

# The University Senate of Michigan Technological University

Proposal 28-26

## Establishment of a New Graduate Certificate in Product Management

### Basic Program Information

**Primary Contact:** Jenny Apriesnig, Associate Professor of Economics, Junhong “Jun” Min, Associate Professor of Marketing, Ulrich Schmelzle, Associate Professor of Supply Chain and Operations Management, College of Business

**Program Degree type:** Graduate Certificate

**Program Title:** Graduate Certificate in Product Management

**Planned Implementation Date:** Fall 2027

**Program Location/Modality:** Asynchronous Online

### Target student population:

- New students (employed full-time), business and/or technical professionals with 2-5 years of corporate work experience who intend to grow into a leadership role in product management (bachelor's degree required)
- Additional target populations within the Michigan Tech student body could include students enrolled in:
  - The TechMBA and the Master of Engineering Management programs in College of Business (both programs have 6 elective credits available so the proposed graduate certificate would require an additional class beyond the master's).
  - Online Master of Engineering, MS Applied Computer Science (certificate may count towards electives)
  - Data Science MS (certificate courses could potentially count towards domain electives)

## General description and characteristics of program

*General Description:* The Graduate Certificate in Product Management is a 9-credit credential designed to support graduate students in developing critical knowledge, experience, and competencies in leading customer-centric new product development, corporate entrepreneurship, and supply chain integration and innovation. This product management certificate allows students to elevate their careers and exploit growth opportunities in managing software/IT and high-technology products and innovations. Specifically, the program is a career advancement opportunity, expanding their professional boundaries by adding a new direction/dimension to their skill set. We call it “mini-CEO.”

*Catalog Description:* The Graduate Certificate in Product Management program prepares students to become future leaders in managing product development and innovation in dynamic technological environments. Students develop interdisciplinary and integrative competencies and a holistic perspective of end-to-end innovation processes, bridging technical expertise and an entrepreneurial mindset. They learn and apply the development of strategic roadmaps from the ideation to the commercialization and customer service phases.

## Rationale

Product management is a sophisticated skill in technology-driven economies. The product manager serves as a “mini-CEO” who manages the functional team, engineers, and salespeople internally, as well as governs external relationships with suppliers, 3rd party agencies, distributors, and retailers to accomplish business objectives by planning and implementing product management in alignment with customer and business needs. With the high demand for product managers, business education prepares students for lucrative careers with significant growth opportunities. This certificate fosters innovation and entrepreneurship by emphasizing customer-centric design, orchestrating corporate unit iterations, data-driven decision-making, and governing supply chain innovation. It also enhances problem-solving and strategic thinking, as product managers must balance competing priorities and make decisions with limited information—valuable abilities for tackling strategic challenges in any role.

On April 5<sup>th</sup>, 2025, a leading job searching website (LinkedIn) revealed that there are 6.1 million people who work in product management (globally), with two million in the U.S. alone. Furthermore, there were a total of 1,630 job openings in Product Management available on that day. Based on Glassdoor data from 2022, the number of job openings for product managers was 17,725. The average annual salary for a product manager in the U.S. in 2022 was \$125,317. The percentage of product managers employed by Fortune 500 companies in 2022 increased by 26%.

Since 2024, the Graduate Programs Committee has contacted COB stakeholders and obtained their strong support and encouragement in developing this certificate program. In addition, COB Dean’s Advisory Board members highly recommend offering a Product Management program to our students. Specifically,

the Vice President of Global Campus and Corporate Partnership and the Director of Global Campus and Continuing Education, highlighted Product Management as one of the top five areas in high demand.

## **Related programs: within MTU and at other institutions**

### **(1) Programs within MTU**

The MBA and Master's in Engineering Management (MEM) programs offered at the College of Business are partially related to the proposed graduate certificate program but have their own distinct focus. Both of these master's degrees allow for 6 credits of electives. If those electives are used for courses in the Product Management Certificate, the certificate would require one additional course beyond the master's to complete the credential. Discussions with alumni, the Dean's Advisory Council, and Global Campus representatives suggest that there is confidence in the demand for the Product Management Certificate, and that professionals who complete the MBA or MEM programs would be interested in working towards the additional credential even if it takes 3 additional credits.

