

# MSPM 2022 Curriculum and Course Descriptions

## Spring

### **46-751 Accelerate Leadership Assessment-0 Units**

MSPM students are required to participate in leadership training through the Tepper School Accelerate program. The Accelerate Leadership Center offers one-to-one coaching, a series of leadership workshops and Leadership Development Certification for students to create action plans that advance their personal and professional leadership goals. The Accelerate Leadership Center offers a premier leadership development experience and enhances high-performance analytical skills with essential leadership and communication behaviors.

### **46-870 Business Fundamentals for High Tech PM (Tepper)-12 units**

This course will provide a basic introduction on general business management. Topics include organizational structure, the role of different business domains in an organization (accounting, finance, operations, marketing, strategy) and how they relate.

### **05-670 Digital Service Innovation (HCII)-12 units**

Attention entrepreneurs, designers, and engineers! This course teaches you to invent mobile information services. You will learn about value-creation in the service sector and a human-centered design process including improv brainstorming, story-boarding, interviewing, video sketches, and selling. Students work in small, interdisciplinary teams to discover unmet needs of users. They create multiple concepts of a mobile service and assess their technical feasibility, financial viability, and desirability. Then they choose a single service idea and produce a plan with a business model and a video sketch suitable for posting on a crowd funding site. Grades will be determined primarily by the quality of the team's products.

**OR**

### **05-652 Service Design for Product Management-12 units** *Skip Shelly & Peter Weeks*

In this course, students will collectively define and study services and product service systems, and learn the basics of designing them. They will do this through lectures, studio projects, and verbal and written exposition. Classwork will be done individually and in teams.

**OR**

### **05-617 Design of Artificial Intelligence Products-12 units**

This course teaches students how to design new products and services that leverage the capabilities of AI and machine learning to improve the quality of people's lives. Students will learn to follow a matchmaking design, user-centered design, and service design process. They will learn to ideate; reframing problematic situations by envisioning many possible products and services. They will learn to iteratively refine and assess their ideas with real users/customers. Class projects will focus on the challenges of deploying systems that generate errors and the challenges of situating intelligent systems such that they harmonize the best qualities of human and machine intelligence.

#### **46-871 Principles of Product Management (Tepper)-6 units**

This course will introduce the role and responsibilities of the product manager in a software-intensive product or services company. Students will learn about standard processes, tools, and techniques for successful product management, including building and managing a product roadmap, understanding customer needs, prioritizing development and feature requests, evaluating tradeoffs and making decisions.

#### **45-740 Managing People and Teams (Tepper)-6 units**

Teams are increasingly used to innovate and implement in a variety of organizational settings. This course is designed to improve your effectiveness as a manager by introducing you to concepts for managing people and teams in organizations. Students will be exposed to cutting edge research as well as given an opportunity to practice some of the principles introduced through course exercises, case discussions, and assignments.

#### **46-873 Business Communications (Tepper)-6 units**

This course will be aimed at helping students know how to target and deliver messages to business audiences. Students will learn delivery skills and will simultaneously learn how to construct arguments and problem-solve for decision makers and how to understand what these audiences need from them (including superior, peer, and subordinate audience groups). Students will be evaluated on presentation assignments that are relevant to product management.

#### **45-872 Product Marketing (Tepper)-6 units**

This course will focus on the strategies of technology-based products. We will examine how technology products differ from non-technology-based products and how the unique attributes of high-technology products influence the marketing strategies and tactics of those products. We will cover issues such as the diffusion of high technology products and "crossing the chasm"; pricing of technology products including versioning and bundling; compatibility; standardization within product markets; competition in technology-focused product arenas; continuous versus discontinuous product changes and the product line. Examples of technology-intensive industries are computer hardware and software, media and entertainment, telecommunications and e-commerce. Students explore the unique economic circumstances facing firms in these industries and identify strategies that enable firms to succeed given these circumstances. This course is ideal for students who want to pursue a career as a product/product line manager for a technology company. This course helps students understand the unique economic characteristics seen in today's technology-intensive markets and how they impact the strategic interactions among firms and consumers. Students study, for example: Why firms in technology markets give away their best products for free. Why Apple taxes consumers for hardware but subsidizes music, movies, etc. while Amazon subsidizes their hardware but tax software (music, books, movies, etc.). Why Sony won the Blu-Ray format war against HD-DVD which was sponsored by a whole array of companies. In order for students to understand how firms strategically interact in technology-intensive industries this course will use a combination of simple but rigorous analytical models, emerging theories, and formal case studies.

