REQUEST FOR AUTHORIZATION TO IMPLEMENT A BACHELOR OF SCIENCE IN ENGINEERING AT UNIVERSITY OF WISCONSIN-MILWAUKEE PREPARED BY UW-MILWAUKEE

ABSTRACT

The University of Wisconsin (UW)-Milwaukee proposes to establish a Bachelor of Science in Engineering (Engineering, BS) as a new degree program via its Department of Industrial & Manufacturing Engineering (IME). The Engineering, BS will be the second bachelor's degree offered by the department. The curriculum will meet ABET accreditation credit requirements for math, science, and engineering like the current Industrial Engineering major offered by the department. However, the required engineering courses will come from a wider range of engineering disciplines and students will choose specialized interdisciplinary tracks based on their educational interests and career goals. Such specializations may be driven by emerging cross-disciplinary technical fields (e.g., advanced manufacturing, connected systems, emerging technologies such as assistive artificial intelligence) or by the desire to have an immersive interdisciplinary experience (e.g., engineering & pre-medicine, engineering & entrepreneurship). We expect a significant fraction of students in this program to be individuals who might have completed an associate's degree from a partner institution such as Waukesha County Technical College, and/ or might already be in the workforce. We also anticipate Engineering, BS enrollment from students who might have been, for one reason or another, dropped an existing degree program within the College of Engineering & Applied Science. Thus, we expect this program to help with student retention. The purpose of the program is to not only prepare students for future engineering jobs, but to also attract new groups of students to the profession by creating new flexible and customizable pathways.

Engineering, BS graduates will have diverse career opportunities and can pursue roles in research and development, project management, consulting, entrepreneurship, and engineering positions where interdisciplinary skills are highly valued. Occupational employment projections indicate continued demand for engineers. The U.S. Bureau of Labor Statistics projects the growth rate for engineers as much faster than the average growth rate for all occupations. We do not anticipate any changes in tuition structure for this degree program or the need to create new engineering courses. The curriculum will be built utilizing existing courses offered by UW-Milwaukee.

Program Identification

University Name: University of Wisconsin-Milwaukee (UWM)

Title of Proposed Academic Program: Engineering, BS

COST AND REVENUE PROJECTIONS NARRATIVE UNIVERSITY OF WISCONSIN-MILWAUKEE BACHELOR OF SCIENCE IN ENGINEERING

PROGRAM INTRODUCTION

The University of Wisconsin (UW)-Milwaukee proposes to establish a Bachelor of Science in Engineering (Engineering, BS) as a new degree program via its Department of Industrial & Manufacturing Engineering (IME). The Engineering, BS will be the second bachelor's degree offered by the department. The curriculum will meet ABET accreditation credit requirements for math, science, and engineering like the current Industrial Engineering major offered by the department. However, the required engineering courses will come from a wider range of engineering disciplines and students will choose specialized interdisciplinary tracks based on their educational interests and career goals. Such specializations may be driven by emerging cross-disciplinary technical fields (e.g., advanced manufacturing, connected systems) or by the desire to have an immersive interdisciplinary experience (e.g., engineering & pre-medicine, engineering & entrepreneurship). The purpose of the program is to not only prepare students for future engineering jobs, but also attract new groups of students to the profession by creating new flexible and customizable pathways.

COST REVENUE NARRATIVE

Section I - Enrollment

We anticipate the Engineering (BS) program to attract 20 new students in year one with an escalation of enrollment over five years to 90 by the start of year five. Student FTE assumption is that 10% of students will enroll in the program part-time.

Section II - Credit Hours

Credit hours are conservatively estimated using 15 credit hours per student FTE in the program.

Section III - Faculty and Staff Appointments

The courses for the Engineering, BS are courses that exist as part of other majors. Therefore, instruction will be delivered by existing faculty and instructional academic staff as part of their normal course load. No additional hires of faculty or staff are anticipated. At present there is enough existing capacity in classes or classes where the enrollment cap can be raised to accommodate the projected new students without needing new sections or faculty. As the program grows, we may need to increase course offerings. That increase will only be made when enrollment numbers support such increases.

