DIVISION OF INDUSTRIAL MANAGEMENT ENGINEERING

Curriculum Table

		Course No.	Course Name	Credit (hour)	Year 1 Ⅰ	Year 1 Ⅱ	Year 2 Ⅰ	Year 2 Ⅱ	Year 3 Ⅰ	Year 3 Ⅱ	Year 4 Ⅰ	Year 4 Ⅱ	
Common General Education		GETE011	THINKING AND WRITING Ⅰ	2(2)	•								
		GETE014	THINKING AND WRITING Ⅱ	2(2)		•							
		IFLS003	ACADEMIC ENGLISH Ⅰ	2(4)	•								
		IFLS004	ACADEMIC ENGLISH Ⅱ	2(4)		•							
		GEKS001	FRESHMAN SEMINAR 1	1(1)	•								
		GEKS002	FRESHMAN SEMINAR 2	1(1)		•							
		Subtotal		10									
Core General Education	Ethics & Philosophy	GECE		3(3)	Choose 3 (1 from each category)								
	Literature & Art	GELA		3(3)									
	World Cultures	GEFC		3(3)									
	Quantitative Research	GEQR		3(3)									
	History	GEHI		3(3)									
	Sociological Studies	GESO		3(3)									
	Subtotal			9									
Major-related General Education		Foreign Language (Choose 1 among Readings in English, or Other Than English)		3	•								
		MATH161	CALCULUS WITH LAB Ⅰ	3(4)	•								
		MATH162	CALCULUS WITH LAB Ⅱ	3(4)		•							
		EGRN151	COMPUTER LANGUAGES LAB	3(4)		•							
		IMEN151	INTRODUCTION TO LINEAR ALGEBRA	3(4)		•							
		PHYS151	GENERAL PHYSICS Ⅰ	3(3)	Completion of 7 credits or more								※ PHYSICS Ⅰ, PHYSICS Ⅱ, CHEMISTRY, CHEMISTRY Ⅰ, CHEMISTRY Ⅱ courses should be completed along with their laboratory courses.
		PHYS161	GENERAL PHYSICS LABORATORY Ⅰ	1(3)									
		PHYS152	GENERAL PHYSICS Ⅱ	3(3)									
		PHYS162	GENERAL PHYSICS LABORATORY Ⅱ	1(3)									
		CHEM150	GENERAL CHEMISTRY	3(3)									
		CHEM155	GENERAL CHEMISTRY LABORATORY	1(3)									
		CHEM151	GENERAL CHEMISTRY Ⅰ	3(3)									
		CHEM153	GENERAL CHEMISTRY LABORATORY Ⅰ	1(3)									
		CHEM152	GENERAL CHEMISTRY Ⅱ	3(3)									
		CHEM154	GENERAL CHEMISTRY LABORATORY Ⅱ	1(3)									
		LIBS150	LIFE SCIENCES	3(3)									
		EGRN150	ENGINEERING MECHANICS	3(3)									
		EGRN153	ENGINEERING STATISTICS	3(3)									
		Subtotal		22-24									
Elective General Education				3									

<table>
<tr><td colspan="2">General Education (Etc.)</td><td colspan="2"></td><td>3</td><td>Core, Major-Related, Elective, etc.</td></tr>
<tr><td colspan="2" rowspan="14">Relative
Business School
Courses</td><td>EGRN111</td><td>MANAGEMENT OF TECHNOLOGY AND BUSINESS STRATEGY</td><td>3(3)</td><td rowspan="14">※ Completion 2 courses (6 credits) Required including ECONOMIC INVESTMENT DECISION ANALYSIS

