English-Speaking course structure for 2014

● Mechanical Engineering - Major

No	Couse Code	Course name(Korean)	Description
1	BSM550	Programming Language	Programming Language, which is an extension of C Programming Language course, covers intermediate and advanced C programming method that is not included in C Programming Language course. This course also explores concept of Class, Overloading, Encapsulation and Inheritance of object-oriented language.
2	MEB201	Engineering Graphics and Computer Aided Design Practice	Engineering Drawing and CAD is an introduction of 2-dimensional and 3-dimensional Computer-Aided Design (CAD) with focus on mechanical applications. Students will learn Korean industrial standard for mechanical drawings and how to use industry-leading CAD software programs to model, create and distribute basic, industry-standard mechanical drawings.
3	MEB331	Thermodynamics	
4	MEC412	Applied Mechanical Experiments	Applied Dynamics Experiment assists students with the ability to apply the concept of dynamics learned in statics, dynamics, material mechanics, engineering vibration and other theory courses to real structures.
5	MEC420	Mechanical Vibration	Mechanical Vibration covers the basic concept of vibration and analysis solutions in order to identify vibration in mechanical structures, and design solutions such as vibration proof to diminish vibration. This course forecasts vibration via analysis program to support better understanding of the analysis and shares case studies to improve basic practical skills.
6	MEC431	Heat Transfer	
7	MEC441	Design of Mechanical Elements	Mechanical Element Design explores configuration, operation and design process of various mechanical elements from dynamic, material and mechanical point of view as the preliminary stage to design high-tech machine system. This course improves skills to develop a reasonable design based on creative, interpretative and theoretic knowledge and performs computer-aided mechanical design assignments.

8	MED800	Internal Combustion	Internal Combustion provides basics on design and production of internal combustion, which generates power, based on knowledge into thermodynamics, hydromechanics, material mechanics and heat transfer. This course explores history, basic cycle and operational characteristics of internal combustion. Other learning contents include combustion cycle of electric ignition engine compression ignition engine, thermo-chemistry and fuel, air/fuel suction, fluid distribution in combustion room, combustion, exhaust flow, emission gas, heat transfer and lubrication inside engine.
9	MEF452	Mechanical Control	Lectures will cover the tools and methods for the analysis and control of linear time-invariant feedback systems. The emphasis is on basic related mathematics, modeling method of mechanical and electrical systems , and analysis and design of closed loop control system. Matlab and actual control system will be used in the experimental class.
10	MEF661	Creative Engineering Design	Creative Engineering Design, which is based on mechanical engineering, electrical engineering and electronic engineering, involves students into examining basic data for a given assignment, actual design, production and evaluation to build creativity and engineering problem-solving skills. Students are grouped into teams for assignments they're supposed to choose.
11	MEF700	Welding Engineering	Welding is applied to a wide array of industries including machines, metals, civil engineering, shipbuilding, air and marine. Joining solutions are critical in advanced technologies, too. Welding Engineering and Practice covers general welding theories to manipulate welding machines, selection of welding materials, welding method of materials, solutions to prevent residual stress, correct welding deflection, interpretation of welding layout, welding design, construction, inspection and all the other theories and practical skills applicable to all worksites and training environment.
12	MEF780	Electrical and Electronics Engineering and Practice	Electrica/Electronic Engineering and Practice covers basic theories and practice of basic electrical engineering, which is required for mechanical engineering. This course covers basic concept on voltage, current, resistance and describes how passive elements such as resistance, capacitor and inductor work. Solutions to analyze linear circuits composed of passive elements are also offered in this course.
13	MEC371	Manufacturing Process	
14	MED632	Kinematics	An apparatus is designed to transfer power or motion from a source of power. Manufacturing Process covers laws of movement between form and elements of components that make up an apparatus, analysis of kinematics of machinery, link apparatus, cam, gear, gear train and linkage synthesis. Analysis into machines indicates that all machines have a consistent motion system, however complex it is, and the study of relative motion between each element that compose the motion system serves as the foundation for machinery design.

