

# Dongguk University Exchange Program Factsheet



A. GENERAL INFORMATION		
<b>Name of Institution</b>	Dongguk University	
<b>Country</b>	South Korea	
<b>Incoming and Summer/Winter School</b>	Name of Unit	International Relations
	Name of Coordinator	Soonbin Hong
	Address	30, 1 gil, Pildong-ro, Jung-gu, Seoul, 100-715, Korea
	Telephone	(+82)2-2260-3463
	Fax	(+82)2-2260-3878
	Email	<a href="mailto:incoming@dongguk.edu">incoming@dongguk.edu</a> (for applicants) <a href="mailto:hsb321@dongguk.edu">hsb321@dongguk.edu</a> (for partner universities)
<b>Outgoing and Summer/Winter School</b>	Name of Unit	International Relations
	Name of Coordinator	Sejin Kwon
	Address	30, 1 gil, Pildong-ro, Jung-gu, Seoul, 100-715, Korea
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<b>Relevant Website</b>	Institute	<a href="http://www.dongguk.edu/mbs/en/index.jsp">http://www.dongguk.edu/mbs/en/index.jsp</a>
	Exchange program	<a href="http://www.dongguk.edu/mbs/en/subview.jsp?id=en_040601020000">http://www.dongguk.edu/mbs/en/subview.jsp?id=en_040601020000</a>
<b>General background</b>	Dongguk University Seoul Campus Founded in 1906 13 Colleges 66 Undergraduate Programs	

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	136 Graduate Programs	
<b>Type of Institution</b>	Private / Comprehensive University	
<b>Location and Campus Map</b>	<a href="http://www.dongguk.edu/mbs/en/subview.jsp?id=en_010600000000">http://www.dongguk.edu/mbs/en/subview.jsp?id=en_010600000000</a>	
<b>Campus</b>	Main Campus: Seoul Campus Bio-Medi Campus: Ilsan Campus (College of Life Science and Biotechnology)	
<b>Student Enrollment (As of 2020 Spring)</b>	Total no. of students	Undergraduate: 13,944 Graduate: 3,595
	No. of international/ exchange students	Around 1,549 / 35

## B. ACADEMIC INFORMATION

Academic Calendar (Subject to change) (yyyy-dd-mm)	Information	2021-Spring	2021-Fall
	Residence Hall Check In	2021.02.(TBA)	2021.08.(TBA)
	Residence Hall Check Out	2021.06.(TBA)	2021.12.(TBA)
	Expected Orientation Date	2021.02.(TBA)	2021.08.(TBA)
	Semester starts	2021.03.02	2021.09.01.
	Semester ends (Vacation starts)	2021.06. (MBA Course:TBA) <i>*The semester could end later than the above date if a professor wanted to make up for a missing class.</i>	2021.12. (MBA Course: TBA) <i>*The semester could end later than the above date if a professor wanted to make up for a missing class.</i>

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<b>Language of Instruction</b>	English and Korean	
<b>Course Information</b>	<p>Please see sheet 3,4</p> <p>※ Please note that the courses on the list are taught in English, but opened in last semesters. Since the fixed course list opened in coming semester is usually released a month before the semester starts, student must get approval with the previous course list first.</p> <p>※ If student needs course description, please have them contact us via email(incoming@dongguk.edu) with course code and title.</p> <p>※ Film courses are only open to the students from following major: <b>Film, Cinema, Fine arts, Multimedia, Audiovisual, Communications</b></p>	
<b>Study Duration</b>	One semester / One academic year (Students can choose)	
<b>Study Load for exchange students per Semester</b>		<b>No. of credits / Courses per semester</b>
	<b>Minimum study load</b>	9 credits / 3 course
	<b>Maximum study load</b>	18 credits / 6 courses
	<p>※ Kindly guide your students with study load on your standard</p> <p>※ In Dongguk University, the normal load for graduate students are 6-9 credits and undergraduate students are 15-18 credits</p>	
<b>C. APPLICATION</b>		
<b>English Proficiency Requirements</b>	Students are not required to provide proof of English Test Result, but they have to have English skills to take courses taught in English	
<b>Online Application</b> ※ Application is only acceptable during the following on-line application period.	<a href="http://diss.dongguk.edu/applyex/apply.html">http://diss.dongguk.edu/applyex/apply.html</a>	