※ GENERAL ACCOUNTING AND COST ACCOUNTING will not be acknowledged as “Relative Business School Courses” and “Major Elective” at the same time.</td></tr>
<tr><td>EGRN200</td><td>ECONOMIC INVESTMENT DECISION ANALYSIS</td><td>3(3)</td></tr>
<tr><td>IMEN204</td><td>GENERAL ACCOUNTING AND COST ACCOUNTING</td><td>3(3)</td></tr>
<tr><td>BUSS311</td><td>ORGANIZATIONAL BEHAVIOR</td><td>3(3)</td></tr>
<tr><td>BUSS313</td><td>INTERNATIONAL BUSINESS</td><td>3(3)</td></tr>
<tr><td>BUSS205</td><td>MARKETING MANAGEMENT</td><td>3(3)</td></tr>
<tr><td>BUSS207</td><td>FINANCIAL MANAGEMENT</td><td>3(3)</td></tr>
<tr><td>BUSS152</td><td>PRINCIPLES OF ACCOUNTING</td><td>3(3)</td></tr>
<tr><td>BUSS211</td><td>INTRODUCTION TO OPERATIONS MANAGEMENT</td><td>3(3)</td></tr>
<tr><td>BUSS215</td><td>INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS</td><td>3(3)</td></tr>
<tr><td>BUSS402</td><td>MANAGEMENT STRATEGY</td><td>3(3)</td></tr>
<tr><td>BUSS255</td><td>STRATEGIC MANAGEMENT OF TECHNOLOGY AND INNOVATION</td><td>3(3)</td></tr>
<tr><td>BUSS333</td><td>INTERNATIONAL PRODUCTION,PURCHASING AND R&D MANAGEMENT</td><td>3(3)</td></tr>
<tr><td>BUSS407</td><td>NEW PRODUCT DEVELOPMENT AND MARKETING</td><td>3(3)</td></tr>
<tr><td>BUSS246</td><td>MANAGEMENT SCIENCE</td><td>3(3)</td></tr>
<tr><td>SPGE145</td><td>MANAGEMENT OF PATENTS AND INTELLECTUAL PROPERTY</td><td>3(3)</td></tr>
<tr><td colspan="3">Subtotal</td><td>6</td><td></td></tr>
<tr><td colspan="4">Total</td><td>53-55</td><td>General Education Courses</td></tr>
<tr><td rowspan="3">Major
(Basic)</td><td>Required</td><td colspan="2"></td><td>30</td><td></td></tr>
<tr><td>Elective</td><td colspan="2"></td><td>12</td><td></td></tr>
<tr><td colspan="3">Subtotal</td><td>42</td><td></td></tr>
<tr><td rowspan="3">Major
(Advanced)</td><td>Required</td><td colspan="2"></td><td></td><td></td></tr>
<tr><td>Elective</td><td colspan="2"></td><td>30</td><td></td></tr>
<tr><td colspan="3">Subtotal</td><td>30</td><td></td></tr>
<tr><td colspan="4">Total</td><td>72</td><td>Major Courses</td></tr>
<tr><td colspan="2">Elective Courses (Etc.)</td><td colspan="2"></td><td>3-5</td><td></td></tr>
<tr><td colspan="4">Total Required Credits For Graduation (Minimum)</td><td>130</td><td></td></tr>
<tr><td colspan="2">Remarks</td><td colspan="4">1. “•” Signed Elective courses are Elective Required courses you should complete.
2. Physics Ⅰ, Physics Ⅱ, Chemistry, Chemistry Ⅰ, Chemistry Ⅱ courses should be completed along with their laboratory courses.
3. Additional credits above required credits from Core General Education, Major-related General Education, Elective General Education, Major courses will be recognized as Elective Courses.
4. Refer to Academic Affairs Dept. for Double major, Minor, Undergraduate Transfer, or Dual Degree credit requirements.
5. Refer to Academic Affairs Dept. for Major courses curriculum table.
6. If there has been a change in course code or course name, you can check the original version in http://portal.korea.ac.kr/.</td></tr>
</table>

* Major Courses Curriculum for Each Departments

	Basic Major		Subtotal	Second Major		Double Major Students from Other College
	Required	Elective		Double Major or Interdisciplinary Study of Other College	Advanced Major (Added to Basic Major)	
Department of Chemical and Biological Engineering	30	12	42	Additional acquisition of credits, in addition to Basic Major acquirements	Advanced Required 12 Elective 18	Required 30 Elective 12
Department of Materials Science and Engineering	32	10	42		Elective 30	Required 32 Elective 10
School of Civil, Environmental and Architectural Engineering	12	30	42		Elective 30	Assigned Required 34 Elective 8
Department of Architecture	108		108		Elective 15	Required 108
Department of Mechanical Engineering	28	14	42		Elective 30	Required, Elective Assigned 42
Division of Industrial Management Engineering	30	12	42		Elective 30	Required 30 Elective 12
School of Electrical Engineering	43		43		Advanced Required 24 Elective 6	Required 43
Remarks	* Department of Chemical and Biological Engineering : According to the regulation of "CHBE410 UNDERGRADUATE THESIS", senior students who were assigned to professors offices can register to the course in the second semester only when the professor has agreed. * Completion of INTERNSHIP subjects refer to the separate regulations (EGRN100, EGRN210, EGRN220, EGRN230, EGRN310, EGRN410, EGRN420, ARCH445, CHBE400, ARCH400, ACEE400, MECH400, AMSE400, KECE400, IMEN400).					