15	MEB321	Dynamics	Kinetics deals with kinematics and motor mechanics of particles and solid types as the dynamics analyzing motion of objects. It is the study of speed, displacement, acceleration, relation between force on an object and its mass, work-kinetic energy, impulse force and quantity of motion. This course induces basic principles of dynamics via vector analysis and studies analysis of three-dimensional questions that cannot be easily solved by Scalar approach to develop accurate understanding of the basic principles of dynamics and engineering problem-solving skills.
16	MEH220	Introduction to Robotics	Robot Engineering 101 introduces various types of robots and Forward Kinematics, Inverse Kinematics, Jacobian and Inverse Jacobian based on D-H notation. Students make 2-link robot with 2 degree-of-freedom during experiment to perform basic location control.
17	MEC200	Applied CAD Practice	Application CAD Practice introduces basic principles of wire frame model and solid model, which is based on III dimensional modeling technique by SolidWorks software, to practice III dimensional CAD. This course utilizes layout design technique from solid model and advanced API, which realizes parametric modeling function, for practice.
18	MEF690	Advanced Computer Programing	Application Programming is an advanced programming course which focuses on C++ language that adds object-oriented programming concept to C language. Students are encouraged to make Graphical User Interface programming, timer programming and plenty of other application programmings to bolster computer program development skills.
19	MEC462	Automobile CAD & Design	CAD for Cars and Design uses a CAD program named CATIA to model, draw and design car structures and parts. This course provides opportunities to enhance basic car design techniques from PART DESIGN to ASSEMBLY and TERM PROJECT.
20	MEE610	Vehicle Dynamics	Vehicle Dynamics introduces basic principles of vehicle dynamics that analyze the relations between force, mass and motion that affect vehicle performance and safety, and how such principles can be applied to determine vehicle design basics supporting comfort and driving safety. Specific learning contents include development of vibration model and solutions to set and analyze mathematical equations.
21	MEF810	Engineering Computer Aided Design	Computer Application Design Engineering introduces the latest terminologies and technologies applied to computer application design, and provides understanding of graphic studies and case studies of specific product design issues to build students' computer application design skills. This course explores various exercises and application cases to intensively examine interdisciplinary characteristics of engineering design and computer graphics.
22	MEH340	Modern Control	

● Mechatronics Engineering - Major

No	Couse Code	Course name(Korean)	Description
1	CCT346	Solar Cell Engineering & Lab	This course offers a fundamentals of manufacturing process of solar cell and introductory semiconductor technology in order for students to be able to design and fabricate elementary solar cell systems for green energy production.
2	MTA242	Finite Element Method and Lab	Finite Element Analysis and Practice covers finite element analysis theories and theory-based structural analysis solutions.
3	MTA412	Materials for Mechanics and Electronics	Mechanical and Electronic Materials introduces material engineering basics required to design mechanical and electronic parts by learning characteristics of various mechanical and electronic materials. This course teaches characteristics, property and manufacturing method of steel materials, nonferrous materials and nonmetallic materials, and covers basic knowledge on semiconductivity and superconductivity to develop skills applicable to mechanical design. Other learning contents provided in this course include electric property, magnetic property, optical property such as semiconductivity and superconductivity of electronic materials and characteristics and usage of magnetic materials.
4	MTB302	Solid Mechanics	Material Mechanics provides mechanical knowledge material engineers need to consider for selecting materials. This course covers basic concept of material mechanics, relation between stress and strain rate, analysis of strength and strain, stress and strain of beam, buckling, material strain by external force, design of mechanical parts and structures and basics of material selection.
5	MTF293	Circuit Theory and Lab.	Circuit Theory and Practice introduces phasor method, network function method, Laplace's method and other methods to analyze AC circuit. This course introduces solutions to gain frequency response, unique response, forced response and complete response of circuit via phasor method, network function method, Laplace's method and others.
6	MTA221	Signal Systems and Lab	Signal System and Experiment, which is the study of analyzing signal and system, introduces analysis in time domain and frequency domain. This course also deals with digital analysis by extracting and processing sample signals.
7	MCA381	Applied Electronic Circuit and Practice	Electronic Circuit Application and Practice
8	MTF351	Ultrasonics and Lab	Ultrasonics and Practice introduces a non-destructive inspection technique, which is commonly used for life assessment based on fracture mechanics, and ultrasonic inspection of structures and mechanical parts used in today's industrial world to determine their reliability and safety based on experiments. This course provides understanding of technologies to examine physical state or defect of materials by projecting different shapes of wave inside materials based on basic principles and practices non-destructive evaluation technologies of ultrasonic detection of defect, X-ray inspection technique, electromagnetic wave technique, optical technique by testing standard specimen and flawed specimen.