### **05-898 B4 Data Science for Product Managers (HCII)-6 units**

Product managers engage in a variety of complex activities critical to product success. These include product requirements gathering, forecasting customer demand, customer segmentation, and analyzing and responding to customer feedback. Historically decisions in these areas have often relied on intuition and guesswork, leading to misjudgment of the market and other key factors, and ultimately, product failures. Developments in data science, combining the increasing availability of data from internal and external sources with new algorithms that exploit that data at scale, offer new possibilities for putting product management decisions on a more quantitative and rigorous footing. Students in this course will be introduced to a variety of data science techniques applicable to activities to which product managers typically contribute. These techniques include preference modeling, time series forecasting, regression, clustering, classification, A/B testing, and analytics for unstructured data including. Along the way, students will learn about practical aspects of applying data science to product management, including such as choosing appropriate metrics for product success. This course is primarily aimed at students with technical backgrounds who wish to apply their skills to product management. Backgrounds in basic statistics, and some programming experience are required, as the course will include hands-on exercises in Python to illustrate the concepts

### **05-898 A4 HCI for Product Managers (HCII)-6 units**

This course provides an overview and introduction to the field of human-computer interaction, with a focus on how it applies to managers, technology executives, and others who will work with HCI professionals. Particular emphasis will be placed on what HCI methods and HCI-trained specialists can bring to design and development teams. The course will provide a hands-on introduction to proven tools and techniques for creating and improving user interfaces, such as Contextual Inquiry, Rapid Prototyping, Heuristic Analysis, and Think-Aloud Usability Testing. Students at the end of the course will have learned how to perform some useful techniques and will have an understanding of systematic procedures for creating usable and useful designs and systems. This course is required for students in the MSPM program and reservations will be set aside for these students.

### **Summer**

#### **46-750 Internship-3 units**

This is a seminar for the students of the MSPM program that works in concert with their required internship.

### **Fall**

#### **46-752 Capstone Project (HCII)-12 units**

The Capstone project is structured to cover many of the ongoing challenges that product managers, and the companies that employ them, face at any stage of a product's lifecycle in partnership with an industry sponsor. Our MSPM graduate students work in teams (minimum 2 students). Paired with faculty mentors and their industry partners, teams produce product requirements, provide customer discovery, discover product/market fit, complete competitive research, create product marketing communications analysis, construct forecasts, generate pricing research and analysis, and other product management activities for an industry partner's existing or new products This 15-week course runs from August to December and gives each student two educational opportunities: 1. Put into practice the theory and learning from foundational courses 2. Obtain relevant and hands-on experience working on an industry-facing project.

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**46-874 Principles of Product Management II (Tepper)-6 units**

This course builds on Product Management I and expands upon the role and responsibilities of the product manager in a software-centered product company. The purpose of this course is to equip students with the various methods, practices and tools they will need to be achieve product success across the product management life cycle (PMLC). We will introduce the Five Product Movements Model (5PMM) as the basis for the PMLC. We will survey the discipline of product management across the PMLC movements of strategy, planning, development, marketing and operations. Course participants will form teams and apply their learnings to a practical product case throughout the semester, with an emphasis on the strategy and planning movements. We will also examine how the role and responsibilities of the product manager must change to be successful as their category matures over the technology adoption life cycle (TALC).

**1 Technical Depth elective taken in the School of Computer Science-12 units****1 Tepper Elective-6 units**