* Credit Completion of Dual Degree, Minor, Transfer(General, Undergraduate)

Departments	Double Major	Minor	General Transfer	Undergraduate Transfer
Department of Chemical and Biological Engineering	Required 30 Advanced Required 12 Elective 15	Required 30 Advanced Required 12	Assigned Required credits other than recognized courses	Required 30 Advanced Required 12 Elective 30
Department of Materials Science and Engineering	Required 32 Elective 25	Choose 21 among Required	〃	Required 32 Elective 40
School of Civil, Environmental and Architectural Engineering	Assigned Required 34 Elective 24	Choose 21 among Assigned Required	〃	Assigned Required 34 Elective 24
Department of Architecture	Required 108 Elective 15	Required 108	〃	Required 108 Elective 15
Department of Mechanical Engineering	Required 28 Elective Assigned 29	Assigned 20 among Required	〃	Required, Elective Assigned 31 Elective 41
Division of Industrial Management Engineering	Required 30 Elective 12	Required 30	〃	Required 30 Elective 42
School of Electrical Engineering	Required 43 Elective 24	Required 43	〃	Required 43 Elective 24

※ Students who wants to complete the course of ABEEK can refer to the regulations of the College of Engineering.
※ Undergraduate Transfer to the Department of Architecture may take 4 years of study for Architecture major students, and 5 years of study for Non-architecture major students.

Degree Conferred

1. All departments except for the Department of Architecture : Bachelor of Engineering
2. Department of Architecture : Bachelor of Architecture / Bachelor of Science in Architecture
3. Upon completion of ABEEK, majors categorized under the regulations of the College of Engineering will be conferred

Graduation Requirements

* Total required credits : 130 credits and above acquired (However, a 5 year-course Department of Architecture is required to acquire 165 credits and above)

1. General Education
2. Major
3. General Elective

Refer to curriculum

4. Graduation Thesis :
   Department of Materials Science and Engineering, School of Civil, Environmental and Architectural Engineering, Department of Mechanical Engineering, Division of Industrial Management Engineering – Substituted and satisfied by Required Graduation Credits.
   Department of Chemical and Biological Engineering – Submit of Graduation Thesis required as to the regulations of the department.
   Department of Architecture – Completion of DESIGN STUDIO7(ARCH435), DESIGN STUDIO8(ARCH436) and submittance of the completed work of Graduation design studio.
   School of Electrical Engineering – Completion of GRADUATION PROJECT Ⅰ, GRADUATION PROJECT Ⅱ(KECE401, 402)
5. Remarks : Refer to the regulations of each department. However, ABEEK volunteers should comply to the regulations of the college of Engineering.

* Second Major : Refer to the regulations of each college/department
* Acquirement of Public English Proficiency Test Score(foreign language) refers to Common Graduation Requirements in KU.

※ Common Graduation Requirements in KU :

* Mandatory completion of the second major
* Acquirement of Public English Proficiency Test Score(foreign language)

	TOEIC	TOFEL			TOSEL(A)	TEPS	IELTS
		PBT	CBT	IBT			
Students who started college between 2000-2004	600	503	177	63	444	502	5.0
Students who started college after 2005	650	530	193	70	498	556	5.5

* Completion of 5 courses lectured in English(native, foreign language)
* Certification of the comprehension of Chinese characters
  - Passing KU test of the understanding of Chinese Characters
  - It is recognized as satisfying requirement for Chinese Certificate(Hanja) standard for KU in case of acquiring certifications below.
  - Official institutions for Chinese characters and literature recognized by KU