● Electrical, Electronics & Communication Engineering

No	Couse Code	Course name(Korean)	Description
1	BSM540	Computer Programming Basic	Programming covers grammar for C language and solutions to develop programs based on C language.
2	IFA421	Electric Application and Lab	Electric Application and Practice, which covers applied fields of electrical engineering, focuses on lighting application, heating application and other wide breadth of learning contents to nurture broad applicability. Subjects covered in this course include overview on lighting, photometric illuminance calculation required for lighting environment that supports pleasant activities, structure of light bulbs and their luminescence and application in schools, office, factories, homes and street lightings to evaluate lights in quantitative/qualitative terms and build skills to design lights. Understanding of electric heating method, electrothermal calculation, operating principles of electric welding machines, electric drying and temperature control and basics and practice for electric application are also offered in this course.
3	IFB270	Advanced Electronic Circuit	Advanced Electronic Circuit offers specialized and widely applicable knowledge on electronic circuit. This course covers OP amplifier, frequency response, circuit return, power amplifying circuit and oscillation circuit founded on multistage amplifying circuit.
4	IFB312	RF Circuit Design and Lab	IT as an integral part of people's lives and usage of RF band is making circuit design solutions suiting RF band higher in demand. RF Circuit Design and Practice introduces basic electric network theory, electromagnetic field theory and a wide breadth of methods to design bias circuit, matching circuit, filter, amplifier, mixer and oscillator. This course runs a simulation program to explore line characteristics in RF band, design impedience matching circuit and amplifying circuit.
5	IFB341	Mechatronics System Design and Lab	Mechatronics System Design and Pratice is drawing a spotlight as a new field of integrated study beyond a mere merger of the conventional machine system and electronic system. This course uses a textbook co-published with professors from countries known for advanced mechatronics to learn both basic and applied elements design, and makes verifications by simulating with MATLAB SIMULINK program.
6	IFB500	Network Theory	Theory on Electrical Network, which is a follow-up to Circuit Theory, introduces basic theories on electric network and transient. Basics on electric network, electric network formula, impedance function, transfer function, 2/4 socket electric network, analysis of transient in RLC circuit, circuit analysis from Laplace transformation, frequency response and signal analysis from Fourier series are also covered in this course.

7	IFB601	DSP Processor and Lab	DSP Processor and Practice explores basic structure and code of DSP processor, which is a fast signal processing processor, and introduces basic operation programming methods of each function and signal processing algorithm practice.
8	IFC224	Digital broadcasting and Lab.	Digital Broadcasting and Practice offers basic foundation to develop application techniques in digital broadcasting by introducing various design solutions on broadcasting system and basic concept of digital broadcasting, in particular.
9	IFE101	Basic Electrical Practice	Basic Electric Practice is the introductory course for electric engineers as it provides basics for learning and practicing electric engineering needed to effectively perform experiments and practices in major courses later on. This course covers the need for safety, abbreviations and signs, way to use power supply and basic measuring instruments and experiments basic characteristics of each element making up a power circuit.
10	IFA193	Applied Embeded System Lab.	Embedded Application and Practice provides practice on programming and application system design applicable to actual settings by combining microcontroller and sensors of all types.
11	IFA380	Electrical Machine Design	Goal of Electric Instrument Design is to develop a clear understanding of how electric instruments are designed and manufactured by introducing theories behind electric instrument design, design procedures and limiting conditions. Application skills in electric instrument industry are cultivated by designing electric instruments and learning techniques to determine specification.
12	IFA341	Power Supplier Design	Power supply is the key part supplying control power and actuating power to all electric instruments. Power Supply Design introduces design techniques applied to protective devices and I/O devices and various circuit systems to keep power supply devices lightweight, compact and highly efficient. This course runs simulations to verify such techniques.
13	IFC240	Data Communication	Data Communication primarily focuses on data communication technologies, communication link, equipment, protocol and network application to share, accurately send and process resources with speed. This course introduces specific cases of data communication using PCs to support easier approach to data communication theories.
14	IFC330	Coding Theory for Communication	Information transmission via a channel in a digital communication inevitably causes errors, which can be controlled by channel coding methods. Channel code can be divided into block code and convolution code. Primary goal of IT Theory of Code is to learn encoding procedures and descrambling algorithm of each code. Secondary goal of this course is to learn how these codes are used in real digital communication system i.e. mobile communication, satellite communication and broadcast communication system.

