

# Description of Courses

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## ■ Undergraduate Program

### **MSB101 Management of Everything**

This course provides students with contemporary concepts and principles of management. It discusses the management concepts with philosophical backgrounds and real cases. It also encourages students to put these concepts and principles into practice.

### **MSB200 Introduction to Business Management**

This course is established for students to understand the company's effective/efficient management and approaches in a constantly competing environment. With the understanding of company's essence, management activities, and conceptual frame of management, students will examine the latest trends in management, organizational changes, innovation, and entrepreneurship.

### **MSB201 Statistical Analysis for Business**

This course discusses some statistical analysis tools in undergraduate levels of business for a variety of applications in accounting, finance, marketing, production and others areas. Topics include regression analysis, analysis of variance, goodness-of-fit test, time series analysis, sampling methods, some statistical decision theory, and non-parametric methods.

### **MSB204 Technology Management**

This course aims to provide students with an introduction of the key technology and innovation management challenges that students will face as an engineer working in business. As a decision maker in technology related business, it is essential to understand the notion of science and technology, patterns and sources of technological innovation, and mechanism of technological innovation. In addition, there will be an emphasis on concept learning for technological management such as Product development process, R&D project management, Intellectual property management, outsourcing management, and role of CTO.

### **MSB215 Microeconomics**

This course is concerned with the understanding of basic principles in microeconomics. Microeconomics considers how individuals, firms, the government, and other organizations make choices. By the end of semester, students should understand the main logical arguments used by an economist to describe how the world works, and be able to use these tools to analyze business and public policy problems.

### **MSB230 Principles of Accounting**

This course will help students to understand accounting functions, accounting responsibilities, accounting standards, the necessity of external auditing, and reasons why corporations prepare and announce financial statements. Students will summarize and analyze corporations' financial statements. Also, students will be trained to obtain a better understanding of the main accounting processing method and its meanings for use in decision-making.

### **MSB235 Financial Management**

Financial Management is concerned with the maintenance and creation of economic value. Corporations raise funds from financial markets (financing decisions) and invest them to create value (investment decisions). The objective of this class is to study how those financing and investment decisions are made by corporations with an eye toward creating value. The class covers financial analysis and planning, valuation of securities, capital budgeting, risk and return relationship and opportunity cost of capital, alternative corporate financing and capital structure, etc.

### **MSB236 Marketing**

Marketing for engineering students shows how important marketing activities are to science and

engineering students. This course educates students' overall basic concepts and major issues on marketing, and based on the learned concepts and through cases of technology oriented corporation, students will enhance their learning effectiveness by linking real-life marketing and marketing theories.

### **MSB237 Introduction to MIS**

This course is designed to provide a broad overview of the fundamental concepts of information systems for students. The course includes the basic concepts of computer hardware, software, databases, data communication networks, Internet, various information systems and other emerging technologies. It also covers the history of computing and different scientific views towards IT to understand the interrelationships between technologies and society.

### **MSB238 Organizational Behavior**

This course is to provide students with an understanding of the fundamental theories and practices of organization and its people. The main content comprise of two parts. One part is mainly for issues related to individuals and groups in an organization including motivation (recruitment, learning, evaluation, and rewards), job design, job adaptation, and group behavior. Another content covers issues of organizational management such as organizational structure, processes (communication, decision-making), leadership, and organizational development.

### **MSB301 Econometrics**

This course will provide students with an opportunity to learn basic methods of multiple regression analysis. Estimation and testing hypotheses are the primary concerns of this course. Topics covered in this course are multiple regression, structural change, and time series analysis.

### **MSB316 Macroeconomics**

This course is concerned with the construction of macroeconomic theories that can explain and predict variations in aggregative (economy-wide) variables, such as GNP, unemployment, the general price level, interest rates, growth rates, and the exchange rate. The course material and class organization stress the development of the tools and background necessary for your field courses.

### **MSB336 Technology Marketing**

The aim of this course is to provide a solid grounding to students interested in managing various aspects of the technology marketing. The course will move through the following major components with an emphasis of pre planning tech marketing: strategy, organization, process, after service, technology valuation.

### **MSB337 Information Technology Management**

This course discusses the state-of-the-art of information technology(IT) management. It includes system development, user behavior, electronic business, web 2.0, big data and knowledge management for organizational performance. Students are required to develop their deep knowledge on the advance topics of IT management in this course.