### **(2) Nationally recognized MBA Programs with a secondary focus in Product Management**

Several U.S. universities offer MBA programs with a secondary focus or specialization in Product Management, allowing students to gain both foundational business knowledge and specialized skills in managing products. These programs typically include courses in product development, innovation, and strategy, alongside general business management coursework. Sample MBA programs with a focus or electives in Product Management are listed below.

#### 2A) [Stanford University \(Graduate School of Business\)](#)

- [Program](#): MBA with Electives in Product Management and Technology
- With a strong emphasis on entrepreneurship and technology, the program offers several electives related to product management, including courses on product design, tech innovation, and strategy, leveraging the university's close ties with Silicon Valley.

#### 2B) [University of California, Berkeley \(Haas School of Business\)](#)

- [Program](#): MBA with a Focus on Product Management and Innovation
- UC Berkeley Haas offers a Product Management program with innovation-focused electives and opportunities to collaborate with companies in Silicon Valley.

#### 2C) [University of Michigan \(Ross School of Business\)](#)

- [Program](#): MBA with a Concentration in Business Technology and Product Management
- The Ross MBA offers a pathway to specializing in technology management and product development through electives in areas like product strategy, design thinking, and technology commercialization.

#### 2D) [University of California, Los Angeles \(Anderson School of Management\)](#)

- [Program](#): MBA with a specialization in Technology Management
- UCLA Anderson offers courses in product management, focusing on the tech industry. The program includes electives in product design, innovation management, and marketing strategy.

2E) [Columbia University \(Columbia Business School\)](#)

- [Program](#): MBA with a specialization in Technology and Product Management
- Columbia offers MBA students a focus in technology and product management with courses such as Product Development, Business Analytics, and Strategy. It also offers a strong program in entrepreneurial ecosystems.

## Projected Enrollment

The following table shows the projected enrollment for the graduate certificate.

Academic Year	Projected Enrollment
	<i>Asynchronous Online</i>
<i>2027-2028</i>	<i>7-15</i>
<i>2028-2029</i>	<i>15-25</i>
<i>2029-2030</i>	<i>30-50</i>

It is expected that around 70 percent of this enrollment will be drawn from the main target population of the Global Campus initiative. The remaining 30 percent of the enrollment is expected to be derived from students in the Tech MBA and MEM programs and other MTU graduate programs seeking the additional credential and taking the courses to fulfill electives in their primary program.

### Specialized Accreditation Requirements

Not applicable.

### Professional Licensure Requirements

Not applicable.

## Curriculum Details

The following table shows a mapping of the proposed program’s graduate learning objectives (GLOs) to the COBs educational value statements and the program goals in the related master’s programs in the COB.

### Learning Goals

COB Educational Value Statements	COB Graduate Learning Objectives of the proposed Product Management Certificate	COB Accreditation (AACSB) <sup>1</sup> Alignment
<b>Innovation:</b> We drive innovation through experiential learning and influential scholarship.	GLO 1: Identify the customer value, strategic advantage, and market potential of a new product.	MBA: Goal2, Managerial Competency (2a-Unique, 2b-Technology)  MEM: Goal4, Engineering & Innovation Management Competency.
<b>Analytical Thinking:</b> We embrace the power of automation and data analytics to make more informed business and policy decisions.	GLO 2: Identify optimal upstream and downstream product management	MBA: Goal1, Decision Making (1a-Identify and 1b-Evaluate)  MEM: Goal1, Decision Making (1a-Identify and 1b-Evaluate)
<b>Integrative Mindset:</b> We provide state-of-the-art course offerings to produce tech-savvy business graduates and business-savvy STEM graduates.	GLO 3: Demonstrate effective collaboration, communication, and leadership skills across the product management process.	MBA: Goal2, Managerial Competency (2c-Leadership)  MBA: Goal3, Professional Communication (3a-Written, 3b-Oral)  MEM: Goal3, Professional Communication (3a-Written, 3b-Oral)

<sup>1</sup>Association to Advance Collegiate Schools of Business (AACSB)