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<b>Required documents to be uploaded</b>	Official academic transcript A copy of passport Passport-sized photo Insurance Copy(Optional)		
<b>Nomination/Application Period</b>	<b>Semester</b>	<b>Nomination</b>	<b>On-line Application</b>
	2021 Spring Semester	2020.10.01. ~ 2020.11.15.	2020.10.01. ~ 2020.11.30.
	2021 Fall Semester	2021.04.01. ~ 2021.05.15.	2021.04.01. ~ 2021.05.31.
	The "Nomination Form" should be send to the international office of Dongguk University by the coordinator of the partner university via email ▶ "Nomination Form"can be found at the following website ; <a href="http://www.dongguk.edu/mbs/en/subview.jsp?id=en_040601020000">http://www.dongguk.edu/mbs/en/subview.jsp?id=en_040601020000</a>		
	In 2021 Spring Semester nomination & application period, we will receive the students who are going to start to study in 2021 Spring Semester(6 months or 1 year). Also, we will receive nomination and application of students who are going to start to study from 2021 Fall Semester during the 2021 Fall Semester nomination & application period.		
The admission letter will be sent to the international office of the applicants' home university by the end of June for the Fall semester (the end of January for the spring semester)			
<b>D. ACCOMODATION</b>			
<b>Type of accommodation</b>	On-campus Dormitory - Chungmu Residence Hall, Goyang Residence Hall(Only for the college of Life Science and Biotechnology students who are going to study in Ilsan campus) Students can choose to live On-campus Dormitory. Also, they can choose to find their accommodation(self-prepared place).		
<b>Estimated Accommodation Fee per semester</b>	varied by room type		
<b>Application</b>	Students can apply via online application above		
<b>E. SCHOLARSHIP</b>			

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Global Top University Scholarship	The nominees who are from the university within QS 1~200 ranks can be granted the global top university scholarship through Dongguk University's assessing process. The QS ranking will be referred from QS ranking website( <a href="https://www.topuniversities.com/university-rankings/world-university-rankings/2021">https://www.topuniversities.com/university-rankings/world-university-rankings/2021</a> ). The scholarship will be granted for only <b>one semester, 4 months(Mar~Jun or Sep~Dec)</b> . <b>This scholarship will be granted to students who are applying the exchange program from 2021 Spring Semester.</b>		
	<b>QS Ranking</b>	<b>The amount of scholarship</b>	<b>Dormitory fee</b>
Global Top 100 Scholarship	1 ~ 100	KRW 400,000 (per month)	The dormitory fee will be exempted for female students. Male students have to pay the dormitory fee.
Global Top 200 Scholarship	101 ~ 200	KRW 200,000 (per month)	Students have to pay the fee.
<b>F. MISCELLANEOUS</b>			
<b>ESTIMATED Living Expenses (for reference only)</b>	Books	KRW 150,000 (per month)	
	Meal	KRW 350,000 (per month)	
	Local Public Transportation	KRW 40,000 (per month) (KRW1,200-KRW1,800 for one way trip by metro per times)	
<b>Fee</b>	International Exchange Student Fee	KRW50,000/semester * Dongguk requires all exchange students to pay mandatory International Exchange Student Fee upon their arrival * For year-long students, KRW50,000 will be charged for the first semester and KRW50,000 for the second semester * This fee also applies to all international exchange students from bilateral agreement partner university	