● Computer Engineering

No	Couse Code	Course name(Korean)	Description
1	CPA131	C programming Language I	In this course, students could understand the syntax and semantics of C program. And this course covers the basic C programming skill which includes data types, constants variables, variables, input-output statements, several operators, condition statements, repeat statements, functions, arrays, pointer variables, structures, and file input-output method etc. This course offers the many practice, thus it helps students to increase the programming skill.
2	CPA212	Digital Logic and Lab	Digital Engineering and Practice introduces basic concept of digital logical circuit, which is the foundation of computer engineering. Goal of this course is to build skills to analyze logical circuit and have a good grasp of digital system design concept.
3	CPA221	C++programming	C++ Programming introduces C++ programming basics to learn object-oriented programming methods needed to develop C++ programs, polymorphism and template, etc.
4	CPA340	Algorithm and Lab.	To improve the ability that implements the efficient and accurate logic in order to solve a problem as well as analyze a problem based on the contents of programming and data structure courses, this course covers divide-and-conque, dynamic programming, greedy approach, backtracking, time complexity and NP.
5	CPC431	Virtual Reality and Lab	Basic theories and various schemes on virtual reality(VR) are dealt in the course. The goal of the course is to produce useful and creative capability as well as trained students fluent in theoretical and practical VRs.
6	CPS311	Database	Database and Practice introduces theories on the basic components of a database system. Learning contents in this course include database design theories based on related data model, simultaneity control and recovery and implementation of database management system such as transaction management.
7	CPC461	Computer Vision and Lab	Computer Vision and Practice introduces basic imagery interpretation and computer vision techniques associated with image acquisition model, camera calibration, binary image processing/analysis, morphology, edge extraction, shape, contour, region segmentation and object recognition.

8	CPC321	Animation and Lab	Animation and Practice introduces basic concept of computer animation production techniques that are being applied to wide spectrum of fields. This course uses such production tools as Flash and 3D MAX to learn characteristics of 2D, 3D animations and how they're produced to eventually build the foundation for inventing new techniques.
9	CPC361	Mobile Programming	Web programmers commonly use Multi board, Community website in order to make them web site. So Students can apply to an actual work their knowledge that the most necessary trend technology through this course. For the reason, the goal of this course is applying an actual work.
10	CPA240	Java Programming	Java is an object-oriented programming language widely used in web programming and mobile programming, etc. This course performs object-oriented designs with the goal to understand principles and concept of object-oriented programming based on lectures and practice on how to use Java grammar and Java library. This course enhances understanding of object-oriented concepts such as class, interface and inheritance and basic object-oriented design skills.

