, and may be typically included as learning goals in different disciplines throughout the university curriculum. To meet this learning objective, students seeking the AA degree should select 6 additional credits from the Human Cultures and Knowledge of the Natural World category.

****Any course in any category can be utilized to fulfill the electives category, as long as that course has not already been used to fulfill the requirement of another category.

WISCONSIN
TECHNICAL COLLEGE
S Y S T E M

January 18, 2022

Dr. Tracy Pierner
Blackhawk Technical College
6004 S County Rd G
Janesville WI 53547

Dear Dr. Pierner:

Program Approval Submission Approved by Board

Program Name: Liberal Arts – Associate of Science

Program Number: 20-800-2

CIP Code: 24.0101

SOC Code: N/A

Education Director: Valerie Crespin-Trujillo, 608-266-5517
                     valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the January 18, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
        Sara Mackey, WTCS
        Dr. Karen Schmitt, BTC
        Lynn Neitzel, BTC
        Sandy McNutt, BTC

March 16, 2022

Dr. Chris Matheny
Fox Valley Technical College
1825 North Bluemound Drive
Appleton WI 54913

Dear Dr. Chris Matheny:

Program Approval Submission Approved by Board

Program Name: Liberal Arts – Associate of Science

Program Number: 20-800-2

CIP Code: 24.0101

SOC Code: N/A

Education Director: Valerie Crespin-Trujillo, 608-266-5517
                       valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the March 16, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
        Sara Mackey, WTCS
        Dr. Jennifer Lanter, FVTC
        Carisa Corser, FVTC
        Mary Hrubes, FVTC
        Kim Olson, FVTC

COLLEGES: Blackhawk, Chippewa Valley, Fox Valley, Gateway, Lakeshore, Madison Area, Mid-State, Milwaukee Area, Moraine Park, Nicolet Area, Northcentral, Northeast Wisconsin, Northwood, Southwest Wisconsin, Waukesha County, Western

January 18, 2022

Dr. Paul Carlsen
Lakeshore Technical College
1290 North Avenue
Cleveland WI 53015-1414

Dear Dr. Carlsen:

Program Approval Submission Approved by Board

Program Name:	Liberal Arts – Associate of Science
Program Number:	20-800-2
CIP Code:	24.0101
SOC Code:	N/A
Education Director:	Valerie Crespin-Trujillo, 608-266-5517
	valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the January 18, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
        Sara Mackey, WTCS
        Mr. Jim Lemerond, LTC
        Lynne Thompson, LTC
        Barbara Backhaus, LTC
        Tanya Wasmer, LTC

COLLEGES: Blackhawk, Chippewa Valley, Fox Valley, Gateway, Lakeshore, Madison Area, Mid-State, Milwaukee Area, Moraine Park, Nicolet Area, Northcentral, Northeast Wisconsin, Northwood, Southwest Wisconsin, Waukesha County, Western

January 18, 2022

Dr. Shelly Mondeik
Mid-State Technical College
500 32nd Street North
Wisconsin Rapids WI 54494

Dear Dr. Mondeik:

Program Approval Submission Approved by Board

Program Name:	Liberal Arts – Associate of Science
Program Number:	20-800-2
CIP Code:	24.0101
SOC Code:	N/A
Education Director:	Valerie Crespin-Trujillo, 608-266-5517
	valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the January 18, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
       Sara Mackey, WTCS
       Dr. Deb Stencil, Mid-State
       Lyz Hassett, Mid-State

January 18, 2022

Ms. Bonnie Baerwald
Moraine Park Technical College
235 North National Avenue
Fond du Lac WI 54936

Dear Ms. Baerwald:

Program Approval Submission Approved by Board

Program Name:	Liberal Arts – Associate of Science
Program Number:	20-800-2
CIP Code:	24.0101
SOC Code:	N/A
Education Director:	Valerie Crespin-Trujillo, 608-266-5517
	valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the January 18, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
        Sara Mackey, WTCS
        Dr. James Eden, MPTC
        Lisa Pollard, MPTC
        Rhea Behlke, MPTC
        Carrie Braskamp, MPTC