### **MSB338 Consumer Behavior**

Basic concepts and research results from marketing and the social science are examined with the goal of enabling marketers to better understand customers and meet their needs. The decision process of buyers, factors affecting purchasing decisions, and customer satisfaction are major conceptual areas of the course. Implications for marketing strategies (e.g., market segmentation, product design, and promotion) are discussed.

### **MSB341 Management Science**

This course provides the Operations Research (OR) based design, analysis, modeling and algorithms for solving key problems arising in engineering and non-engineering (business) areas. The course will cover fundamental items such as Linear Programming, Network Analysis, Dynamic Programming, Game Theory, Integer Programming and Nonlinear Programming. In particular, application of OR techniques to telecommunications network design (including both wireline- and wireless systems) will be presented and illustrated.

**MSB343 Business Strategy**

This class is concerned with a theoretical framework of exploring strategic alternatives which guide a firm toward future success and regulate the decisions of managers and the behaviors of employees. The class discussion will identify the effective ways to analyze external and internal contexts, explore strategic options related to competition, diversification, or globalization, etc., and understand organizational problems of strategy implementation. The understandings of strategic management could also contribute significantly to in-depth discussions of innovation, marketing activity, and organizational behavior in each firm level.

**MSB345 Understanding Creativity for Innovation Management**

This course helps students understand theoretical and conceptual foundations of creativity, apply current knowledge of the psychology of creativity to manage innovation in multiple organizational settings, and enhance students' own level of creativity.

**MSB351 High tech Venturing**

This course introduces the fundamental perspectives of concepts, process, which is the field of technology based entrepreneurship and new business venturing. Entrepreneurs have to engage many process such as recognizing market opportunities, building Business Model, Financing etc to create viable new venture. This introductory course focuses on above process as well as series of topic related tech based entrepreneurship such as venture firm management, case studies, government policies, leading entrepreneurs.

**MSB354 Operations Management**

The basic theory of operations management will be introduced from a knowledge management viewpoint. Fundamental theories and innovative techniques on the management of production and service operations which is the foundation of scientific management are discussed.

**MSB356 Information Society**

This course focuses on the introduction and analysis of information and knowledge society. Internet-based socio-economic paradigm displays various issues, such as digital divide, privacy, intellectual property right and cyber ethics. The main purpose of this course resides in the enhancement of critical analysis of the social, economic and ethical issues in the internet-based socio-economic environment.

**MSB360 R&D Project management**

This course will cover basic concepts, theories, and real world cases of project organization, technique, and methodology for the maximization of investment and the minimization of uncertainty of the full life-cycle of R&D project, planning, selection, control, and evaluation, through lectures and group term project.

**MSB370 Analysis of technology valuation**

This course will address the philosophies and practices of technology value based firm R&D activities. Students will learn the basic concept and analysis methods about budget and benefit of firm R&D investment for developing technology

**MSB401 Management of Technology Innovation**

The course is catered for managers and senior engineers who may be involved in new business development and R&D management for high-technology companies. The concepts and analytical frameworks are useful and relevant when you are in a business of managing technical-based resources and knowledge assets in a rapidly changing environment. Although some readings we use in this course present a certain level of technical details, the focus is on strategic management issues rather than the specific details of any particular technology. Nonetheless, students in the past have enjoyed learning the selection of technologies in terms of diversity and stages of evolution.

**MSB402 International Economics**

The Theory and Policy of International Economics is a natural extension of the principles of economics in a globalized environment. The class is basically a combination of the study of theory and real world application. Occasionally, the group and individual presentation and debate will be introduced.

**MSB403 Innovation Case Strategy**

This course is to learn dynamics and paradigms of innovation using multiple case studies. This course aims to make the students get familiar with key concepts such as the evolution path, the diffusion pattern, the value capture, and the implementation of the innovation, so that they become more effective in creating and nurturing innovation that is a crucial value creating engine in modern society.

**MSB407 Future Technology and Industry**

This course is to designed to reinforce and develop student abilities to apply technology and business(industry). In doing so we will focus on innovation of science and technology and its future industrial evolution. On each topic the class will focus on winning R&D excellence of KAIST research areas together with industrial perspective such as nuclear, electrical vehicle, biotechnology so forth.

**MSB408 Economics of Technology**

This course focuses on the effects of technology development on social welfare, social system, industrial structure, firm behavior in terms of economics perspective. This course deals with topics such as technology and economic development, technology and firm innovation, technology diffusion, technology innovation and policy.

