

## Department of Civil and Environmental Engineering

### 1. Educational Goal

The essence of education is to be successful and achieve educational goals. Our school is always committed to Graduate students in order to

- Ø Make them capable of managing IS organizations and IS resources.
- Ø Equip them with capability with business problem and designing system.
- Ø Help them be capable of designing IS strategies of the organizations.
- Ø Prepare them ready to do quality research in IS areas

### 2. Educational Objective

Our objective is to educate graduate students in such a way through which they can solve ever changing and competitive business problems, leveraging IS and technologies.

### 3. List of Full-time Faculty

Name	Position	Degree(University)	Field of Instruction	Area of Research
LEE, Jong seok	Professor	Hanyang University	Accounting Information System	AIS
Kim, Jae Kyung	Professor	Seoul National University	Management policy	Road Engineering
Park, Kwang Yil	Professor	Yonsei University	Management Science	DSS and Database Administration
Namn, Su Hyeon	Professor	Rutgers Uni. U.S.A	Management Information System	Network Application and Management
Song, Hee Sheok	Professor & Head of the Dept	KAIST	Management Information System	Data mining and CRM
Kang, Chin Cheol	Professor	Nebraska University, U.S.A	Management Information System	System analysis and design

### 4. Course Description

#### • MS601 MIS Research Methodology

Research methodologies for social science is to designed to build research ability in the MIS area. This course assumes that students have basic knowledge of statistics, experiment design, and questionnaire design. Students will learn univariate and multivariate statistical techniques such as descriptive

statistics, variance analysis, correlation analysis, regression analysis, discriminant analysis, and canonical correlation analysis. The course also deals with the requirements for the techniques to be appropriately applied in research. It also covers representative articles in the MIS area.

- **MS602 MIS Seminar**

The major objectives of this course include case studies for business information systems to promote their capability on problem solving capability. Students also can examine long-term trends in information technology that will impact organizations in the future.

- **MS603 Decision Support System (DSS),**

This course aims at an introduction to the decision support systems (DSS) and their use in supporting the decision making process in different organizations. The course has been designed in order to include development of support systems, methods of managing knowledge, and intelligent decision system development.

- **MS604 Object-oriented Programming,**

This course is designed to train the skills of object oriented methodology such as UML. Students can learn and practice UML tools and the Java program. Object oriented concepts which include Class, Object, Information Hiding, Encapsulation, Inheritance and Polymorphism are provided during the lecture.

- **MS605 Enterprise Resource Planning,**

ERP is a way to integrate the data and processes of an organization into one single system. Usually ERP systems will have many components including hardware and software, and in order to achieve integration, most ERP systems use a unified database to store data for various functions found throughout the organization. Students can learn how to manage and coordinate all the resources, information, and functions of a business from shared data stores.

- **MS606 Database Server Administration,**

This course is for students who already have knowledge in SQL, PL/SQL. It aims to provide students with advanced techniques to manage database servers.

- **MS607 IT and Management Strategy,**

This is an introductory course to the fundamentals of information technologies and to the strategic opportunities and challenges presented by these technologies. Students will have a chance to see that business opportunities

and challenges are best addressed through a fundamental understanding of management and information technological concepts. This understanding can be applied to their experiences as an employee and manager, regardless of the area of specialization. Topics include basics of management, strategy and decision making, and various types of information systems used in business environments.

- **MS608 System Analysis and design,**

An overview of the processes involved in the analysis, design, and implementation of information systems is covered. This is a hands-on course and is targeted at undergraduate students who have little or no background in the subject. Topics to be covered include software development life cycle, feasibility study, requirements analysis, systems analysis, and systems design. It also includes data modeling and process modeling.

- **MS609 Strategic Information System,**

This course introduces students to the fundamentals of developing information service consulting and project management. The course focuses on ways to apply theoretical and conceptual knowledge to real world problem solving and project development. Students will work in small teams on real projects that will be deployed and maintained by the professor.

- **MS610 Web-based Database development,**

This course is designed to train the skills of advanced Web programming such as JSP. Students can learn and practice Java application and JSP. This course also covers the topics for database access and session management. Students can learn and practice how to develop a Web site and an Internet shopping mall as well.

- **MS611 E-commerce,**

This course deals with the topics such as the history, current status, and future trend of electronic commerce. Students will learn the components of e-commerce and related standards, laws, software and hardware so that they can build up knowledge to implement e-commerce systems. Students will also study cases of successfully implemented e-commerce systems.

- **MS612 Database Marketing,**

For effective e-commerce activities, it is important to understand fundamental marketing activities derived from inter-relational channels and purchasing behavior of consumers. Students will learn the techniques of data collection, analysis, and database marketing cases.