Section IV - Program Revenues

Students will pay standard undergraduate tuition, segregated fees, and the College of Engineering & Applied Science differential tuition. For the current academic year, standard residential tuition/segregated fees are \$5,010 per semester and differential tuition is \$700 per semester (\$58.33 per credit with a \$700 max) for a full-time student enrolled in (12-18 cr. range) per semester. It is anticipated that some resident students in this program will attend part-time. A student taking one 3-credit course will pay \$1,522 in standard tuition/fees and \$175 in differential tuition. Nonresident tuition/fees and engineering differential total \$11,710 per semester for a full-time student enrolled in (12-18 cr. range) per semester. The tuition and fees for different credits are shown below.

Tuition Revenues

Tuition revenues will be calculated based on current undergraduate tuition rates for Fall 2023 and Spring 2024

Additional Tuition

College of Engineering & Applied Science undergraduate students pay \$53.88/credit in additional tuition with a maximum of \$700/semester.

Program Revenues and GPR

No non-tuition revenue is anticipated for this program.

Section V - Program Expenses

As the Engineering, BS utilizes existing courses the cost to the university will be minimal. We will make strategic investments in marketing campaigns and creating articulation agreements with regional transfer partners.

Salary and Fringe

Instruction will be delivered by existing faculty as part of their normal course load. No additional expenses will be anticipated. Salary and Fringe is based on existing course section instruction. The FTE Time commitment will increase in line with enrollment.

A new staff member will be hired for advising and recruitment if necessary to maintain the student to advisor ratio within the College based on overall undergraduate enrollment. A current faculty member will serve as Program Director and will be compensated by a course release. This includes both salary and fringes and the program grows so will our FTE commitment.

Facilities and Capital Equipment

Instruction will be delivered using existing facilities and capital equipment. No additional expenses are anticipated.

Other Expenses

University of Wisconsin - Milwaukee Faculty Document No. 3539, October 17, 2024 **Education Committee Item X.**Attachment C

The program will be marketed, and the expenses included are in line with normal promotional activities for degree programs.

Section VI - Net Revenue

Net revenues will be distributed according to the UWM budget model. Any portion of net revenues above expenses will be invested in strategic priorities of the program.

Degree Designation: Bachelor of Science

Proposed Classification of Instructional Programs (CIP) Code: 14.0101

Mode of Delivery: Primarily face-to-face with some hybrid or online course options

Department: Industrial & Manufacturing Engineering

College: College of Engineering & Applied Science

Proposed Date of Implementation: Fall 2025

PROGRAM INFORMATION

Overview of the Program

The curriculum is designed for the student to gain a comprehensive understanding of fundamental engineering principles, theories, and practices across various fields, allowing them to develop a broad knowledge base and a multidisciplinary perspective. The flexible nature of the program gives students the opportunity to pursue an engineering degree while simultaneously exploring other areas of interest at UWM. Students can choose an area of emphasis within engineering and from over 100 minors, certificates and pre-professional programs offered by UWM as part of their program of study. The Industrial & Manufacturing Engineering Department will get feedback annually from its Industrial Advisory Committee to ensure the program meets the needs of local engineering employers.

Throughout the program, students are encouraged to engage in experiential learning, research projects, and internships to apply interdisciplinary knowledge in real-world contexts. They gain practical skills, adaptability, and a strong problem-solving mindset that prepares them for the complex challenges of today's engineering landscape. A total of 120 credits are needed for graduation: (1) 18 credits in math including probability and data analytics, (2) 12 credits of natural science (3) 45 credits of engineering including a 3-credit capstone course and 12 credits in an engineering emphasis area. (4) 15 credits to meet GER Art, Humanities and Social Science distribution requirements, and (5) 30 credits for interdisciplinary areas of study. The program meets the credit requirements in math, science, and engineering to be accredited by ABET.