Morna K. Foy, President

4622 University Avenue
PO Box 7874
Madison, Wisconsin 53707-7874
608.266.1207 | Wisconsin Relay System: 711
info@wtcsystem.edu | www.wtcsystem.edu

January 18, 2022

Dr. H. Jeffrey Rafn
Northeast Wisconsin Technical College
2740 West Mason Street
Green Bay WI 54307

Dear Dr. Rafn:

Program Approval Submission Approved by Board

Program Name:	Liberal Arts – Associate of Science
Program Number:	20-800-2
CIP Code:	24.0101
SOC Code:	N/A
Education Director:	Valerie Crespin-Trujillo, 608-266-5517
	valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the January 18, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
        Sara Mackey, WTCS
        Dr. Kathryn Rogalski, NWTC
        Vicki Csida, NWTC
        Barbara Conard, NWTC

January 18, 2022

Dr. Richard Barnhouse
Waukesha County Technical College
800 Main Street
Pewaukee WI 53072

Dear Dr. Barnhouse:

Program Approval Submission Approved by Board

Program Name: Liberal Arts – Associate of Science

Program Number: 20-800-2

CIP Code: 24.0101

SOC Code: N/A

Education Director: Valerie Crespin-Trujillo, 608-266-5517
                                    valerie.crespintrujillo@wtcsystem.edu

The Program Approval submission for the above program was approved at the January 18, 2022 meeting of the Wisconsin Technical College System Board.

No questions or concerns were raised by members of the Board. Please contact the education director listed above if you have any questions concerning the development and approval process for this program.

Sincerely,

Dr. Colleen A. McCabe
Provost and Vice President

cc: Valerie Crespin-Trujillo, WTCS
          Sara Mackey, WTCS
          Dr. Brad Piazza, WCTC
          Jean Furstenberg, WCTC
          Dr. Randall Coorough, WCTC
          Dannise Bartlett, WCTC

HOST CAMPUS PRESENTATION BY UW-STEVENS POINT: ONE POINT—MANY FUTURES

REQUESTED ACTION

For information only.

SUMMARY

UW-Stevens Point (UWSP) will emphasize the university's impact locally, regionally, nationally, and internationally while highlighting three students who exemplify the innovative work done on the campus. Professor Kathryn Zalewski will introduce the students.

First, Colin Barker, a graduate student in the Master of Science-Athletic Training program will present his work as a Graduate Assistant supporting the Marshfield Scholars Program. The UWSP Marshfield Scholars are undergraduates invested in a Marshfield Clinic-UWSP partnership addressing social determinants of health for people seeking services at Marshfield Clinic. Colin is a mentor to these students under the supervision of faculty member Tiff Akins.

Next, Havilah Vang started at the Aber Suzuki Center at age four and is currently in the B.M. of Music Education program at UWSP. Havilah's presentation will focus on the outreach she and her family have had on "Mercy Village" in Cambodia. Her goal is to be a musical missionary across the world.

Finally, Graeme Gross, a senior majoring in German and International Studies—fluent in German—serves as the Department of Foreign Languages Web Developer, the School of Humanities and Global Studies (SHGS) Alumni Outreach Coordinator, and the Campus Activities and Student Engagement (CASE) Entertainment Event Producer. Graeme will speak about his international learning experience as a student in the College of Letters and Sciences.

Presenters

- Kathy Zalewski, Professor and Program Director of Doctor of Physical Therapy (DPT) Program
- Colin Barker, UW-Stevens Point graduate student, pursuing an M.S. in Athletic Training
- Havilah Vang, UW-Stevens Point undergraduate student, pursuing a B.M. in Music Education
- Graeme Gross, UW-Stevens Point undergraduate student, pursuing B.A. degrees in German and International Studies

STUDENT NEEDS AND THE IMPACT OF COVID-19: A PANEL DISCUSSION WITH SENIOR STUDENT AFFAIRS OFFICERS AND STUDENTS

REQUESTED ACTION

None. This item is intended to highlight issues and inform future decision-making.