● Design Engineering

No	Couse Code	Course name(Korean)	Description
1	IDA447	Design Communication	This course is made up such contents that go forward with a theory and actual training at once by making a portfolio themselves after those who belong to senior students learn contents that is based in essential conditions and forms concerning a Portfolio.
2	IDA900	Human-Computer Interaction	Theories and knowledge on the interaction between humans and computers are important in designing electronic and IT products that are getting increasingly digital. Design Portfolio covers understandings on human nature, PCs, their way of interaction and usability evaluation that need to be considered to support smooth interaction between humans and computerized products. In practice, students learn ways to design products in the most user-friendly manner.
3	IDA911	ComputerAided Industrial Design	CAID shares three-dimensional basic modeling and rendering techniques to improve product design skills utilizing PC. Goal of this course is to maximize PC utilization skills via basic product modeling and symbol tower, etc.
4	IDA444	Design Communication I	This course can make those who join this class learn public speaking that is essential to need design's delivery procedure by having those who join this class understand presentation skill which is relevant to determination concerning achievement in process of designing course.
5	IDA321	Color Planning and Practice	In this course, students learn color theories such as color harmony theory and color psychology, etc. Based on them, students apply the theories to actual designs and experience a series of courses that the effectiveness of the result is validated and evaluated. In addition, the progress of each team project leads team members to practice systematic training and collaborative performance about the color planning.

● Energy, Materials and Chemical Engineering

No	Couse Code	Course name(Korean)	Description
1	BSM761	General Chemistry	
2	CHA131	Analytical Chemistry	Analytical Chemistry introduces basic theories including electrolyte solution, acid-base equilibrium, formation and dissolution of precipitation, oxidation-reduction equilibrium and complex ion, analytical principles of anion/cation, application of qualitative analysis manipulation, micro qualitative analysis, treatment of error and analysis value, gravimetric analysis, volumetric analysis, neutralimetry, chelatometry and industrial chemical analysis method. 3
3	CHA200	Instrumental Analysis & Practice I	Chemistry, biology, physics, geology, life science, environmental science and other studies dealing with substances have evolved through measurement and analysis, Measurement and analysis techniques have evolved at the same time to the extent of using contemporary instruments. Instrumental Analysis and Practice I provides understanding of the basic characteristics of electronic circuits and electric devices that make up analysis instruments, signal, noise, basic principles of measuring devices, configuration of various spectroscopic analysis instruments, their way of operation, different analysis techniques and applications, and helps students build practical skills to operate and analyze devices through experiments.
4	CHA293	Creative Engineering Design	Creative Engineering Design(Capstone Design) enhances basic designing skills required for product development and manufacturing. This course provides practical training opportunities to build creativity required for product design.
5	CHA741	Transmission phenomenal Application	Conveyance Phenomenon Application discusses processes of applying basic knowledge in heat mass transfer, hydromechanics and thermodynamics to various separation and refining process and new technologies employed in new alternative energy, etc.

6	MSA240	Thermodynamics of Materials	Material Thermodynamics introduces basic knowledge for developing and manufacturing materials such as the first law of thermodynamics, the second law of thermodynamics, property and reaction of entropy, gas, liquid and solid, free energy, equilibrium diagram, transfer, equilibrium constant, chemical potential and phase equilibrium.
7	MSA250	Material Science I	Material Science I introduces correlation between machining process, tissue and property to have better understanding of metallic materials, ceramic, semiconductor, high-molecular materials and other engineering materials. This course covers atomic combination, crystal structure, solid combination, phase equilibrium, phase transformation, reaction speed, mechanical property of solid matters, plastic deformation and enhancers, and emphasizes correlation between mechanical, electromagnetic, chemical and optical property of micro structures in each engineering material.
8	MSA600	Welding and Joining of Materials	Welding and Practice introduces basic principles to weld and join engineering materials such as structural steel and nonferrous materials. Specific leaning contents include thermal flow of weld zones based on fusion bonding, thermal gradient, reaction between molten metal and flux, coagulation of molten metal, relation between micro structure and mechanical property in weld zone and heat-affected zone, formation and deformation of residual stress, and cause and prevention of welding defects. This course primarily focuses on nucleation and growth caused by phase transformation in a weld zone and its impact on micro structure and mechanical property of the weld zone.
9	MSA610	Casting & Solidification Processing and Practice	Casting Solidification and Practice introduces nucleation theory, coagulation defect, segregation and understanding of crystal growth and its related phenomenon. Specific learning contents include casting materials, molding materials, molding methods, dissolution methods, mold design method, casting-related instruments, casting process, casting structure and usage of casting materials.
10	MSA902	Introduction to Display Engineering	Display Engineering 101 offers theoretical knowledge on process, materials, technologies employed in LCD, PDP, organic EL, FED and other state-of-the-art flat display mounted to large wall TVs, laptops and mobile phones.