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 90 students will be enrolled in the program and 74 students will have graduated from the program. It

anticipated that this program will be attractive to transfer students who will make up most of the initial enrollment in the program. The average student retention rate is projected to be close to 80% for new freshmen and 90% for transfer students, based on the average for new students in the Industrial & Manufacturing Department for the last 10 years. The average new freshman will take four years to complete the program. The average transfer student will take two to three years to complete the program.

Table 1: Five-Year Academic Degree Program Enrollment Projections

Students/Year	Year 1	Year 2	Year 3	Year 4	Year 5
New Students	20	25	35	35	35
Continuing Students		18	33	48	55
Total Enrollment	20	43	68	83	90
Graduating Students		7	16	24	27

Tuition Structure

Students enrolled in the Engineering, BS program will pay standard tuition/segregated fees and the College of Engineering & Applied Science differential tuition. For the current academic year, standard residential tuition/segregated fees are \$5,010 per semester and differential tuition is \$700 per semester (\$58.33 per credit with a \$700 max) for a full-time student enrolled in (12-18 cr. range) per semester. It is anticipated that some resident students in this program will attend part-time. A student taking one 3-credit course will pay \$1,522 in standard tuition/fees and \$175 in differential tuition. Nonresident tuition/fees and engineering differential total \$11,710 per semester for a full-time student enrolled in (12-18 cr. range) per semester. The tuition and fees for different credits are shown below.

Student Accounts - Undergraduate Fee Schedule Spring 2024

^{*}Note: Segregated Fees are included in the Resident, Non-Resident, Minnesota and Midwest Rate rates.

# of		Non-	Minnesota w/		Segregated
Credits	Resident	Resident	Reciprocity	Midwest Rate	Fees*
1	690.18	1,190.17	869.80	866.33	337.88
2	1,105.99	2,105.97	1,465.23	1,458.29	401.39
3	1,521.80	3,021.77	2,060.66	2,050.25	464.90
4	1,937.61	3,937.57	2,656.09	2,642.21	528.41
5	2,353.42	4,853.37	3,251.52	3,234.17	591.92
6	2,769.23	5,769.17	3,846.95	3,826.13	655.43
7	3,185.04	6,684.97	4,442.38	4,418.09	718.94
8	3,600.85	7,600.77	5,037.81	5,010.05	782.45
9	3,953.15	8,453.06	5,569.73	5,538.50	782.45
10	4,305.45	9,305.35	6,101.65	6,066.95	782.45
11	4,657.75	10,157.64	6,633.57	6,595.40	782.45
12-18	5,010.05	11,009.93	7,165.49	7,123.85	782.45
19 or more, additional per charge credit	352.30	852.29	531.92	528.45	No additional segregated fee charges

Student Accounts - Additional (Differential) Per Credit Charge Spring 2024

Lubar School of Business Administration	Applies to 200-600 level courses	\$21.22 per credit
Biomedical Sciences	Junior and Senior majors	\$500 flat fee/student
College of Engineering & Applied Science	Undergraduate CEAS program	\$58.33 per credit (max \$700)

Student Learning Outcomes and Program Objectives

1. Students will have an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

- 2. Students will have an ability to apply engineering concepts to produce solutions that meet specified needs with consideration of economic factors
- 3. Students will have an ability to communicate effectively with a range of audiences
- 4. Students will have an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- 5. Students will have an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- 6. Students will have an ability to develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions
- 7. Students will have an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Program Requirements and Curriculum