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<p style="text-align: center;"><b>Visa Application Procedures</b></p>	<p>▶ Visa for Regular Educational Program (D-2) All international students to study in Korea should hold a student VISA (D-2), which can be applied for and obtained at the nearest Korean Embassy or Consulate in their home country.</p> <p>▶ How to apply for visa &amp; application requirements How to apply Applicant submits visa application documents to an embassy or consulate</p> <p>▶ Required Documents A completed Visa application A recent passport photo (3.5 x 4.5cm, colour photo) Passport (Original) <b>Certificate of Admission (Official Letter from Korea)</b> Certificate of the Current or Last School Attended Documents proving Financial Affordability</p> <p><b>※ Students are advised to contact Korean consulate in their home country for more detailed information</b></p>
<p><b>Student support service</b></p>	<p>Student Buddy Program (Dongguk BUD)</p>
<p><b>Korean Language Program</b></p>	<p>* Intensive Korean Language Program : Only open for the students who are in <b><u>intermediate or advanced level for Korean Language (level 2-5)</u></b> The course is very intensive which is held for 10 weeks (4hours every day). The tuition fees are originally KRW1,650,000 per quarter, but we give a <b><u>30% discount</u></b> for exchange students who are in intermediate and advanced level for Korean Language.</p> <p>* Please, kindly be noted that the discount rate will change from 90% to <b><u>30%</u></b> from the 2020-2 Fall semester.</p> <p>* Website : <a href="https://interlangen.dongguk.edu/">https://interlangen.dongguk.edu/</a></p>

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## Health Insurance

It is required for exchange student to register health insurance in their home country and send a copy of the policy showing his/her name before their arrival. The documents must be accompanied with an English translation if it is not in English. The insurance plan should cover the medical expenses of death occurrences or getting handicapped.

Please be advised that insurance should cover followings:

- Accident Death/Permanent Handicap/Medical Expenses
- Sickness Medical Expenses
- Special Expenses (Medical Evacuation and Repatriation)

## Exchange Student Housing Information

### CHUNGMU RESIDENCE HALL ([http://dormcm.dongguk.edu/?page\\_id=243](http://dormcm.dongguk.edu/?page_id=243))

Address	Chungmu Residence Hall, 4th floor, Chungmuro Media Center, 2, Toegye-ro 36 gil, Jung-gu, Seoul, 04626 , Korea
Room Type	Four bed room or Six bed room (shared bathroom & shower room)
Built-in	Desk, Bed, A/C, Small wardrobe
Payment	Semester basis (Paying 4-month fee at once)
Estimated Room Rate/semester per person	four bed room-around 1,000,000KRW / six bed room : around 750,000KRW (for four months)
Key Points	1. Located near Chungmuro Station
	2. Chungmu Residence Hall is VERY strict on its rules.
	3. If you break any of the rules of the Residence Hall, you will get penalty points. If you have more than 20 penalty points, you will be removed from the residence hall during the semester
	4. Curfew is 12 am and permission for sleep-out is required in advance
	5. Shared-laundry room. (with whole residents)
	6. Cooking is not available in Chungmu Residence Hall.
	7. Payment is to be made upon arrival in Korea
	8. Chungmu Residence Hall is only available to stay for a semester-long(plus vacation period) Students studying at Dongguk for a year-long should find different housing for her/his second semester at Dongguk

\* Room rate is estimated so, it is subject to change.