SUMMARY

Covid-19 heightened awareness of the barriers and needs of today's college students. This Education Committee conversation, facilitated by a panel of Senior Student Affairs Officers (SSAO's) and two current students, will offer context and insight into how staff and students navigated some of the challenges presented by the pandemic. Specifically, three topic areas will be explored:
- The student athlete experience
- The student leader experience
- The behavioral and mental health of staff and students

The goal of today's session is to provide a window into the life of students outside the classroom for the past two years. This session will set the stage for future conversations at the Education Committee meetings that will dive deeper into the needs and concerns of today's students. Future topic discussions will include:
- Food and housing insecurities
- Student financial needs and insecurities
- Increasing numbers and needs of students with disabilities, including students on the Autism Spectrum
- Serving unique populations, such as adult learners, veterans, BIPOC students, and others

Presenters

- Sandi Scott, Dean of Students, UW-Stout
- Tammy McGuckin, Vice Provost of Student Affairs and Enrollment Services, UW-Parkside
- Harry Anderson, Associate Vice Chancellor for Student Affairs, UW-Superior
- Artanya Wesley, Vice Chancellor of Student Affairs, UW-Whitewater
- Leah Shibilski, Student, UW-Stout
- Bridget Kauzlaric, Student, UW-Stevens Point

BACKGROUND

This discussion is part of a broader scope and sequence focused on student success. Over the past two years, the full Board and the Education Committee have received continuous updates and data regarding the varied and profound disruptions caused by the COVID-19 pandemic across the UW System. This discussion builds on that information and demonstrates some specific impacts on our students.

As the conversations progress in future meetings, emphasis will be placed how campuses have been innovative, partnered, and strategized to address student needs, what gaps exist in the ability to provide critical student services, and how we might work as a system to close those gaps.

Related Reports and References

- UW System Counseling Impact Reports, available at: https://www.wisconsin.edu/student-behavioral-health/get-the-facts/

REPORT OF THE VICE PRESIDENT FOR ACADEMIC AND STUDENT AFFAIRS

REQUESTED ACTION

None. For information only.

SUMMARY

Along with co-presenters, Vice President Anny Morrobel-Sosa will provide an update on three items:
1. Student Telehealth Services Support
2. ACT/SAT Waiver Preliminary Data
3. UW System Office of Professional & Instructional Development

Presenters
- Dr. Anny Morrobel-Sosa, UW System Vice President for Academic and Student Affairs
- Dr. John Achter, UW System Interim Associate Vice President for Student Success and Student Behavioral Health Coordinator
- Dr. Ben Passmore, UW System Associate Vice President for Policy Analysis and Research
- Dr. Carleen Vande Zande, UW System Associate Vice President for Academic Programs & Faculty Advancement

BACKGROUND

As part of Governor Evers' "Get Kids Ahead" Initiative, the UW System will receive a $5 million investment from American Recovery Plan Act (ARPA) funds to provide students better access to mental health supports when needed. This allocation of funds, which will be transferred to UW System Administration, will be used in a competitive bid process to procure telehealth services that will fill critical gaps in currently available on-campus services.

In 2020, due to COVID-19 related challenges, UW institutions suspended ACT/SAT requirements as part of the application process. A systemwide extension of the ACT/SAT test-optional policy was supported by all 13 UW institutions and approved by the Board of Regents at the December 2021 Board meeting (Resolution 11754) to include 2022 applicants/Fall 2023 Enrollees. Coupled with implementing the test-optional policy, a three-year study was launched in 2021 (to do what?) through the UW-Madison Student Success Through Applied Research (SSTAR) lab. A preliminary update on the SSTAR lab's data-driven research will be provided.

Annually, the systemwide Office of Professional & Instructional Development, housed within the Office of Academic Planning and Faculty Advancement, hosts a series of professional events. The Vice President will share an overview of the well-attended events.