Table 2 Engineering (BS) Curriculum

Engineering Red	quirement 45 credits Complete all the following courses:			
CIV ENG 203 ¹	Introduction to Solid Mechanics	4		
COMPSCI 202 ²	Introductory Programming Using Python	3		
EAS 200	Professional Seminar	1		
IND ENG 111 ³	Introduction to Engineering	3		
IND ENG 112 ⁴	Engineering Drawing & Computer Aided Design	3		
IND ENG 360	Engineering Economic Analysis	3		
MECHENG 405 ⁵	Product Realization	3		
MATLENG 201	Engineering Materials	4		
Engineering Technical Electives - Emphasis Area 21 credits				
Select 21 credits from BME, CIV ENG, COMPSCI, EAS, ELECENG, IND ENG,				
MATLENG, MECHENG with at least 12 credits at the 300-level or above. It is				
recommended that students select an emphasis area of at least 12 credits.				
(See examples)				
Mathematics 1	8 credits Complete the following courses:			
MATH 231	Calculus and Analytic Geometry I	4		
MATH 232	Calculus and Analytic Geometry II	4		
IND ENG 367	Introductory Statistics for Physical Sciences and	3		
Engineering Students				

Select at least 7 credits from the following: COMPSCI 317, 318, ELECENG	7				
234, MATH 115. 205, 233, 234, 240, 305, 313, 315, 341, MATHST 216, 361,					
362					
Natural Science 12 credits Complete at least 12 credits, including at least of					
laboratory course from the following list:					
BIO SCI 150, 152, 202, 203, CHEM 102, 104, 105, PHYSICS 120, 121, 122,	12				
123, 209, 210, 214, 215					
Free Electives - Interdisciplinary Area of Interest 30 credits	30				
Select 30 credits of free electives. It is recommended that students					
integrate a minor, certificates, or pre-profession program to personalize					
the degree plan that fits their individual interests/career plan.					
GER Distribution Requirement – 15 credits					
Arts	3				
Humanities	3				
ENGLISH 310 (HU OWCB) Writing, Speaking, and Technoscience in the 21st	3				
Century					
Social Science	6				
Students must also satisfy Oral and Written Communication (OWC) Part A ⁶	0-6				
Students must also satisfy the UWM Foreign Language Requirement ⁶	0-8				
Cultural Diversity - Arts, Humanities, or Social Science course must also satis	fy UWM				
Cultural Diversity Requirement					
TOTAL CREDITS	120				

Example Engineering Emphasis Areas						
Construction Engineering						
CIV ENG 431	Materials of Construction					
CIV ENG 455	Construction Planning, Equipment, and Methods					
CIV ENG 480	Software Applications for Civil Engineering					
CIV ENG 590	Urban Transportation Planning					
Embedded Systems						
ELECENG 140	Intro to Embedded Computing I: Digital Logic and					
	Microprocessors					
ELECENG 240	Intro to Embedded Computing II: C Programming for Embedded					
	Applications					
ELECENG 340	Embedded Systems I: C and C++ Programming for Embedded					
	Applications					
ELECENG 440	Embedded Systems II: Advanced Embedded Systems					
Engineering Managen	nent					
IND ENG 360	Engineering Economic Analysis					
IND ENG 370	Introduction to Operations Analysis					
IND ENG 571	Quality Control					
IND ENG 590	Project Management					

Manufacturing					
IND ENG 350	Manufacturing Processes or Materials and Processes in				
or MATLENG 330	Manufacturing				
<u>IND ENG 406</u>	Design for Six Sigma				
or MECH <u>ENG 406</u>					
IND ENG 470	Methods Engineering				
IND ENG 587	Lean Production Systems				
Processing of Engineering Materials					
MATLENG 431	Welding Engineering				
MATLENG 456	Metal Casting Engineering				
MATLENG 457	Engineering Composites				
MATLENG 471	Heat Treatment of Materials				
Software Engineering					
COMPSCI 250	Introductory Computer Programming				
COMPSCI 251	Intermediate Computer Programming				
COMPSCI 351	Data Structures and Algorithms				
COMPSCI 361	Introduction to Software Engineering				

^{1.} CIV ENG 203 can be substituted by CIV ENG 201; 2. COMPSCI 202 can be substituted by COMPSCI 250 or MECHENG 101; 3. IND ENG 111 can be substituted by BME 101, ELECENG 101 or MECHENG 110', 4. IND ENG 112 can be substituted by MECHENG 111 5. IND 405/MECHENG 405 can be substituted by IND ENG 485, 6. See <u>General Education Requirements</u> for details.