Institution	Title	Level	Remarks
Corporation of Korea Hanja Education Research Institute	Hanja proficiency level test	Level 2 and above	
Korea Foreign Language Evaluation Institute Corp.	Practical Old Chinese Character Level Test	Level 2 and above	
Hanja Promotion Association	Hanja proficiency level test	Level 2 and above	
Hankuk Ah-moon Hwei	Hanja proficiency level test	Level 2 and above	
Hankuk Institution of Evaluation of Education	Hanja proficiency level test	Level 2 and above	
Institute of Korean Hanja and Hanmun Ability Development	Hanja proficiency level test	Level 2 and above	
The Korea Chamber of Commerce and Industry	Hanja proficiency level test	Level 2 and above	
YBM Sisa	YBM Hanja proficiency level test	Level 2 and above	
Hankuk Association of Information Management	Hanja proficiency level test	Level 2 and above	

* Certification of Korean Proficiency
  - Applied only to international students who started or transferred to Korea University after 2011
  - Acquisition of TOPIK Level 4 or completion certificate from the Korea University Korea Language & Culture Center level 4 or more

Curriculum

Course No.	Course Name	Credit (hour)	Prerequisite Course	Remarks
IMEN 156	INDUSTRIAL ENGINEERING	3(3)		Major Elective
IMEN 204	GENERAL ACCOUNTING AND COST ACCOUNTING	3(3)		Major Elective
IMEN 212	DATA STRUCTURE & ALGORITHM	3(3)		Major Elective
IMEN 213	**MATHEMATICAL STATISTICS & LAB**	**3(5)**		**Major Required**
IMEN 214	**APPLIED STATISTICS & LAB**	**3(5)**		**Major Required**
IMEN 215	**INTRODUCTION TO MANAGEMENT ENGINEERING**	**3(3)**		**Major Required**
IMEN 216	**OPERATIONS RESEARCH I & LAB**	**3(5)**		**Major Required**
IMEN 217	ADVANCED COMPUTER PROGRAMMING & LAB	3(4)		Major Elective

Course No.	Course Name	Credit (hour)	Prerequisite Course	Remarks
IMEN 219	HUMAN INTERFACE	3(5)		Major Elective
IMEN 222	ENGINEERING MATHEMATICS	3(3)		Major Elective
IMEN 255	MANUFACTURING SYSTEM ENGINEERING & LAB	3(5)		Major Elective
IMEN 301	**PRODUCTION PLANNING**	**3(4)**		**Major Required**
IMEN 302	SUPPLY CHAIN MANAGEMENT	3(4)		Major Elective
IMEN 303	**DESIGN OF INFORMATION SYSTEMS**	**3(4)**		**Major Required**
IMEN 310	INTRODUCTION TO BUSINESS LOGISTICS	3(3)		Major Elective
IMEN 315	**ERGONOMICS**	**3(5)**		**Major Required**
IMEN 319	**OPERATIONS RESEARCH Ⅱ & LAB**	**3(5)**		**Major Required**
IMEN 320	APPLICATION OF OPTIMIZATION MODELS	3(3)		Major Elective
IMEN 321	DATA MINING	3(3)		Major Elective
IMEN 324	SIMULATION & LAB	3(5)		Major Elective
IMEN 357	OPTIMIZATION THEORY AND MODELS	3(4)		Major Elective
IMEN 358	**QUALITY CONTROL**	**3(3)**		**Major Required**
IMEN 361	SPECIAL TOPICS IN INDUSTRIAL ENGINEERING Ⅰ	3(3)		Major Elective
IMEN 362	SPECIAL TOPICS IN INDUSTRIAL ENGINEERING Ⅱ	3(3)		Major Elective
IMEN 364	PRODUCTION CONTROL	3(3)		Major Elective
IMEN 370	DESIGN OF EXPERIMENTS	3(3)		Major Elective
IMEN 382	**PRODUCT DEVELOPMENT PROCESS**	**3(3)**		**Major Required**
IMEN 389	FIELD PLACEMENT Ⅰ	3(0)		Major Elective
IMEN 399	FIELD PLACEMENT Ⅱ	3(0)		Major Elective
IMEN 407	MANUFACTURING LOGISTICS SYSTEM DESIGN	3(3)		Major Elective
IMEN 415	MULTIVARIATE ANALYSIS	3(3)		Major Elective
IMEN 417	USER INTERFACE DESIGN & LAB	3(5)		Major Elective
IMEN 453	IMAGE INFORMATION SYSTEM	3(3)		Major Elective
IMEN 457	SYSTEM ANALYSIS	3(3)		Major Elective
IMEN 458	RELIABILITY ENGINEERING	3(3)		Major Elective
IMEN 460	INTRODUCTION TO META-HEURISTICS	3(3)		Major Elective
IMEN 466	SERVICE MANAGEMENT ENGINEERING	3(3)		Major Elective
IMEN 471	CAPSTONE DESIGN Ⅰ	3(4)		Major Elective
IMEN 472	CAPSTONE DESIGN Ⅱ	3(4)		Major Elective
EGRN 100	INTERNSHIP	3(0)		Major Elective
EGRN 210	INTERNATIONAL ENGINEERING INTERNSHIP Ⅰ	3(0)		Major Elective
EGRN 220	INTERNATIONAL ENGINEERING INTERNSHIP Ⅱ	6(0)		Major Elective
EGRN 230	INTERNATIONAL ENGINEERING INTERNSHIP Ⅲ	9(0)		Major Elective
EGRN 410	ENGINEERING INTERNSHIP Ⅰ	6(0)		Major Elective
EGRN 420	ENGINEERING INTERNSHIP Ⅱ	9(0)		Major Elective