**MSB411 Investments**

The main objective of the course is to provide an overview of theories in investment such as portfolio theory and the valuation models. The valuation models include the Capital Asset Pricing Model and Arbitrage Model. Also, financial markets, financial instruments, and mutual funds and other investment companies are introduced. In addition, the financial derivatives such as options and futures securities and the related theory and markets are covered.

**MSB413 Industrial Organization**

This course studies the application of microeconomic theory in market and industries. It analyzes market and industries in the paradigm of market structure-conduct-performance. It introduces various concepts of market structure and conduct: natural) monopoly, contestable market, entry barrier, economies of scale and scope, firm integration, price discrimination, tied sale, resale price maintenance market foreclosure, and other restraints on transactions. And it studies regulatory issues associated with the efficient and optimal market performances of industries.

**MSB415 Game Theory**

The aims of this course is to equip the students with the basic tools of game theory. This unit develops the basic models of strategic behavior in modern microeconomics. It builds a framework for the analysis in markets where the traditional price theory fails. Central in development are choice under uncertainty, choice in strategic situations and choice under asymmetric information. The theories are applied to the analysis of oligopolistic markets, markets for insurance, the theory of actions and other applications.

**MSB416 Future High-Tech Product Development**

Korea's industry is at the crossroad of high-tech based manufacturing capabilities due to emergence of Internet paradigm. This course looks at the issues associated with Korea's future high tech development strategy to adopt into rapidly changing environment IT paradigm. The focus of learning in this course is to provide students with an appreciation 1) understanding asia's high tech development characteristics, 2) Korea's past development of high tech development strategy and its characteristics, 3) Development methods of future high tech product development, 4) Understand future technology, society.

**MSB421 High-Tech Human Resources Management**

This course will address the philosophies and practices of human resources management in High-tech. Students will learn the basic functions of HRM including recruitment, selection, performance evaluation, development, compensation and others.

**MSB431 Managerial Accounting**

This course is designed to understand cost flows, costing procedures, and accounting systems providing cost and management performance data. In addition to the understanding, students are also able to enhance the management process knowledge by integrating various cost and performance data to management decision makings.

**MSB436 Marketing Research**

Marketing research serves as a central basis for marketing strategy and firm profitability. Therefore it is critical for a manager to understand marketing research and to be able to specify what needs to be studied, how to study it, and how to interpret the results. This course presents an overview of marketing research in terms of needs, definition, process, analysis and report.

**MSB440 Legal Aspects and Cases of Entrepreneurship**

This course is taught by a legalist who is in charge of science and technology venture enterprise with case studies. This course introduces legal conflict cases about laws related to science and technology and venture enterprise and administration.

**MSB441 Patent Law and Management**

Intellectual properties including patent right are studied through this class to be proceeds from research activities of individuals and entrepreneurs. Studies are focused on procedure of obtaining the patent right from research activities to issue of letters patent and management on how to benefit from IP rights after granted or registered.

**MSB443 Negotiation and Contention Management**

Negotiation and contention management is a hands-on, skill-oriented class which addresses two topics of central importance to anyone who seeks to succeed or to survive, in an organizational environment. The concepts presented in the course are introduced to prepare for or reflect on the succession of exercises or simulations.

**MSB446 Supply Chain Management**

The basic theory of supply chain management will be introduced from a knowledge management viewpoint. Main topics of the lecture will be focused on the management of supply chain which is the infrastructure of off-line manufacturing and the introduction of various cases in order to analyze the strategic cooperation of on-off line industry.

**MSB450 Entrepreneurship & Venture Business**

Entrepreneurship and venture business has an important role in training entrepreneurship to science and engineering students and in emphasizing the importance of venture business and enterprise. This course, after training students with basic concepts and entrepreneurship, will enhance the understanding of real-lief venture businesses and enterprises through case studies.

**MSB451 Venture Formation Practice**

Venture is one of the core of the business in 21st Century. This course covers key issues in venture creation including business idea development, business model, growth strategy, business plan, and fundraising strategy, etc. Concurrently, students work in teams throughout the whole semester in simulating venture formation, which ends up with business plan presentation at the end of the semester. Some successful entrepreneurs and venture capitalists will be invited in the class to share their experiences and insights.

