Technology Management Program

TMP 541: Managerial Economics
The techniques and approaches of microeconomic reasoning are applied to issues of managerial decision making in the corporation. The theory of the market and the price system are closely examined for the purpose of identifying those areas where neoclassical economics is helpful to the analyst and manager. Special attention is paid to cost-benefit analysis and models of economic behavior. Summer
1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 542: International Business, Technology and the Economy
International trade and investment in technology-intensive fields is examined from the perspective of international theory. Theories of foreign direct investment and international competitive advantage will be examined in the context of the changing global economy. Summer
1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 543: Leadership, Team Effectiveness and Communication
This course focuses on business leadership, teamwork and communications. It seeks to answer the following three questions: What do leaders really do? What makes teams effective? How do you create persuasive communications? The course addresses such topics as power and influence, leading organizational change, managing corporate crises, building motivated teams, and developing strategic communications. It examines these topics with a goal of not only imparting knowledge about these managerial practices but also assisting students to acquire the skills necessary to become business leaders, team builders and articulate communicators. We will seek to bridge theory and managerial practice by using case studies and inviting business executives to the class. The readings for the course come largely from Harvard Business Review articles and case studies on these topics. Spring, 1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 544: Organizational Behavior
An approach to understanding the behavior of individuals in organizations is developed with emphasis on implications for effective management. This approach is used to analyze decision problems encountered in managing human resources. Topics include individual and group decision-making skills, recruitment and selection, employee ability, motivation and incentive systems, job satisfaction, performance assessment and management, retention, training, and employee development. Summer, 1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 545: Basic Financial Accounting
Introduction to financial accounting which includes the accounting cycle, analysis and preparation of financial statements, cash flow analysis, corporate accounting, investment in stocks, and international transactions. Summer, 1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 546: Managerial Accounting for High Technology Organizations
Development and presentation of accounting information for managerial decision making in a global technological environment. Topics include budgeting, forecasting, profit analysis and planning, performance evaluation, transfer pricing, capital budgeting, performance measurement, and cost control. Special emphasis will be given to accounting issues pertinent to high technology companies, such as valuation of intangible assets. Summer
1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 547: Business Strategy
A capstone course that enlists a student's general business knowledge in developing corporate strategy. Essential to performing this task is the introduction of guidelines and concepts of Strategic Thinking, Strategic Planning and Implementation. As often stated, "Behind every successful company is a superior strategy." Whether this strategy is due to luck, position, incumbency, "vision," instinct or a host of other internal and external conditions will be discussed throughout the course. Utilizing a simulation to create an industry of successful corporations will provide an insight into the dynamics of competitive analysis, industry analysis, the value chain, the integrative nature of a corporation and the strategic process. Spring, 1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 548: Ethics, Corporate Governance and Control Systems
This course explores the values that govern corporate behavior. Topics include understanding ethical behavior, corporate ethics programs, employees responsibilities, and codes of conducts and governance. Sarbanes-Oxley (SOX) is examined as a watershed legislation that has implications for U.S. companies and non-U.S.-based, multinational companies doing business in the U.S. Examples of similar legislation in the EU and elsewhere are covered. Related topics are corporate social responsibility (CSR) (with cases and examples from U.S. and abroad), ways to promote employee engagement, human resource management risk assessment, and human resource information systems. The course also covers mechanisms for developing a positive organizations culture and engaged workforce. This includes review of employee relations programs, developing and learning a high performing team, and developing a continuous learning organizational culture. Case discussions and exercises (e.g., developing a code of conduct) provide hands-on learning experiences. Spring, 1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 549: Negotiation Strategy
This course is designed to equip students with the basic theories and skills of negotiation. Accordingly, it consists of several parts. The first part is the introduction to the newly developed approaches to negotiation; how you can improve your negotiation skills and outcomes. Also some commonly encountered negotiation tactics will be introduced, not to make you victims of those tactics. The second is simulation; students will engage in several negotiation simulations with other students under specific negotiation mandates and the outcomes will be reviewed. The last is a brief introduction to the game theory with an emphasis on the cooperative games; this part deals with the theoretical foundations of bargaining and dispute resolution. Knowledge from economics and mathematics will be helpful but not required. Offered in Spring, 1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 551: Data Analysis for Technology Managers
The use and limitations of mathematical and statistical techniques, especially for the use of data in choosing between alternative strategies for companies. Probability, estimation, hypothesis testing, analysis of variance, and regression analysis are among the topics covered. Summer