## Assessment Plan

All three required courses will contribute to the learning goals of the certificate. For a streamlined assessment process mastery of the learning objectives will be assessed in BA5910 and BA5920

The assessment of learning goal outcomes will be done using a course project with industry experts

Learning Objectives	Assessment Location	Assessment Type
GLO 1: Identify the customer value, strategic advantage, and market potential of a new product.	BA5910	Course project with industry experts
GLO 2: Identify optimal upstream and downstream product management.	BA5920	Course project with industry experts
GLO 3: Demonstrate effective collaboration, communication, and leadership skills across the product management process.	BA5910, BA5920	Course project with industry experts

## Curriculum Design

The proposed certificate includes three courses; two new courses and one existing course. New course proposals have been developed and have been approved by the College of Business faculty, these will be included in the next binder.

*Total credits required: 9 credits*

*Required Courses (9 credits):* Students can start the product management certificate by taking any of three courses, including the BA5910 (Product Innovation Management), BA5920 (Product Management: Supply Chain Strategy), and MGT 4200 (Entrepreneurial Management). These courses require students to view product management from a holistic perspective.

*BA 5910 Product Innovation Management* (New, 3 credits): offered on demand. Remote asynchronous capabilities are utilized in this course, along with existing campus technology.

Pre-requisites: None

*BA 5920 Product Management: Supply Chain Strategy* (New, 3 credits): offered on demand. Remote asynchronous capabilities are utilized in this course, along with existing campus technology.

Pre-requisites: None

*MGT 4200 Entrepreneurial Management (Existing, 3 credits):* Existing course to add back to the schedule. Offered on demand. Remote asynchronous capabilities are utilized in this course, along with existing campus technology.

Pre-requisites: Proposal currently underway to remove current pre-reqs.

### New Course Descriptions

New course proposals for BA 5910 and BA 5920 have been approved by the COB faculty and will be in the next binder.

Course Title	Credits	Description
BA5910 (Product Innovation Management)	3	This course develops skills in customer-centric product innovation and strategic product management. Students learn how to identify customer needs, validate new concepts, evaluate markets, and design innovation roadmaps. Practical skills include market research, strategic business assessment, omnichannel business, and data analytics.
BA5920 (Product Management: Supply Chain)	3	Students learn to manage the interface between product management, supply chain operations, and innovation ecosystems. The course focuses on integrating supply chain partners into the product management innovation process. Students develop a holistic perspective of end-to-end product management processes across organizational boundaries.

### Model Schedule

Semester	Course	Credits	Pre-reqs	co-req
1 - Fall	MGT 4200 (Entrepreneurial Management)	3	None (curriculum change proposal submitted to remove currently listed pre-reqs).	N/A
2 - Spring	BA5910 (Product Innovation Management)	3	None	N/A

2 - Spring	BA5920 (Product Management: Supply Chain Strategy)	3	None	N/A
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### Faculty Qualifications

Name	Role	Role Detail
<a href="#">Elham Asgari</a>	Instructor	MGT 4200, BA 5910
<a href="#">Patrick Woock</a>	Instructor	MGT 4200, BA 5910
<a href="#">Ulrich Schmelzle</a>	Instructor	BA 5920
<a href="#">Seulchan Lee</a>	Instructor	BA 5920
<a href="#">Jonathan Leinonen</a>	Instructor	BA 5910

All of the above faculty have full graduate status or are eligible to apply for associate graduate faculty status (Leinonen) (Senate Policy 711.1 and procedure 711.1.1). In addition to the faculty listed above, the College of Business will call on its network of alumni with graduate degrees and extensive industry experience to offer these courses as needed. Requests for associate graduate faculty status will be requested in those cases. All of the above listed faculty will have met the Standards for Online Courses before this program is offered, and any hired instructors will meet Senate Policy 116.1 and procedure 116.1.1.

### Resources Needed to Support New Program

No additional resources are needed to start this program.

### Library and other learning resources needed

No additional library or other learning resources are needed to start this program.

### Suitability of existing space, facilities, and equipment

The current spaces and facilities are sufficient.

### Program Costs

Marketing and recruiting assistance from the MTU Global Campus is requested but can happen concurrently with recruiting for the Tech MBA and MEM programs.