11	CHA231	Life Organic Chemistry	Life Organic Chemistry focuses on understanding reactions between biomolecules in biochemistry and characteristics of biomaterials based on organic chemistry. This course introduces carbonyl organic chemical reaction, which is needed to build foundation to understand biochemical reaction, and biochemical reaction of biomolecules such as protein, nucleic acid, lipid and carbohydrate to develop better grasp of biotechnology in general.
12	MSA341	Electrochemistry of Materials and Practice	Electrochemistry and Practice of Materials introduces basics of electrochemistry of materials such as ion behavior in aqueous solution, equilibrium electrode potential of ion/metal electrode, electroc reaction speed and mass transfer in electrolytic process with the goal to better understand corrosion of plating, battery and metal, which is associated with electrochemical behavior of materials. This course also provide lectures and practices of cases of plating, battery and metal corrosion.
13	MSA381	Electrical and Magnetic Materials	Electromagnetic Materials introduces electrical property such as semi-conductivity and super-conductivity of materials, magnetic property such as ferromagnetic, anti-ferromagnetism and B-H curve, optical property such as permeableness, polarization and fluorescence, and characteristics and application of electromagnetic materials such as semiconductor, magnetic materials and other functional materials such as superconducting materials.
14	MSA620	Powder Materials Processing and Practice	This course aims to introduce importance and limitation of powder processing compare with other fabrication techniques. Characterization and production processes of powder, mixing and consolidation of powders, mechanisms and major factors affecting sintering and various application of powder processeing will be covered through lectures and lab experiments.
15	MSA691	Automotive Materials	Car Materials introduces types and functions of car parts that make up car body, engine, sash and interior/exterior materials. This course instructs ways to choose materials for manufacturing car parts, evaluate process, performance and durability from material point of view.

16	CHA181	Chemical Process Calculation	Basic Principles and Calculations in Chemical Engineering introduces dimensional analysis and unit conversion, which is the basic calculation process of chemical engineering. This course mainly covers material balance under a chemical reaction system or otherwise to build the academic foundation for taking major chemical engineering subjects later on.
17	CHA701	Chemical Engineering & Practice Ⅱ	Chemical Engineering Thermodynamics and Practice II introduces the basic concept of the first law of thermodynamics and the second law of thermodynamics, and the basic interaction formula. This course applies laws of thermodynamics to engineering questions and describes theoretical background of pressure-volume-temperature behavior of a fluid and thermodynamic characteristics such as heat effect through experiments to build the foundation for taking advanced courses later on.

● Industrial Management

No	Couse Code	Course name(Korean)	Description
1	IMA251	Microeconomics	Microeconomics introduces economic theories in mathematical ways based on Economics 101 and primarily focuses on consumer theory and producer theory. This course is a pre-requisite course for Labor Market Theory and is required to acquire certificates.
2	IMA310	Financial Management	Financial Management introduces basic financial issues and problem-solving skills. Specific learning contents include management of working capital, mid-to-long-term financial and capital budget, etc.
3	IMA390	Investment	Investment introduces general capital management that includes feasibility analysis and investment valuation of facilities investment, portfolio theory, management and evaluation of stocks and bond and financial derivatives, etc.
4	IMA441	International Management	International Business introduces theories of running global joint ventures and multinational companies that are under different business environments and international business in general.
5	IMA481	SAP FCM	SAP-FCM Practice provides understanding of SAP, which is used to obtain accounting information, and of process improvement solutions utilizing SAP. This course provides students opportunities to learn and practice real accounting based on SAP, which enjoys the largest global market share. SAP consultants provide minimum four lectures in this course designated as school-work link course.
6	IMA505	Business English I	Students at Business Communication 1 can proficiently speak and fully communicate in English as non-natives by having a firm grasp of vocabularies and grammars. Students can further develop their English proficiency skills to the level of understanding and communicating variety of issues and subjects in English.