**MSB452 Business Model**

Powerful business model will be a prerequisite for the success of business idea in business reality. Effective business modelling is supported by knowledge and insights on market opportunity and

firm competences. This task requires the essential parts of theoretical frameworks of diverse fields of business administration such as the understandings of innovation, market, strategic focus, organizational competences, etc. Special attention could be paid to disruptive business or internet business model. The class will be organized to introduce major types of business models and listen to onsite experience and insightful understanding of business managers.

#### **MSB453 Digital Fabrication for Society**

This course offers hands-on experience to develop products and services for solving a societal problem. Students will be more creative and responsible for their society after taking this course.

#### **MSB454 Information Policy**

This course focuses on the impact of informatization to socio-economic environment and organizational restructuring in business arena and the historical consideration of government informatization policies. In particular, this course introduces the change of informatization policies of advanced countries and the other contender countries in the newly emerging trends of internet paradigm, centered on electronics commerce.

#### **MSB455 Service Engineering**

This course will provide the concept of Service Engineering through lecture and practical exercise. Students will learn : (1) how to design service functions of manufactured product (2) how to develop product-service systems in manufacturing industry and (3) how to analyze service life cycle.

#### **MSB456 Knowledge Business**

This course will provide the concept of Knowledge Business through lecture and practical exercise. Students will learn : (1) how to visualize knowledge (2) how to manage and utilize knowledge in organization and (3) how to design knowledge business cycle with multiple viewpoints and purposes.

#### **MSB458 Web Technologies and Business Strategies**

This course is designed to provide the strategies and development of business applications using SOA and web services for students. Students will understand the fundamental concepts of business processes and SOA and get hands-on experiences by doing a group project. In addition, the course includes not only SOA technologies but also organizational opportunities, challenges, and managerial implications of SOA.

#### **MSB472 China's Economic Development**

This course deals with rapid development of Chinese economy and its impacts on other countries including Korea. Technology, economy, history, culture, socio-political issues will be discussed in order to find a win-win strategy between China and Korea.

#### **MSB481 Special Topics I in Business and Technology Management**

This course studies both current trend in technology of each industry and recent trend in technology management and academic researches on technology management. This course is offered to cover additional business and technology management area which is not covered by regular courses. It will be opened flexibly.

#### **MSB482 Special Topics II in Business and Technology Management**

This course studies the recent trend in technology management through the introduction of current trend in technology and case studies for each industry (or sector) for undergraduate students of Business and Technology Management major. This course is offered to cover additional business and technology management area which is not covered by regular courses. It will be opened flexibly.

#### **MSB483 Special Topics III in Business and Technology Management**

This course studies the recent trend in technology management through the introduction of current trend in technology and case studies for selected specific industry (such as IT or BT sector), and literature research. This course is offered to cover additional business and technology management area which is not covered by regular courses. It will be opened flexibly.

**MSB491 CEO Seminar**

This seminar is open to KAIST students. Invited speakers will be renowned Chief Officers (e.g. CEO, CIO, CTO, CFO, etc.) in domestic and international corporations. Through this lecture, students will acquire leadership in business and economics.

**MSB493 Practicum Project**

With guidance of an faculty advisor, a project team with a group of 4-5 students who have completed core business courses conduct a small consulting project for an organization with a business problems, and write a final report for the organization.

**MSB496 S&T Biz Colloquium**

Technology management major students are required to take double major in science technology. In doing so this course would provides on overview of department's objective, and introduction to the study of science and technology. In particular their technological innovation in its fields, major research challenges, industrial linkages will be studied by inviting KAIST's department chair.

**ENP430 Entrepreneurial Law**

Acquiring fundamental knowledge on corporate law, contract law, labor law and antitrust/ fair trade law, which are essential for operating a company, with the aim to cultivate capability to apply such laws to real world cases, not merely memorizing law provisions.

**▣ Graduate Program****MSB500 Advanced Statistics for Management**

The course emphasizes formulating models and using them for decision-making prediction. Topics include probability theory, sampling, estimation, hypothesis testing, regression analysis, analysis of variance, and some more techniques such as factor analysis, cluster analysis, if time permits. For all the issues, both theoretical and practical aspects through case studies will be emphasized.

**MSB504 Microeconomics**

Microeconomics is a field of economics that studies consumer and firm behaviors scientifically. Consumers and firms make decisions to accomplish their goals under constraints. More specifically, microeconomics studies the ways to make better decisions (choices) when resources such as budget, time, information, clean water, etc. are limited. This course is composed of three parts: consumer theory, firm theory, and externality. Students will study various topics intuitively rather than mathematically.