ATTACHMENTS

(A) Memo from President Falbo on ACT-SAT Waiver Impacts

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March 31, 2022

To: Regent Amy Bogost, Education Committee Chair

CC: Board of Regents

From: Interim President Michael J. Falbo

In December of 2021, the UW System Board of Regents (BoR) adopted a resolution suspending the ACT/SAT requirement through the 2024-25 academic year and directed the UW System's Office of Academic and Student Affairs (OASA) to study the impact of the suspension with the request to provide the results of preliminary findings no later than 01 April 2022.

OASA engaged Student Success Through Applied Research (SSTAR) Lab at UW-Madison to conduct a long-term research study of the impacts of the ACT/SAT suspension policy as part of the admissions process on students and System institutions. The attached memo from Dr. Ben Passmore to Dr. Anny Morrobel-Sosa present the preliminary findings of the first year of a three-year study, and is summarized as follows:

As is pertains to UW-Madison, the ACT/SAT test-optional policy did not significantly increase diversity within the applicant pool. Furthermore, applicants submitting test scores were more likely to be admitted and come from traditional backgrounds.

Q1. Did test-optional admissions change the applicant pool?
Preliminary Findings: *If testing requirements for admission are barriers to access, test-optional admissions have the potential to induce a higher rate of application of students from disadvantaged backgrounds. While test-optional admissions lead to increased volume in applications at UW-Madison, it did not lead to important changes in applicant characteristics compared to previous admission cycles.*

Q2. Who submits test scores in a test-optional year?
Preliminary Findings: *63% of applicants submitted test scores during UW-Madison's first test-optional year. Students who submitted a test were less likely to be female, Black, Hispanic, Pell-eligible, first generation, and more likely to come from higher-income neighborhoods and have higher high school GPAs. Furthermore, students submitting SAT or ACT test scores were more likely to apply for STEM and Engineering majors, as well as having completed more rigorous high school coursework.*

Q3. How is differential test submission affecting admission decisions?

Preliminary Findings: *Students who chose to submit a test in their application to UW-Madison during test-optional admissions were 2 percentage points more likely to be offered admission compared to students who did not (represents a 3% increase from baseline).*

As regards to all UW System institutions, the ACT/SAT has been cited as being useful in providing substantial utility per other areas including but not limited to; determinant for the awarding of merit aid, and provisioning of needed academic support for admitted students. The early research has inherent limitations due to data availability.

Q4. Do standardized test scores predict student success in college?

Preliminary Findings: *A one-point increase in ACTs is associated with 0.06 higher freshmen GPA (2% increase) and a 0.8 percentage point increase in first-year retention (1% increase). These results hold even when the models control for student SES variables such as EFC, Pell, and first-generation status.*

The Office of Policy Analysis and Research continues to work to access dependable and quality applicant GPA data, information key to helping determine the predicative quality of the high school GPA when compared to the ACT/SAT.

A final report on the will be provided in April 2024.

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March 25, 2022

To: Dr. Anny Morrobel-Sosa, Vice President OASA

Fr: Dr. Ben Passmore, Associate Vice President

Re: ACT/SAT Test Optional Policy – Preliminary Evaluation Findings

Background:
In December of 2021, the UW System Board of Regents (BoR) adopted a resolution suspending the ACT/SAT requirement through the 2024-25 academic year. Coupled with the ACT/SAT suspension, the BoR directed the UW System's Office of Academic and Student Affairs (OASA) to study the impact of the suspension. OASA engaged Student Success Through Applied Research (SSTAR) Lab at UW-Madison to conduct a long-term research study of the impacts of the ACT/SAT suspension policy as part of the admissions process on students and System institutions. Initiating the study with the SSTAR Lab, OASA set the following guiding objectives:

1. Determine the degree to which the ACT/SAT score accurately predicts the academic achievement of UW students;
2. Evaluate the long-term consequences of permanently suspending the standardized test score requirement or going test-optional;
3. Identify if there are other means of measuring a student's academic readiness for college that could be used in place of a standardized test score; and
4. Understand national trends and context among other universities.