1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 552: Management Science for Technology Managers 1
An introduction to the use of modeling in management, particularly in high technology contexts. Basic concepts of management science are covered, and various models are examined for application in quantitative decision making. Topics include optimization,
TMP 553: Management Science for Technology Managers 2
An introduction to mathematical models useful in the analysis of management problems. We motivate each topic by managerial applications, and we analyze problems using modern software. Topics include nonlinear optimization, regression analysis, and simulation.
1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 554: Data Mining for Technology Management 1
The recent advances in the Internet and information technologies have resulted in an explosion of demand for "big data" analytics. The importance of data mining has already been recognized widely in the industry including many business areas, such as marketing science, financial analysis, and corporation management. In this course, we will be focusing on both key concepts and models in data mining and their implementations based on real-world data in business. The key objectives are two-fold: (1) to help students understand different data-driven predictive models and their applications in business, and (2) to provide students with necessary technical skills for a career in data analytics. At the end of the course, students are expected to understand fundamental skills to apply data mining techniques to their own fields in research and/or practice. The courses will be delivered as two modules. In the first module, we will focus on fundamental concepts of data mining and classification models. In the second module, we will discuss clustering, association analysis, outlier detection approaches, and the data mining applications business and management.
1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 555: Technology, Government and Business
Examines the role of government as a regulator of technological business activity, a customer for technological products and services, a source of funding for technological development, and a facilitator of technological innovation. Special topics include technology assessment, technology transfer, and frameworks for national and regional technology policy.
Summer, 1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 556: Data Mining for Technology Management 2
Following the first module of data mining, this class module will provide students more advanced data mining topics and hands-on experience of data mining projects. The key objectives are two-fold: (1) to help students understand advanced topics in data mining (e.g., clustering, association analysis, and outlier detection) and their business applications, and (2) to provide students with the necessary technical skills for a career in data analytics. Prerequisite: TMP 554: Data Mining for Technology Management 1
1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 573: Basic Marketing Principles and the Information Economy
Introduction to the basic principles of marketing, including: the influence of the marketplace and the marketing environment on marketing decision making; the determination of a firm's product, prices, channels, and communication strategies; and the firm's system for planning and controlling its marketing effort. Special emphasis will be given to marketing in information industries and knowledge intensive industries. Prerequisites: TMP 552
Summer, 1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 574: Marketing of Technology Based Products
Adaptation and extension of basic marketing concepts for technological products. Topics include: understanding unarticulated user needs, demand forecasting and strategic planning in technology markets, product design and architecture, product platform strategy, managing new product realization programs, and managing the technology adoption lifecycle. Summer
1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 575: Introduction to Management Information Systems
The analysis and design of information systems to aid in managerial decision making and the effective operation of corporations. Pertinent computing, telecommunication and systems technologies will be surveyed. Summer
1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 576: Management Information Systems for Accounting, Budgeting and Human Resources Management
Examination of recent MIS options for specialized functions in an organization, such as accounting, budgeting and human resources. Includes review and assessment of integrated multi-function software suites for organizational management, and comparison of packaged software systems versus web-based subscription software services. Summer
1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 577: Business Project A
First part of course-pair TMP577 & TMP578. Students choose a project that focuses on technology management issues in their own industry or organization and apply tools learnt in other courses to analyze the issues. Part A of this pair of courses concentrates on problem formulation and the planning of research and analysis. This course is intended to commence mid-way through the program and be taken concurrently with the next several courses in the program. Prerequisites: TMP 552
Summer, 1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 578: Business Project B
Second part of course-pair TMP577 & TMP578. Students take the issues formulated during Part A of this pair of courses and proceed to implement the research plan also developed in that course. Part B of this pair of courses involves detailed data collection, analysis, and reporting of results. This course is intended to commence three-quarters of the way through the program and to be taken concurrently with the next several courses. Submission of the project report and a formal presentation of results are required near the end of the program. Summer
1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 585: Operations Management for Technology Organizations
Introduction to the analysis and measurement of processes for creating and delivering goods and services. Covers trade-offs in operations management decisions, product and process planning, layout and location strategy, production scheduling, inventory control, quality management, computer integrated manufacturing, and cost justification, especially in the adoption of new technologies. Summer
1.5 credits, Letter graded (A, A-, B+, etc.)