▌Courses in Industrial Management Engineering▐

Major Courses

IMEN 156 INDUSTRIAL ENGINEERING

This course provides the introduction and basic theories of Industrial Engineering.

IMEN 204 GENERAL ACCOUNTING AND COST ACCOUNTING

Techniques for determination of income under various bases of accounting and analysis of all accounts appearing in the financial statements. Problems course for accountants and others whose activities require a working knowledge of cost principles and techniques. Structural aspects and techniques for solving cost problems.

IMEN 212 DATA STRUCTURE & ALGORITHM

Data structure is a way of storing data in a computer so that it can be used efficiently. Often a carefully chosen data structure will allow the most efficient algorithm to be used. A well-designed data structure allows a variety of critical oigned das to be ignformed, using as few resources, both execution t ee and memory space, as possible. Basic concept, core concept, implementation method, and evaluation method for data structure are covered.

IMEN 213 MATHEMATICAL STATISTICS & LAB

Designed as the first course for the study of the most important statistical techniques commonly used by engineers and scientists. Topics included are basic statistical concepts, specific distributions of random variables, independency and transformation methods. sample distributions are also included. A supplementary course to engineering statistics- Ⅰ. Various statistical concepts are consolidated by solving presented problems.

IMEN 214 APPLIED STATISTICS & LAB

This course mainly treats estimation and hypothesis testing on means and variances of one or more normal distributions. Non-parametrical statistics are also covered, including the sign test, signed-rank test, rank-sum test, runs test, and rank correlation coefficient. Students should take Applied Statistics Practice (IND 248) to be familiar with the computer S/W package for statistical analysis.

IMEN 215 INTRODUCTION TO MANAGEMENT ENGINEERING

This class aims to study the underlying methodologies of the management engineering. The scope of the subject includes technology strategy, technology management, modern investment theory, and risk analysis. Its primary objective is to understand the design of new product and services in emerging markets.

IMEN 216 OPERATIONS RESEARCH Ⅰ & LAB

Operations Research is an applied area employing both mathematics and computer science in addressing certain kinds of decision problems arising in a wide variety of disciplinary and professional contexts. Topics include linear programming and network formulations, the simplex algorithm and its computer implementation, sensitivity analysis, duality, network algorithms, project management with PERT/CPM, and dynamic programming. A clear understanding of merits and demerits of various modeling approaches is also emphasized.

IMEN 217 ADVANCED COMPUTER PROGRAMMING & LAB

Programming using Microsoft Visual C++6.0 and MFC Actual writing industrial programs and running them on windows system.

IMEN 219 HUMAN INTERFACE

The course largely deals with methodologies for designing work, workspace, and environment in industrial settings. efficient design of work not only improves productivity in industry, but also improves worker's health and safety. By fitting work to the worker, three approaches are mainly taught; ergonomics design, traditional methods engineering and motion and time study and standardization of work. The course provides the basis for other key courses in industrial engineering such as production control, quality engineering, ergonomics, and safety engineering. The course will be also greatly beneficial to engineers who wish to grasp better understanding of industrial process and production.

IMEN 222 ENGINEERING MATHEMATICS

Engineering mathematics provides basic knowledge for software and hardware developments. This course provides understandings of discrete mathematics and enable students to develop mathematical models and programming for various application problems. This course also provides an overview on the concepts of logic, set theory and function, and in-depth studies on graph theory and sequence are conducted.