**MSB510 Innovation Management and Strategy**

Management of innovation is defined as the set of activities associated with bringing high technology products to the marketplace. Innovation management strategy is aims to integrate management of market, industry, technological, organizational change to improve the competitiveness of firms and effective organization. In doing so, this course will examine on the basis of the dynamic firms capability framework- position in the competitive and national environment, Path for developing and exploiting technological trajectories, Process for strategic integration and learning.

**MSB530 Accounting Principles**

The objectives of this course are for graduate students to comprehend "accounting procedures" with which accounting information is gathered, processed and presented; to understand contents in companies' financial statements; and to apply to management functions with accounting numbers.

**MSB535 Technology Management and Corporate Finance**

The objective of this course is to study the basic concepts, theories, and current issues of corporate finance and apply the materials to technology management. Students are required to write

individual research proposals related to technology management and corporate finance including literature reviews, research hypothesis development, data collection, empirical analysis, interpretation of empirical results, and conclusion. In addition, as a group project, students conduct technology valuation using the currently developed technology. Students are required to make presentations of both academic papers and technology valuation project at the end of semester.

### **MSB536 Marketing for High-Tech Companies**

This course is concerned with the development, evaluation, and implementation of marketing management in complex environments for Hi-tech companies. The course deals primarily with an in-depth analysis of a variety of concepts, theories, facts, analytical procedures, techniques, and models. The course addresses strategic issues such as:

- What business should we be in?
- What are our long-term objectives?
- What is our sustainable marketing competitive advantage?
- Should we diversify?
- How should marketing resources be allocated?
- What marketing opportunities and threats do we face?
- What are our marketing organizational strengths and weaknesses?
- What are our marketing strategic alternatives?

### **MSB537 Digital Innovation and IT Management**

This course is designed to provide a clear understanding of the various advanced management, organizational, and ethical issues of digital innovation for graduate students. Effective management of digital innovation and IT resources are becoming even more compelling and significant in light of Internet business. To achieve these objectives, a combination of various approaches including class lectures, case discussions, group projects and assignments will be offered.

### **MSB538 Managing Innovative Organization**

We will focus on the skills and tools managers need to be successful in innovative organizations. The objectives of this course are to understand multiple theoretical and conceptual foundations of managing innovative organizations and apply scientific knowledge to lead and manage real-world innovative organizations.

### **MSB539 AI for Business Management**

This course has two objectives. One is to offer business school students, who have some or no experience in machine learning programming, an opportunity to acquire hands-on machine learning and deep learning programming skills with Python and TensorFlow; the other is to teach recent trends in global AI research and application development, business applications of AIs, and ethical issues in AI development and use. Those who want to take this course are required to take a KOOC course, "Practical Python for AI Coding," before a semester begins.

### **MSB542 Management Science**

Main purpose of this course is to provide fundamentals in management science. The course will cover introductory levels of linear programming, network theory, game theory, decision analysis, queueing theory and inventory analysis.

### **MSB552 Corporate Strategy and Design Process**

This course aims to approach the design process from a broader business perspective. Beyond the traditional role of industrial design and designers, this project attempts to include developing business strategy as a design problem. By investigating and analyzing the market, company structure and business model, students engage in managerial decision-making process to develop business strategies.

### **MSB554 Smart Business Application and Development**

The course is intended for graduate students to understand and develop smart business application running on smart phones. It provides a comprehensive guide covering programming technology on



Mobile Internet, Mobile Security and Payment, Location based and Context Aware Services, Social Network Services, and Business Model Development Method through Case Study, Value Chain Analysis and Economic Feasibility Study. An application is proposed and developed by students as team consisting of business and engineering areas for the purpose of creating new application services and businesses.

#### **MSB556 Future and Technology : New Media Technology and Business Strategies**

The course will essentially provide basis of marriage between social sciences and engineering capabilities of students, hence: 1)Link understanding between future-oriented Business and Technology Strategies in Media and Broadcasting, 3)Emphasize importance of user considerations when identifying and designing disruptive technological solutions for future media society

#### **MSB601 Research Methodology in Business and Technology Management**

This is an introductory graduate level seminar on research methods in business, science, and technology. It deals with a variety of issues on research methods including research design, experiments, quasi-experiments, survey development, qualitative research methods, and others. This is to be explorative and thought-provoking mutual learning experiences by active engagements of all members of the class.