The Board of Regents requested preliminary results be provided by April 1, 2022, with final reporting and potential recommendations submitted in April of 2024.

Below is a summary of the preliminary findings as well additional context of the work carried out by SSTAR, led by Drs. Viviana Rodriguez and Nicholas Hillman, over the last two years of the ACT/SAT suspension across the UW System institutions.

Context and Preliminary Findings:
The suspension of the ACT/SAT as an admission requirement need be considered within the context of broader policy changes in the application and admission process across the UW System.   Additional application-specific changes include:

- The majority of the UW institutions (excluding UW Madison, UW La Crosse and UW Eau Claire) waiving their application fee beginning in the Fall of 2021 and extending the waiver again in Fall of 2022
- A relaunched UW System Electronic Application (eApp) providing a more applicant-friendly process or applying to multiple UW institutions

The aforementioned application policy changes coupled with the suspension of the ACT/SAT requirement, has helped deliver an unprecedented surge in applications with substantial growth in underrepresented and disadvantaged populations.

Recent enrollments have also been impacted by admission rates exceeding 90% for the 12 UW institutions (excluding UW Madison). The historically high 90% admission rate complicates efforts to isolate a single initiative such as test-optional policies on admissions.

UW Madison: The Early Contextual Subset

UW Madison's previous two-year application and enrollment trends provide greater context for consideration, per the elimination of the ACT/SAT requirement and the sustaining of the application fee as well as the lack of cross-institutional utilization of the eApp involving UW Madison.

Four initial research questions have framed preliminary findings, with the first three specific to UW Madison. Presented below, the initial findings are a summary of data findings derived from research conducted by SSTAR and shared with the Office of Policy Research and Analysis.

Q1. Did test-optional admissions change the applicant pool?
__Preliminary Findings:__ If testing requirements for admission are barriers to access, test-optional admissions have the potential to induce a higher rate of application of students from disadvantaged backgrounds. While test-optional admissions lead to increased volume in applications at UW-Madison, it did not lead to important changes in applicant characteristics compared to previous admission cycles.

Q2. Who submits test scores in a test-optional year?
__Preliminary Findings:__ 63% of applicants submitted test scores during UW-Madison's first test-optional year. Students who submitted a test were less likely to be female, Black, Hispanic, Pell-eligible, first generation, and more likely to come from higher-income neighborhoods and have higher high school GPAs. Furthermore, students submitting SAT or ACT test scores were more likely to apply for STEM and Engineering majors, as well as having completed more rigorous high school coursework.

Q3. How is differential test submission affecting admission decisions?
__Preliminary Findings:__ Students who chose to submit a test in their application to UW-Madison during test-optional admissions were 2 percentage points more likely to be offered admission compared to students who did not (represents a 3% increase from baseline).

Based questions 1-3 as it relates to preliminary UW Madison applicant information, the ACT/SAT test-optional policy did not significantly increase diversity within the applicant pool. Furthermore, applicants submitting test scores were more likely to be admitted and come from traditional backgrounds.

A fourth research question was applied to applicants of all UW System institutions. The ACT/SAT has also been cited as being useful in providing substantial utility per other areas including but not limited to; determinant for the awarding of merit aid, and provisioning of needed academic support for admitted students. The early research has inherent limitations due to data availability.

Q4. Do standardized test scores predict student success in college?
__Preliminary Findings:__ A one-point increase in ACTs is associated with 0.06 higher freshmen GPA (2% increase) and a 0.8 percentage point increase in first-year retention (1% increase). These results hold even when the models control for student SES variables such as EFC, Pell, and first-generation status.

Looking ahead, OPAR is working to access dependable and quality applicant GPA data, information key to helping determine the predicative quality of the high school GPA when compared to the ACT/SAT.

Please note, this memo represents preliminary findings and neither represents a summary nor recommendations per UWSA or SSTAR. A final report will be provided in April of 2024.