7	IM420	International Trade	This course will provide you with an analytical framework for the study of international trade. Historically, international trade has played a critical role in enabling countries to grow and develop. Through international trade in goods and services, the economies of different countries are more interconnected now than ever before. During the semester students we will cover a broad array of relevant topics in international trade.
8	IMB814	Datamining	Datamining introduces analysis techniques of e-businesses.
9	IMC602	Technology Management	This course aims to equip students with the knowledge to understand and the skills to manage innovation at the rganizational change to improve the competitiveness of firms and effectiveness of other organizations.
10	IMC612	Product Quality Control	Quality management(management) plays a key role in business rationalization and competitiveness. Statistical quality management, in particular, is a big contributor to delivering products and services that satisfy customer needs. Goal of this course is to introduce and practice solutions to manufacture, sell and provide products and services of customers' choice by dealing with quality management techniques required to develop an optimal quality system compatible with industries and to elevate efficiency by utilizing statistical knowledge.
11	IMC700	Seminar on Technology Strategy	Goal of Seminar on Technology Strategy is to introduce major issues and latest theories of technology strategy, management of technology and technology foundation, and to develop skills to apply theories into practice. Learning contents include technology strategy design, overview of technology strategy, strategic management of technology and research management, execution of technology strategy, development of new products and latest issues on management of technology, etc.
12	IMD741	Information System Management	Information System Management focuses on utilization and management of information system to provide more value to customers and secure competitive edge. This is aligned with the strategic viewpoint to use and manage information system with the intention to bolster internal capabilities.

13	IMB813	e-Biz Analysis Methodology	e-Business Analysis Methodology introduces e-Business analysis techniques.
14	BSM970	Managerial Statistics & Practices	Goal of Business Statistics Practice is to develop basic skills to understand and analyze quantitative data on economics and business management. This course provides basic statistics in theories to develop understanding of quantitative data and uses Excel and SPSS package to build skills for basic statistical analysis. Prerequisite course is Business Statistics(probability and statistics) and only students who have taken Computer Practice and learned to use Excel are eligible for the course. Functions and mathematical terminologies are used to perform analysis based on statistical theories and SPSS. Students need to have basic math and computer skills.
15	IMA212	Economics	1) Economics 101 offers basic theories of all courses at School of Industrial Management. Goal of this course is to provide clear understanding of the basic principles and economic way of thinking to students as the level of understanding of Economic 101 will determine performance and understanding of other courses later on. 2) Economics 101 deals with both microeconomics and macroeconomics. Consumer theory, producer theory, market theory, economic theory related to the public sector, entrepreneurial behavior, industrial organization, theory of income distribution and labor market theory are key learning contents covered in microeconomics. In macroeconomics, total supply and demand, financial policies and fiscal policies are key learning contents.
16	IMD821	ServiceOperating Management	Service Operation & Management provides theoretic and practical knowledge on how to set strategies and direction for developing e-business system, policies to implement and leverage the system based on specific application solutions and case studies. This requires a clear definition of e-business and focus on the system capable of delivering and operating e-business in an efficient and effective manner.
17	IMA701	Six Sigma Management	Goal of Six Sigma Management is to learn economic principles behind resource distribution in the market and develop skills to explain and analyze common economic phenomena with economic principles.
18	IMA503	Business English I	Students at Business Communication 1 can proficiently speak and fully communicate in English as non-natives by having a firm grasp of vocabularies and grammars. Students can further develop their English proficiency skills to the level of understanding and communicating variety of issues and subjects in English.
19	IMA609	Internal Control and Financial Report	Internal Control and Financial Report introduces basic concept and theories behind auditing and overall auditing procedures.