#### **MSB613 Network Economics**

This course aims to understand basic principles of network economics and study applications of the principles to real economies and business issues. We introduce network concept, structure, and principles including network externalities, excess inertia and excess momentum, positive feedback, path dependent process, and so on. We apply those principles to various economic, business, and policy issues; technology adoption, standardization, spatial pattern, network trade, discrepancy and instability, synchronization, self-organizing, complexity, etc.

#### **MSB615 Game Theory with Applications**

You make your decisions sometimes without worrying about the decisions of others, but in many cases the results of your decisions depend on others' decisions. This course is a course in which you learn a systematic and analytic approaches and frameworks for a better strategic decision making in interactive circumstances. In addition, this course fosters students' ability to analyze and handle the complexity involved in strategic decision-making process.

#### **MSB630 Managerial Accounting**

This course aims to understand cost flows, costing systems, and the use of cost information in managerial issues; and to get fundamental research ideas, topics, and methodologies regarding managerial accounting area. This course also provide how to apply cost information to practices, management functions, and managerial decision makings with mini cases.

#### **MSB635 Investments Theory**

The main purpose of this course is to analyze portfolio theory and the pricing model of securities in the financial markets. In addition to the valuation model such as Capital Asset Pricing Model, Arbitrage Pricing Model, bond valuation model, financial derivatives such as options and futures are introduced. Focussing on information and telecommunications industry, issues related to market efficiency, M&A, venture capital, and IPO are also covered in the class.

#### **MSB637 Theory of Consumer Behavior and Decision Making**

This course is designed to familiarize students with the current major theoretical streams of research in consumer behavior and decision making. It is expected that students will develop and refine the ability both to critically evaluate the theoretical contribution of articles in consumer behavior and decision making and to formulate theory-based hypotheses capable of advancing the discipline's understanding of consumer behavior and decision making.

#### **MSB638 Strategic Management Theory of Technology Innovation**

Strategic management research deals with explaining and predicting firm-differential performance. Strategic management research is motivated by a particular set of phenomena expressed in

fundamental questions like “why do some firms succeed, while others fail?”, “what determines firm performance?,” and to a lesser, normative extent, “what, if anything, can managers do about it?” We will study the questions using the lens of firm technological innovation. We will be focused on the implications of behavioral, institutional, and organizational perspectives, particularly as they apply to technology innovation.

#### **MSB644 Supply Chain Innovation**

One of the core process of ‘Industry 4.0’ is implementing smart technology into all the manufacturing and service processes, such as procurement, assembly, production, distribution, and retailing. Theories and cases related technological and managerial issues will be covered.

#### **MSB656 Theory of Information Policy**

This course provides the overview of the governments policies aimed at changing the nation and society by means of informatization. This course is designed to help students understand how the relation between globalization and informatization transform the world and its economic structure. This lecture also aims to help students equip the knowledge and perspective required to be a CEO in the near future. Related studies are political economics, theory of policy, theory of information society, and theory of information industry.

#### **MSB701 Advanced Econometrics**

Topics to be studied include specification, estimation, and inference in the context of models that include then extend beyond the standard linear multiple regression framework. After a review of the linear model, we will develop the asymptotic distribution theory necessary for analysis of generalized linear and nonlinear models. We will then turn to instrumental variables, maximum likelihood, GMM, and two step estimation methods. Inference techniques will be extended to include Wald, Lagrange multiplier and likelihood ratio tests. Modelling frameworks will include the linear regression model and extensions to models for panel data, multiple equation models.

#### **MSB702 Research Methodology II**

This class try to achieve in-depth understanding of the high level research methodologies which should be essential in writing empirical dissertation paper and conducting various researches in the field of business. The class covers empirical design focussing validities, and multivariate data analyses including ANOVA, Factor Analysis, Regression, Discriminant Analysis, Conjoint Analysis, Multidimensional Scaling, Structural Equation. etc.

#### **MSB703 Business Analytics for Innovation Management**

This course provides master level and Ph.D. level students with knowledge to empirically analyze commonly used econometrics and machine learning techniques, and to interpret its outcome. The topics to be discussed are mainly intended for technology marketing, Information Systems, and technology strategy areas. The computer packages to be mainly lectured in class will be STATA and Python. etc.

#### **MSB716 Innovation & Global Financial markets**

The course covers the fundamentals of the macroeconomic environment of international financial management, discusses the financial environment in which the multinational firm and its managers must function, and covers foreign exchange management and financial management in a multinational firm.