TMP 586: Human Resources Management for High Technology Environments
Survey of issues in personnel recruitment, employee selection and classification, workforce evaluation, wages, benefits, regulations, unionization, training, quality management, and employee performance in high technology settings.
We will start with the analysis of financial statements to better understand measures of a company's financial performance. We will then introduce the concept of time value of money and valuation of cash flows. Then we will introduce the concept of time value of money and its application to the real world.

**TMP 591: Technology Management and Emerging Industries**
First part of course-pair TMP591 & TMP592. Introduction to salient issues facing managers of enterprises involved in the development and implementation of new technologies. Use will be made of case histories and presentations by technological managers and innovators, wherever possible. Part A of this pair of courses will concentrate on the relationship between technological innovation and emerging industries. Summer
1.5 credits, Letter graded (A, A-, B+, etc.)

**TMP 592: Role of Technology Standards**
Second part of course-pair TMP591 & TMP592. Introduction to salient issues facing managers of enterprises involved in the development and implementation of new technologies. Use will be made of case histories and presentations by technological managers and innovators, wherever possible. Part B of this pair of courses will concentrate on the role of technical standards in the dynamics of competition between firms in high technology industries. Summer
1.5 credits, Letter graded (A, A-, B+, etc.)

**TMP 593: Developing Technology Management Solutions (A)**
First part of course-pair TMP593 & TMP595. Special course customized each year to address current trends and solutions to management problems in technological enterprises. Examples would include trends in electronic commerce, new approaches to product development strategy for technology, information security and privacy, or trends in the biotechnology industry. The course will involve field to companies and guest lectures by executives from technology companies wherever possible. Summer
1.5 credits, Letter graded (A, A-, B+, etc.)

**TMP 594: Finance A**
The goal of the Finance course sequence is to introduce students to the modern finance theory and its application to the real world financial decision-making. Finance A is the first part of the sequence that focuses on the first fundamental corporate finance issue: how to make investments that benefit shareholders. We will start with the analysis of financial statements to better understand measures of a company's financial performance. We will then introduce the concept of time value of money and valuation of cash flows. Then we will apply the valuation concepts to learn how to choose investment opportunities that maximize shareholders' wealth.
1.5 credits, Letter graded (A, A-, B+, etc.)

**TMP 595: Developing Technology Management Solutions (B)**
Second part of course-pair TMP593 & TMP595. Special course customized each year to address current trends and solutions to management problems in technological enterprises. Examples would include trends in electronic commerce, new approaches to product development strategy for technology, information security and privacy, or trends in the biotechnology industry. The course will involve field to companies and guest lectures by executives from technology companies wherever possible. Summer
1.5 credits, Letter graded (A, A-, B+, etc.)

**TMP 596: Finance B**
The goal of the Finance course sequence is to introduce students to the modern finance theory and its application to the real world financial decision-making. Finance B is the second part of the sequence that focuses on the second fundamental corporate finance issue: how to finance investment opportunities. We will start with bond and stock valuation, recognizing that debt and equity are the main sources of funds for a company. We will then learn how to estimate the cost of debt and equity for a company that wants to finance its investments. Finally, we will combine the cost of debt and equity into a unified framework that estimates a company's overall cost of capital.
1.5 credits, Letter graded (A, A-, B+, etc.)

**TMP 597: Technology Management and Strategy**
Concepts and techniques of strategic management are examined and applied to relevant cases involving technology management. The class synthesizes all elements of the program and examines how an organization can plan and develop initiatives, evaluate their effectiveness, and manage the change process with an emphasis on corporate strategy.
1.5 credits, Letter graded (A, A-, B+, etc.)

**TMP 598: Technology and Entrepreneurship**
Concepts and techniques of strategic management are examined and applied to relevant cases involving technology management. The class synthesizes all elements of the program and examines how an organization can plan and develop initiatives, evaluate their effectiveness, and manage the change process with an emphasis on entrepreneurial strategy.
1.5 credits, Letter graded (A, A-, B+, etc.)