● Architecture Engineering

No	Couse Code	Course name(Korean)	Description
1	ARE801	Construction Planning and Management	Management in Construction introduces cost management, productivity analysis, quality control and other management theories and advanced management techniques based on case studies, and basic concept and principles of contemporary construction management based on concrete construction plan and design. This course particularly describes basic theories of developing and controling master plan, schedule plan, procurement plan and manning plan required for executing construction projects and techniques to set and manage detailed plans via the latest project management program.
2	ARE811	Construction Process Management and Practice	Construction Process Management and Practice offers knowledge on the basic construction management junior site technicians are required to be aware of. Specific learning contents include various techniques for schedule management from project planning to design and construction, Gantt Bar Chart, PERT/CPM and other process by method of construction, understanding of quantity takeoff, factors to decide construction period and usage of scheduling software, etc.
3	ARE461	Architectural Materials Design	Design of Construction Materials introduces components, structure, quality improvement, test method and application of various construction materials through experiments and provides students with opportunities to renew their perception towards advanced contemporary construction materials.
4	ARD321	History of Western Architecture	History of Western Architecture introduces history of western architecture from ancient Egypt to Greece, Rome, Paleochristian and Byzantine, Romanesque and Gothic. This course uses audio-visual textbook to explore architectural style of different times and how they're related to history.
5	ARE831	Specialized Construction Techniques	Convergence Construction Technology introduces concept and principles of fast-evolving construction materials and latest construction techniques This course provides seminar-based lectures and invitational lectures by market experts to review the latest technologies in the construction industry.
6	ARE830	Special Construction Method	Special Construction Method introduces concept and principles of fast-evolving new construction materials and the latest construction methods. This course also runs survey on the latest construction technologies and provides seminar-based lectures that include invitational lecture from construction market experts.

● General Education

No	Couse Code	Course name(Korean)	Description
1	BSM120	Calculus Ⅱ	Calculus II is a follow-up course to Calculus I. This course deals with differential and integral calculus for vector and multivariate functions.
2	BSM170	Linear Algebra	Linear Algebra is the study of simultaneous equations, matrix, calculation of determinants, vector space, characteristic value and characteristic vector, etc.
3	BSM180	Discrete Mathematics	Discrete Math introduces various discrete structures associated with electronic calculation from a mathematical point of view. Specific learning cotents include law of redundancy, permutations and combinations, binomial coefficients, inclusion-exclusion principle, recurrence equation, generating function, graph theory, planar graph/coloring/tree, directed graph, finite state device and propositional calculus.
4	BSM311	General Physics and Experiments I	As an introductory level students learn the principles of nature and learn how to apply them in various engineerings. It contains Newtonian Mechanics, Fluid Mechanics Oscillations and Wave Theory, Gas Dynamics, Thermodynamics, and related experiments in the laboratory.
5	EDU535	Lifelong Competency Developmen	Lifelong Ability Development offers definition and concept of lifelong ability development as the course name indicates. This is quite a fitting course in today's world of career life where self-development and ability development are more crucial than ever.
6	LAN481	Introduction to Linguistics	This course is an introduction to linguistics. We will focus on the study of basic language structures, including how words combine into sentences, how morphemes are conjoined with prefixes and suffixes and words, how phonemes are pronounced differently depending on their given environments, how deep and surface structures are connected, and so forth. This course will also provide an introduction to the more advanced issues relating to language change and language acquisition.

7	SHA941	Korean people and society	Koreans and Korean Society is an English-speaking course for foreign students to learn about Koreans and Korean culture. This course views Korean from the angle of foreigners who have settled in the Korean society and provides glimpse into Koreans from all walks of life who have earned recognition from the international community. This course is open to Korean students, too.
8	BSM191	Ordinary Differnetial Equation	Differential Equation introduces concept of differential equation, mathematical modeling and classification and application of differential equations.
9	BSM112	Calculus I	Calculus I covers differential and integral calculus of univariate functions, application of differential and integral calculus and power series.
10	EDU480	Self Development Seminar	Self-Development Seminar helps create a positive self-conception, and set one's goal in life, human relationship and time management, among others, with the goal to experience positive changes in oneself. This is an interdisciplinary course that involves discussions, presentations, reading, team projects and special lectures.
11	BSM561	Programming and Practice	Programming and Practice introduces grammar of programming language based on which students learn to develop programs.