IMEN 255 MANUFACTURING SYSTEM ENGINEERING & LAB

Manufacturing system engineering provides the basic knowledge of manufacturing processes and operations such as design , planning and control for the manufacturing products. Designing industrial parts and processing on the lathe and milling

machines using G code programming.

IMEN 301 PRODUCTION PLANNING [3]

Focused on understanding the system and management of manufacturing companies. Techniques and concepts for long, mid, and short-term production planning for manufacturing systems.

IMEN 302 SUPPLY CHAIN MANAGEMENT]

The course deals with decision-support models to increase the effectiveness of logistical flow in procurement, production, and distribution channels. Models for strategic decisions related to supply network design, strategic alliance, and distribution strategies are discussed, along with tactical decision support models for inventory management and vehicle routing.

IMEN 303 DESIGN OF INFORMATION SYSTEMS] 3 [

This course is concerned with the design and development of information systems, including system analysis, database management, communication networks, software engineering, and the evaluation of information systems.

IMEN 310 INTRODUCTION TO BUSINESS LOGISTICS H

The overall objective of this course is to acquaint the student with business logistics and supply chain management concepts used in manufacturing and transportation companies. Key topics include transport strategy, inventory strategy and outsourcing strategy.

IMEN 315 ERGONOMICS] 3

The course is intended to improve understandings of Ergonomics through lectures and experiments on methodologies related to Ergonomics.

IMEN 319 OPERATIONS RESEARCH Ⅱ & LAB [3

This course is a supplement to OR-Ⅱ. Case studies of the theoretical topics covered in OR-Ⅱ, such as Queueing theory, Forecasting theory, Markov decision theory, are dealt with. Students are required to carry out two to three team projects based on the case studies.

IMEN 320 APPLICATION OF OPTIMIZATION MODELS H

Operations Research is an applied area employing both mathematics and quantitative analysis tools to get solutions of decision problems arising in a wide variety of disciplinary and professional contexts. In this class, we will focus on multi-disciplinary fields such as 1) Inventory-Production or Supply Chains system 2) Water Resource System Planning and Operation 3) Capacity Expansion Planning, or 4) any subject selected in the class. Optimization techniques such as simulated annealing, Tabu search or alternative contemporary structured methodology-based approaches will also be investigated. Each student will be given an article from one of the subjects we cover in the class. Each student will be responsible for providing one oral tutorial on the article to the class during the appointed class hour. Through problem solving sessions, journal article review, class discussion, software demonstration, team term-project software demonstrations, and Internet tools (web sites, email, and message board) students will improve their communication and computer skills.

IMEN 321 DATA MINING [3

Data mining is to analyse the data to extract interesting information. This course will cover traditional data mining topics such as clustering and association rule learning. We will also consider privacy issues in data mining and cover random sampling and stream processing methods.

IMEN 324 SIMULATION & LAB

Introduction to the design and analysis of discrete and continuous systems using simulation. Emphasizes model construction and statistical aspect of simulation. It gives a comprehensive and state of the art treatment of all the important aspects of a simulation including modeling, simulation software, model verification and validation, input modeling, generating random variate and processes, and design statistical scheme for the simulation experiments.

IMEN 357 OPTIMIZATION THEORY AND MODELS]

Optimization is one of the core areas in Operations Research with diverse applications in transportation, production, logistics, telecommunications, managerial, public and governmental, financial systems. In this course, integer program models, network models, non-linear program models, and game theory models are introduced. There is a student-team term project to apply the models treated in the course to a real environment setting.

IMEN 358 QUALITY CONTROL [3

This course provides several statistical methods for efficient quality control. Control charts for process control and sampling inspection for product inspection are discussed. Students learn not only various methods but the proper selection and dynamic operation system in accordance with the environmental changes.

IMEN 361 SPECIAL TOPICS IN INDUSTRIAL ENGINEERING Ⅰ [3

This course deals broadly with timely topics not included in requlars courses of I.E. and O.R.

IMEN 362 SPECIAL TOPICS IN INDUSTRIAL ENGINEERING Ⅱ

This course deals broadly with timely topics not included in requlars courses of I.E. and O.R.