Collaborative Nature of the Program

The program is designed to facilitate partnerships with the over 100 minors, certificates and pre-professional programs offered by UWM; and with regional transfer partners (e.g., Milwaukee Area Technical College, Waukesha County Technical College, Gateway Technical College, Moraine Park Technical College). The program will also create pathways to support individuals who are already working in a technical field and need a bachelor's degree in engineering to enhance their skills and further their career.

Projected Time to Degree

Full-time students can finish the 120-credit program in four years. The program can be completed on a part-time basis, with the time to degree variable based on the number of credits taken each semester. The transfer friendly curriculum will offer a faster time to degree for many returning students and those with an AAS in engineering technology than currently available with traditional engineering programs.

Accreditation

The program intends to meet the general criteria for engineering baccalaureate level programs and seek accreditation by the Engineering Accreditation Commission of ABET

PROGRAM JUSTIFICATION

Rationale

As described in a report by the Universities of Wisconsin in May 2023, "Wisconsin is in a war for talent that extends globally". The Wisconsin workforce is becoming older with fewer younger workers entering the workplace. It is projected that the number of high school graduates will decline due to a relatively low birth rate and an aging population. The impact of the decline in the number of high school graduates on enrollment is further exacerbated by the falling participation rate of high school graduates who go on to college. With these significant demographic challenges and projected engineering workforce shortages, it will be crucial for educational institutions to adapt and be creative to provide the educated workforce needed for Wisconsin to remain competitive. A unique and non-traditional interdisciplinary engineering program like the Engineering, BS has the potential to attract more students to the engineering profession and meet the growing industry demand for engineers who can effectively tackle complex challenges that require a multidimensional approach.

Universities of Wisconsin, Office of the President, "Wisconsin and the UW System – Facts and Trends May 2023 (Online). Available:

https://www.wisconsin.edu/president/download/UWFactsTrends May2023.pdf.

Many of the pressing challenges faced by society, such as climate change, sustainable development, energy management, and healthcare, are multifaceted and require a holistic understanding. These fields demand engineers who can integrate knowledge from different disciplines to develop efficient and sustainable solutions. Employers seek engineers who can apply their knowledge in diverse contexts, work on interdisciplinary projects, contribute to innovation, and work effectively in cross-disciplinary teams. A new interdisciplinary engineering program can cater to these emerging areas and produce graduates with these specialized skills.

Institution and University of Wisconsin System Program Array

The proposed new program fits well with UWM's "Select Mission Statement" as seen online at https://uwm.edu/mission/ In particular, UWM seeks to "develop and maintain high quality undergraduate, graduate, and continuing education programs, "further academic and professional opportunities at all levels for women, minority, part-time, and financially or educationally disadvantaged students," "encourage others from institutions in the University of Wisconsin System and from other educational institutions, and "provide educational leadership in meeting future social, cultural, and technological challenges." This program would be the only general engineering type bachelor's degree offered in the University of Wisconsin System. The program will primarily serve industry needs in S.E Wisconsin and is not likely to impact other UW System engineering programs.

Need as Suggested by Student Demand

In this challenging enrollment environment, engineering programs will need to find areas of opportunity to recruit and retain additional students. The Engineering, BS aims to attract students who may not complete a traditional discipline-specific engineering degree: 1) Students interested in multiple areas of study. 2) Transfer students, including those with AAS degrees in engineering technology. 3) Students who have started college but left with no degree.