- **MS613 AIS(Accounting Information System)**

The first aim of this course is to provide knowledge of analysis and design of accounting systems which is critical to systemize accounting information processing. The second aim is to enable students to manipulate the full cycle of accounting processes using cases and implement accounting information systems.

- **MS614 Marketing Information System,**

The course helps you students learn the concepts of marketing information systems, how to design and implement marketing information systems for corporate management and decision making, and how information technologies can be applied in marketing areas.

- **MS615 Information Resource Management.**

The course covers theories and techniques related to human and material resources of an IT department. Students will build up the ability to evaluate information systems, to make decisions such as information systems planning and policies, and to integrate IT in other business functions. From the course, students should be able to view IT from the synthetic view point and analyze and manage diverse problems derived from the operations.

- **MS616 Information and Communication,**

This course is to provide essential knowledge for managing telecommunication resources such as layered communication technologies, applications, and hardwares. In specific, it covers protocols for wireless communication as well as wired one not from a technical perspective but from a manager's point of view. Since there are many options for corporate telecommunication technology infrastructure, this course is designed to analyze the available technologies and develop the right combination to satisfy business needs. It also deals with the ways of protecting information resources.

- **MS617 Database,**

This course provides an introduction to relational database systems. The topics covered include the relational model, SQL, transactions, database design, and concepts and algorithms for building database management systems. This course is also designed for students to practice DBMS tools as well as lecture.

- **MS618 IS Development Project,**

Information system project encompasses the knowledge, techniques, and tools necessary to manage the development of information systems. This course discusses material that managers need to create a plan for information system

development, using effective estimation of size and effort, and to execute that plan with attention to productivity and quality. Within this concept topics such as risk management, alternative lifecycle models, development team organization, and management of technical people will also be discussed.

- **MS619 Multivariate Data Analysis,**

Students will learn principles, applications, procedures, and interpretations of the multi-variate statistical analysis tool, which is one of important statistical research methodologies. The course covers such multi-variate techniques as multiple regression, discriminant analysis, canonical correlation analysis, MANOVA, factor analysis, clustering analysis, MDS, and conjoint analysis. Students will learn these techniques by studying related articles.

- **MS620 Data Warehousing and Data Mining,**

The objective of this course is to provide students with knowledge of how to handle large amounts of data, and make decisions under uncertain situations. Students will use SAS Enterprise Miner for the analysis of data for the hands-on experiments.

- **MS621 Ubiquitous Computing,**

We have noticed that ubiquitous computing of any time any place is actively applied to corporate business. From this course students will learn the concepts and analyze a set of cases. They also learn ubiquitous application technologies which recognize user's situations, search for services provided from the remote, and recommend services based on user's preferences, and infrastructural technologies such as wire and wireless LAN, WAN, and broadband transmission systems. The course also covers the ways of applying ubiquitous computing in e-business and business process modelling.

- **MS622 Knowledge Management.**

Knowledge has been considered as one of the corporate resources for sustaining business competitiveness. This course covers the knowledge management cycle which consists of acquisition, storage, diffusion and sharing, and evaluation. It also deals with knowledge acquisition in depth. In specific, students learn how to extract essential knowledge from the data warehouse where the behavior of stakeholders of a company resides. For mining, students use a data mining tool to practice.

- **MS623 IT Modeling**

This course deals with information technology related analysis and modeling techniques. First, it discusses business process analysis and modeling methods.

Business process refers to the process of business process. Process modeling technique is to analyze current process and to derive improved process. Examples of related techniques include Business Process Modeling Notation (BPMN), Unified Modeling Language (UML), and XML Process Definition Language (XPDL). Second, we will discuss database modeling techniques. To do this, we first learn about database concepts and data modeling techniques based on ERD (entity relationship diagram). Next, you will learn how to use the relationship model and how to implement it in the database. In addition, students learn the concept and use of SQL (Structured Query Language), a database management language.

- **MS624 Special Topics on Database**

This course is a course to learn database modeling concepts and specific design methods. Topics include database development environment, entity-relationship modeling, logical data modeling, physical data modeling, and structured query language. Through this course, students learn the latest database design techniques and learn various design techniques that can be applied in practical cases. This course focuses on recent technologies and topics related to databases.

- **MS625 Customer Relationship Management**

In this course, we will analyze various strategies and cases that enable companies to enhance their competitiveness through customer relationship management (CRM) and introduce the methodology for promoting CRM. Based on this methodology, We will carry out the plan establishment project.

- **MS626 Logistic Information System Research**

In this course, we will discuss strategies for establishing production and logistics systems and study innovation cases. Study recent trends in overall supply chain management as well as logistics in the enterprise. We will also study in depth the lean management innovations and techniques that have recently begun with the Toyota production system and are regarded as management innovation.