#### **MSB736 Advanced Quantitative Analysis**

This course in intended for first year Ph.D. students and M.S students who will eventually pursue a Ph.D degree in quantitative marketing. We will cover topics relating to the analysis of data such as household scanner panel and physician level data (individual) and store data (aggregate). All topics are empirical in nature and very strong background and motivation for quantitative modeling are required. I will also strongly encourage students to conduct interdisciplinary research throughout the course. Once we have covered a topic in class, I will provide readings. There are 2 types of assignments for the class. The first is to implement each of the models discussed using the data I

provide. Ph.D. students can use any software package such as R, SAS, Gauss, Matlab etc. as long as no canned routines are used. The other assignment for this class is a final paper-individual. This is intended only for Ph.D students registered for the class. Papers are due at the end of summer. It has to involve some piece of empirical research that uses the quantitative methods discussed in class

### **MSB813 Telecommunications Economics**

This course is designed to understand basic principles of telecommunications industry and study applications of Microeconomics and Industrial Organization to telecommunications industry: market structure, demand structure, interconnection, pricing, competition and regulation, etc. It is also to discuss current policy issues and future of telecommunications industry such as network neutrality, facility and service-based competition, MVNO, bundling service, market foreclosure, DRM, convergence service, telecommunication expenditure, regulation and market growth, etc.

### **MSB830 Research on Performance Management**

This course is designed for graduate students to understand various issues concerning the enterprise performance management. Students study successful factors for not only implementing performance management systems but also operating them continuously throughout papers and cases.

### **MSB835 Advanced Technology Innovation and Financial Management**

The objective of this course is to study the basic concepts, theories, and current issues of corporate finance and apply the materials to technology management. The topics cover the areas related to corporate finance decisions including capital budgeting, capital structure, dividend policy, IPO, M&A, corporate divestitures, corporate valuation, technology valuation and other related issues. Students are required to write individual research proposals related to technology management and corporate finance including literature reviews, research hypothesis development, data collection, empirical analysis, interpretation of empirical results, and conclusion. In addition, as a group project, students conduct technology valuation using the currently developed technology. Students are required to make presentations of both academic papers and technology valuation project at the end of semester.

### **MSB836 Marketing science seminar**

This course consists of supervised study and investigation of specific topics and problems in the field of marketing such as consumer behavior, business to business marketing, structural equation modeling, hi-tech marketing, and marketing models. In addition, students examine the philosophy, concepts and methods of marketing research design. The focus of seminar is on the application of advanced scientific research methodology to marketing issues.

### **MSB837 Doctoral Seminar in Digital Innovation and IT Management**

This seminar is designed to provide doctoral students with contemporary theories of digital innovation and IT management. Students will understand the phenomena related to the introduction, adoption, use, effects, and exploitation of digital innovation and IT management. Students will present a research proposal based on the provided theories.

### **MSB838 Advanced Seminar on Theories of Innovative Organization**

This course analyzes the structural and behavioral aspects of innovative organizations. Macro issues covers organizational communication, organizational culture, and organizational change for innovation, whereas micro issues include group dynamics, business ethics, power, work motivation, and decision making for innovation. Emphasis will be placed on understanding the conceptual and methodological strengths and weaknesses of the perspectives presented. This course is a student-centered seminar class.

### **MSB881 Advanced Special Topics I in Business and Technology Management**

This course provides studies of recent academic research papers and the research methodology on each industry and business areas of technology management to graduate students of Business and

Technology Management major. This course is offered to cover additional business and technology management area which is not covered by regular courses. It will be opened flexibly.

**MSB882 Advanced Special Topics II in Business and Technology Management**

This course provides studies of recent academic research papers and the research methodology on specific industry and business areas of technology management to graduate students of Business and Technology Management major. This course is offered to cover additional business and technology management area which is not covered by regular courses. It will be opened flexibly.

**MSB883 Advanced Special Topics III in Business and Technology Management**

This course provides selected studies of recent academic research papers and the research methodology on specific industry and business areas of technology management to graduate students of Business and Technology Management major. This course is offered to cover additional business and technology management area which is not covered by regular courses. It will be opened flexibly.

**MSB960 MS Thesis Research**

**MSB965 Individual study in Master's**

**MSB966 Seminar (MS)**

**MSB980 Ph.D Thesis Research**

**MSB985 Individual Study in Ph.D**

**MSB986 Seminar (Ph.D)**