Multidisciplinary: UW-Milwaukee offers 213 degree programs. Many students want to attend a large university like UW-Milwaukee because of this wide array of programs and options. The engineering program gets many applicants who are interested in multiple areas of study. The traditional discipline-specific engineering majors are very sequential in nature and have very few if any free electives to allow students to pursue multiple areas of study without extending their time to degree. This forces the student to choose engineering or the other area of study. UW-Milwaukee also offers many pre-professional programs for students to prepare for graduate studies. There are students who would like to have a foundation in general engineering in readiness for a professional graduate degree (medicine, law, physical therapy, etc.), but find the specific courses they need in the pre-professional program do not fit into their current engineering degree. The Engineering, BS program will collaborate with other programs at UW-Milwaukee to create unique interdisciplinary study plans to allow students to pursue their multiple interests. There have already been conversations with the Doctor of Physical Therapy at UW-Milwaukee to create a pre-physical therapy concentration within the Engineering, BS with courses that are not normally in an engineering program. (e.g., General Biology, Human Anatomy, Human Physiology). The Engineering BS will take advantage of the wide range of program offerings offered by UW-Milwaukee to provide students with diverse skills and desired experiences.

Transfer Students: The Engineering, BS program will work with regional transfer partners on articulation agreements to encourage students to continue for a bachelor's degree in engineering. The need for the portability of credits and credentials between the Universities of Wisconsin and the Wisconsin Technical College System has been recognized for a long time, and decades of mutual work between and among the two systems and institutions has led to a strong culture of support for transfer and student success among the public colleges and universities of Wisconsin. To facilitate degree achievement of people with AAS degrees, on November 21, 2019, Wisconsin Statutes, § 36.31(2m) (b), the State of Wisconsin 72-Credit Transfer Rule, became law. In January 2024, UW-Milwaukee reached new transfer agreements with four regional technical colleges that will guarantee admission for their graduates. The agreements are with Milwaukee Area Technical College, Waukesha County Technical College, Moraine Park Technical College, and Gateway Technical College. All associate degree holders from the four colleges are guaranteed a seamless transfer of at least 60 credits toward a bachelor's degree at UWM. Interested students will only need to complete a brief intent form rather than a lengthier, formal admission application. While this law and the new agreements facilitate credit transfer, it aims at the transfer of the credits at the level of individual courses and for core general

education courses. This agreement is primarily about general education; traditionally, technology students do not take many GER distribution courses. The Engineering, BS offers students with technology background a more holistic degree program allowing them to graduate in two years complementing their prior education, hands-on skills, and current employment. The program will offer a faster time-to-degree for those with an AAS in Engineering Technology than currently available with traditional engineering programs.

Some College, No Degree: In the United States, approximately two million people each year enter postsecondary education for the first time. Eight years later, one-third of those who started have not earned any formal credential and are no longer enrolled. This former student population, also known as the "some college, no degree" population, is an important indicator for an economy that demands more workers with education and training beyond high school. This population also is important as a source of possible enrollment growth for postsecondary institutions in many parts of the country that are struggling with recent declines. Former students themselves also reap great personal benefits from obtaining degrees and certificates. In Wisconsin, the "some college, no degree" population was estimated at 721,678 in 2020. The Engineering, BS, with it's transfer friendly curriculum, will allow these students to count more of their previous credits which may encourage more to return to school to finish their degrees.

Need as Suggested by Market Demand

The U.S. Bureau of Labor Statistics projects employment in engineering occupations to grow faster than the average for all occupations from 2022 to 2032, with about 188,000 openings each year on average, due to employment growth and the need to replace workers who leave the occupation permanently. The median annual wage for this group was \$83,700 in May 2022, which was much higher than the median wage of all occupations of \$46,310. The Wisconsin Department of Workforce Development projects employment growth in engineering occupations (Standard Occupation Classification 17-200) to be 11.4% from 2020 to 2030 with estimated employment 42,466 in 2030. This is also faster than the projected 6.3% growth of all occupations in the state.