IMEN 364 PRODUCTION CONTROL [3]

Scheduling for the execution of a given production plan, control of the manufacturing system under a given schedule are the subjects of the study. Also related topics, techniques and knowledges are taught.

IMEN 370 DESIGN OF EXPERIMENTS [3]

This course presents the design and analysis of experiments for various science and engineering problems. This course covers analysis of variance, factorial and fractional factorial designs, nested designs, analysis of covariance, and response surface methods.

IMEN 382 PRODUCT DEVELOPMENT PROCESS [3]

Theories and practices on new product development are taught in this course. Methodologies for extracting customer characteristics from ergonomics and marketing aspects are dealt as a part of planning process of developing new products and services, including creative ideation, understanding of customer needs, benchmarking practices.

IMEN 389 FIELD PLACEMENT Ⅰ [3]

This course gives students the opportunity to integrate theory learned in the classroom with practical application and skills development.

IMEN 399 FIELD PLACEMENT Ⅱ [3]

This course gives students the opportunity to integrate theory learned in the classroom with practical application and skills development.

IMEN 407 MANUFACTURING LOGISTICS SYSTEM DESIGN [3]

This course provides an analytical treatment of the subject of logistics facility layout and location. The layout design process consists of problem formulation, analysis of the problem, search for layout designs, selection of the preferred design, and specification of the layout design to be installed. This course also considers the problem of locating one or several new logistics facilities with respect to existing facilities. Students will be assigned a project.

IMEN 415 MULTIVARIATE ANALYSIS [3]

Human Factors research methodologies are studied in the course. The course is designed for graduated students who have a understanding of basic statistics. The first part of the course is an overview of the several survey methods and the types of the human response data. The course then continues with multivariate analysis techniques for preference data of the customers with emphasis on the aspects of product development process.

IMEN 417 USER INTERFACE DESIGN & LAB [3]

This course focuses on a broad survey of designing, implementing, managing, maintaining, training, and refining the user-interface and human performance of HCI.

IMEN 453 IMAGE INFORMATION SYSTEM [3]

In content based image retrieval systems, we introduce intelligent image systems and study the analysis method of this system. We learn the pattern recognition algorithms of various image informations and model systems in real. Modeling of computer vision system, introduction of industrial applications. Image processing, Image Analysis, and pattern recognition.

IMEN 457 SYSTEM ANALYSIS [3]

Systems Analysis is the art of problem solving. Systems analysis is the study of a current industrial business system and its problems, the determination and definition of business needs and information requirements, and the evaluation of alternative solutions. The purpose of this course is to empower students to successfully apply computer-based decision technologies to a wide variety of practical business decision problems. Applications include: supply chain management, technology and vendor selection, and employee evaluation, capital budgeting, portfolio analysis, resource allocation analysis. Mathematical programming, the analytic hierarchy process, and the artificial neural network are applied to these problems. Student teams conduct self-directed projects that are often implemented within their own organizations. We may use student versions of LINGO and/or MATLAB for mathematical programming and ANN, Expert Choice for the analytic hierarchy process; and Excel for simulation concepts and input/output interfacing with the LINGO, Expert Choice, and MATLAB.

IMEN 458 RELIABILITY ENGINEERING [3]

This course provides an introduction to the probabilistic models and statistical methods that can be applied to a data set of lifetimes. Models and inference techniques for lifetime distributions can be applied to broad areas including reliability engineering, actuarial science, and biostatistics.

IMEN 460 INTRODUCTION TO META-HEURISTICS [3]

Many optimization models arising in practice are too complicated to handle with the optimization theory alone. In this course, powerful tools and theory for dealing with many practical optimization models are presented. These tools, collectively called as meta-heuristic, include genetic algorithms, tabu search, and simulated annealing.

IMEN 466 SERVICE MANAGEMENT ENGINEERING [3]

This course will help engineers to analyze problems of management systems in service industry sectors. Management Science

modeling will be key topics for the class.

IMEN 471 CAPSTONE DESIGN Ⅰ [3]

This course cultivates students' comprehensive design ability through in-depth design project proposed by academic advisor. Students can learn applications of Industrial Management Engineering and designing ability by taking this course.

IMEN 472 CAPSTONE DESIGN Ⅱ [3]

This course cultivates students' comprehensive design ability through in-depth design project proposed by academic advisor. Students can learn applications of Industrial Management Engineering and designing ability by taking this course.