- **MS627 Intelligent Decision Making System**

Quantitative modeling, which is the basic ability of management decision making, human decision making process and scientific decision making, deterministic model of management science and business application, probabilistic model of management science and business application, new paradigm of management science and development trend And analyzes recent cases of intelligent decision making systems. The purpose of this course is to

provide a basis for scientific decision making and to promote logical thinking for students studying social sciences through quantitative analysis of management phenomena.

- **MS628 Information Technology Consulting**

This course is designed for IT consultants and students who want to be a CIO in the enterprise. It provides an overview of IT industry consulting methods (Information Strategy Planning, Enterprise Resource Planning, Customer Relationship Management, Knowledge Management, Business Process Management, etc.) And techniques and examples.

- **MS629 Special Topics on MIS**

This course is a special course to deal with special topics that can be developed into new subjects as new trends or timely topics in management information systems.

- **MS630 Web Technology and Applications**

Students study various technologies related to the internet and the web and examine the application status. Instead of dealing with related technologies in depth, the course focuses on understanding basic functions and making use of technology opportunities in future management decisions.

- **MS631 Business Innovation Research**

Through this course, students will learn how to design a business that can continuously generate business growth. Key topics include revenue growth, business core definition, business core and M & A growth, disruptive innovation methods, open business model, platform strategy, customer based business design, business feasibility analysis, and various business profitability models.

- **MS632 u-Business Research**

It intensively educates the series of technologies necessary for the ubiquitous era. Students will learn research trends and developments related to mobile communication, starting with infrastructure and middleware technology related to ubiquitous computing. In addition, we focus on ubiquitous sensor networks and RFID cases, and then train situation based technology and security related technologies.

- **MS633 Business Intelligence**

In this course, we will discuss management methods and analysis methods for increasing data. First, it discusses the basic concept and necessity of data warehouse which is related to data management. The purpose of data analysis

method is to make it possible to apply the contents of this course in terms of data analysis and decision making by approaching the basic concepts of data mining and related data mining techniques, do.

- **MS634 IT Industry and Business Model**

This course analyzes the development process of IT industry through the general theory of economics and social sciences to explain convergence of information and communication technologies, acquisitions and mergers between companies, and globalization strategies of the market and predicts future IT industry. It also examines the problems and possibilities of the current IT industry. Students in this course will have the ability to create new business models by connecting the various technical possibilities that IT provides to various derivative media.

- **MS635 Information&Communication Policy**

This course aims to understand the nature and characteristics of the information revolution, which is the epoch of the 21st century characteristics represented by information, globalization, and networking, and to understand the impact of the information and communication revolution on corporate and business management on a global scale. It provides insights and insights into how the future will evolve, and the ability to foresee the future. In addition, in the midst of the ups and downs of the information and communication revolution, new business opportunities are sought out and corporate management mindset To create a preliminary CEO in the digital age.

- **Research for the Master's Degree 1**
- **Research for the Master's Degree 2**
- **Research for the Doctoral Degree 1**
- **Research for the Doctoral Degree 2**
- **Research for the Doctoral Degree 3**

Michael Anson Professor in Civil Engineering Chair Professor of Sustainable Construction Materials Head of Department of Civil and Environmental Engineering. Professor Poon Chi Sun. News & Events. 20Jul. NEWS. CEE Departmental Visit Series "Tak Nga Secondary School (16 Jun). 20 Jul 2021. Civil and Environmental Engineering focuses on urban engineering: environmental health, civil infrastructure security, sustainable resource. With a strategic focus on urban engineering, Northeastern's Department of Civil and Environmental Engineering is at the forefront of interdisciplinary research and education in the evolving fields of environmental health, civil infrastructure security, and sustainable resource engineering. Research Thrusts. COVID-19 Research. While ostensibly an issue of personal and public health, the pandemic's impact on all facets of life necessitates a broadly interdisciplinary approach to combating the disease, mitigating its economic impacts, and building a more resilient world against future threats. Join us for illuminating conversations with leaders of environmental justice. 07/21/2021. CE153 Students Take First Place at National Airport Design Competition. 07/21/2021. Ivey, Apte Findings on Disparities in Air Pollution Exposure Featured in C&EN Magazine. 07/14/2021. Candace Yee Selected as Finalist for Daniel W. Mead Prize for Students. Our CEE Structures Laboratory can help researchers and industry clients solve problems in structural engineering. Give to CEE. Thank you alumni and friends, Berkeley CEE continues to thrive because of you! Donate Now. Department of Civil and Environmental Engineering. College of Engineering. UC Berkeley. Welcome to the Department of Civil and Environmental Engineering. Find out more about us. Top Links. The Department is broadly divided into the following research sections: Environmental and Water Resources. Fluid Mechanics. Geotechnics.