U.S. Bureau of Labor Statistics, "A-Z Index : Occupational Outlook Handbook," Office of Occupational Statistics and Employment Projections, 6 September 2023 (Online). Available: https://www.bls.gov/ooh/a-z-index.htm

State of Wisconsin, Department of Workforce Development, "Occupational Employment Projections" (Online). Available: https://jobscenterofwisconsin/wisconomy

An analysis of supply and demand (students graduated & employer need) for engineers was performed in 2022 for Wisconsin and the Midwest using data from Lightcast. The data shows there is a current shortage of engineering graduates to meet demand. This data indicates there is a severe shortage of engineering graduates in all fields of engineering

currently offered by UW-Milwaukee. The Engineering, BS will be offered by the Industrial & Manufacturing Department with many of the core courses drawn from the current Industrial Engineering major. The Lightcast data indicates over six openings per graduating student in Industrial Engineering related occupations in Wisconsin and the Midwest.

Lightcast degree completions and job openings for Wisconsin and the Midwest.

	Com	egree pletions 022	Jobs			Need		
Engineering Program	WI	Midwest	WI Positions	WI Annual Midwest Positions		Midwest Annual Openings	WI Job Openings/ Completions	Midwest Job Openings/ Completions
Environmental Engineering	42	492	4,393	479	49,280	5,114	11.40	10.39
Computer Science	286	10,414	58,241	5,894	687,327	71,753	20.61	6.89
Mechanical Engineering	896	10,675	15,766	1,347	183,015	15,597	1.50	1.46
Electrical Engineering	419	5,079	9,436	1,019	127,851	11,625	2.43	2.29
Biomedical Engineering	312	2,550	3,507	394	41,669	4,067	1.26	1.59
Civil Engineering	357	3,911	10,715	1,058	129,616	12,084	2.96	3.09
Industrial Engineering	232	2,248	14,506	1,402	144,720	15,628	6.04	6.95
Materials Engineering	98	873	5,326	613	63,146	6,733	6.26	7.71

University of Wisconsin - Milwaukee **Cost and Revenue Projections For Newly Proposed Program**

	Items			Projections		
		2026	2027	2028	2029	2030
		Year 1	Year 2	Year 3	Year 4	Year 5
I	Enrollment (New Student) Headcount	20	25	35	35	35
	Enrollment (Continuing Student) Headcount		18	33	48	55
	Enrollment (New Student) FTE	18	22	32	32	32
	Enrollment (Continuing Student) FTE		16	30	43	50
П	Total New Credit Hours	270	330	480	480	480
	Existing Credit Hours		240	450	645	825
Ш	FTE of New Faculty/Instructional Staff	0	0	0	0	0
	FTE of Current Fac/IAS	0.25	0.25	0.5	0.5	1
	FTE of New Admin Staff	0				
	FTE Current Admin Staff	0.25	0.25	0.5	0.5	1
IV	Revenues					
	Tuition	\$180,360	\$380,760	\$621,240	\$751,500	\$821,640
	Additional Tuition	\$25,200	\$53,200	\$86,800	\$105,000	\$114,800
	Fees (indicate type)					
	Fees (indicate type)					
	Program Revenue (Grants)					
	Program Revenue - Other					
	GPR (re)allocation					
	Total Revenue	\$205,560	\$433,960	\$708,040	\$856,500	\$936,440
٧	Expenses					
	Salaries plus Fringes					
	Faculty Salary					
	Instuctional Academic Staff	\$20,000	\$20,000	\$40,000	\$40,000	\$80,000
	Administrative and Student Support Staff	\$15,000	\$15,000	\$30,000	\$30,000	\$60,000
	Other Staff					
	Fringe Faculty and Academic Staff					
	Fringe University Staff					
	Fringe Other Staff					
	Facilities and Capital Equipment					
	University buildings and space					
	Capital Equipment					
	Operations					
	Other Expenses					
	Marketing	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
	Total Expenses	\$50,000	\$50,000	\$85,000	\$85,000	\$155,000
	Net Revenue	\$155,560	\$383,960	\$623,040	\$771,500	\$781,440
Pro	ovost's Signature:		Date:			

Pro	vost's Signature:	ľ

Chief Business Officer's Signature: Date: