

# Introduction of Management Engineering

## ■ Curriculum and Research Areas

At ME, students are required to select a major field of research and fulfill the course requirements that are outlined by each of the research area, after completing the general courses.

### A. Economics

The Managerial economics program is committed to providing implications to business based on theoretical studies. The program covers not only general economics but also strategies and competitions in various forms of industries or markets. More specifically, Business economics focus on market design, corporate social responsibility, environment and energy, and government policy as well as research which focus on specific industries such as the telecom industries and the financial market.

### B. Finance

The Finance program involves socio-scientific analysis of the financial market and the functioning of finance. Specifically, it involves the issues of corporate finance, capital markets, insurance markets, price determination, and financial agency management. Finance is mainly based on both the theory and methodology of Economics, which is, in turn, utilized to explain and prescribe various functions and phenomena of corporate management such as strategies, marketing, and technological innovation.

### C. Marketing

In order to achieve the primary goal of creating marketing-value and customer satisfaction, the research area of marketing deals with market environment and strategy, marketing goals, STP(Segmentation, Targeting, Positioning), 4P Mix(Product, Price, Promotion, Place), customer satisfaction, and performance analysis. Most research in the area is based upon social and human sciences including economics, psychology, sociology, geography, and linguistics, usually conducted interdisciplinarily. Empirical analysis is the key methodology that is mainly used but relativistic analyses such as critical method, ethnographic approach are also widely used. Marketing research aims to investigate not only the fundamental theories using scientific approach but also issues that companies in the real world are faced with. As the demand for marketing research is growing gradually, challenging but meaningful opportunities for marketing research is also growing.

#### D. Operations Strategy and Management Science

Management Science is an interdisciplinary research area, where scientific and analytical tools are used to solve managerial problems. By providing both theoretical and empirical analysis, they are especially useful in dealing with important strategic and systematic decision-making under uncertainty, commonly encountered in both private and government sectors. Operations Strategy, in particular, is focused on manufacturing and production systems of firms and their competitive advantages, examining issues from strategic management of value chain, global supply chain, total quality management (TQM), new product development and innovation, and other analytical tools on planning and control of manufacturing and production systems. In addition, for optimal decision making under uncertainty, various risk management tools are provided such as forecasting, time series analysis, new product development, and automated and systematic demand forecasting for a supply chain.

#### E. Technology, Organization and Strategy

The program of Organization & Strategy covers a wide range of areas from strategic management, organizational management and leadership, human resource management to technology management and entrepreneurship. More specifically, strategic management cover competitive strategy, diversification strategy, M&A and globalization and Organizational management and leadership area is focused on studying individual behaviors, team management, leadership and organization design and innovation. Furthermore, Human resource management is committed to studying issues regarding recruitment, evaluation/compensation, training/development, career management and disposition. Lastly, Technology management and entrepreneurship covers strategic management and venture incubation regarding technology innovation and business development. Overall, Organization & Strategy program is committed to providing practical implications on what strategy to pursue, how to build up organizational capability, how to motivate organizational members and how to confront and innovate against radical environment change, using both behavioral and quantitative research methods. In addition, it adopts implications from not only management but also other areas of social science such as economics, sociology, and psychology.

#### F. Accounting

The Accounting program examines the impact of accounting information and accounting systems on corporate value and the overall capital market. Specifically, the program is committed to investigating usefulness of accounting information, internal resource control and decision making, tax accounting, auditing systems, corporate governance, accounting information systems from various perspectives. Furthermore, it provides implications on the decision

makings of managers and policy makers through empirical analysis of accounting and financial data.

#### G. IT Management

The program of IT Management focuses on design, development and application of management information systems. Moreover, it deals with the market, economics, social changes, and values derived from IT as well as theoretical issues. Research in IT management is carried out from three perspectives. The first perspective is a descriptive one that involves IT design, database, and BI (Business Intelligence). The second perspective is based on behavioral science, which deals with IT adoption and utilization. The last approach is from economics, and it mainly handles market design and e-Business.

#### H. Green Finance

Countries and companies must come up with countermeasures to prepare for global environmental problems such as climate change and energy depletion. As carbon emission regulations are becoming stricter, companies must establish growth and marketing strategies in preparation for changes in government regulations and the market. Green finance studies green company strategy, green marketing, carbon emission measurement, green business, investment evaluation, and green IT development plan based on existing management techniques. In order to study green finance in depth, it is necessary to learn green technology, industry, green management theory, green policy, and green management elements by field of business administration. Courses in Green Finance is recommended to select the field of green finance in addition to the existing field of business.