## 2020-1 Course Description

Year	Semester	Level of Study	Course Code	Code Number	Course Name	Course Description
2020	1	Undergraduate	ACG2007	02	Financial Accounting	This course assumes that the students have already taken the class covering the principles of accounting or otherwise, fully understand the basic principles and concepts of accounting. It focuses on the principles and techniques of preparing financial statements including the statement of cash flows. The revenue recognition rules for special transactions are also discussed.
2020	1	Undergraduate	ACS2005	02	Understanding Film Production	Students will learn all phases of pre-production, production and postproduction. Students work in small teams on focused short projects. Each team will finish a short video. Open to Film major only, Freshman (Offered spring semester.) 3 credits
2020	1	Undergraduate	ADV2016	01	Korean Public Communication Campaign	This course is intended to teach persuasion, behavioral change and social marketing theories critical to public communication campaign development and go over award-winning public communication campaign cases.
2020	1	Undergraduate	ADV4017	01	Advertising Campaign Studies	This course analyzes advertising campaign based on advertising theories from prerequisites and sheds light on strategic implications for successful advertising campaign planning.
2020	1	Undergraduate	ADV4020	01	International Public Relations	Learn about public relations as a professional practice conditioned by macro-national variables such as culture, the political system, the media system, the levels of economic development and activism. Learn about how these macro factors produce variations in the ways public relations is practiced across the world.
2020	1	Undergraduate	ARC2013	01	Creative Engineering Design	Course addresses such fundamental processes and techniques as creating idea, brainstorming, expression of idea, and decision making for engineering design. Themes focus upon the issues of construction engineering projects. There are individual and group assignments.
2020	1	Undergraduate	ARC2015	01	Strength of Materials	This lecture introduces fundamental concepts such as stresses/strain, deformations/displacements, elasticity/inelasticity, strain energy, and load—carrying capacity. These concepts will contribute to the constitution of professional knowledge required for analysis and design of various mechanical and structural systems.
2020	1	Undergraduate	ARC2020	01	Structural Mechanics of Buildings I	This lecture will emphasize the principles and analytical method of the statically determinate structure, based on the practical reinforced and steel framed building. The focus will be on force and displacement, which are the major analytical issues in the nonlinear member analysis as in the case of buildings with large members. However, stress and strain, which are critical in the linear small scale structure (as in the curriculum of material mechanics and elasticity in the area of mechanical engineering), will be excluded. The free-body diagram, which layout the force and displacement of each element of the structures, will be examined closely in order to increase students' understanding of the topics.
2020	1	Undergraduate	ARC2024	01	Architectural Thermal Environment Engineering	This subject makes students learn the efficient planning methods and control system based on architectural environment factors. Therefore, it includes the control methods of environmental factors such as thermal environment which have a direct effect on the buildings.
2020	1	Undergraduate	ARC4046	01	Structural Analysis of Buildings	In this course, structural analysis method using computers is provided. Students will examine the basic concepts and skills required to analyze real buildings under prescribed force systems using well developed computer programs. In addition, an introduction of design of analysis programs will be given.
2020	1	Undergraduate	ARC4061	01	Construction Project Management	The roles and responsibilities of construction management firm covers from the initiation of a construction project to hand-over the completed building(facility). In particular, the roles and responsibilities vary according to the phase of a project progress; pre-design, design, bidding, construction, testing and hand-over. In this course, time, cost, quality, safety and other required management elements will be addressed and discussed.
2020	1	Undergraduate	ARD2010	01	Visual Representation	One of the primary roles of contemporary designers is to organize and employ intangible information for effective communication. The course will introduce students into the practice of communication skills and organization techniques using narrative texts, photographic description, image processing, video-clip editing, geometric modeling, cartographic mapping, etc.
2020	1	Undergraduate	ARD2010	02	Visual Representation	One of the primary roles of contemporary designers is to organize and employ intangible information for effective communication. The course will introduce students into the practice of communication skills and organization techniques using narrative texts, photographic description, image processing, video-clip editing, geometric modeling, cartographic mapping, etc.
2020	1	Undergraduate	ARD2013	01	Social Syntax and Configuration	Comprehensive studies on procedures of development of social syntax in architectural change and on historical reflection on the various constraints of politics, culture, society and economy.
2020	1	Undergraduate	ARD4002	01	Environmental Controls of Buildings	On recognition of the criticism of the modernism in architecture, the class deals with the passive approach for the building design. On the contrast to the attitude to excessive use of glass and buildings as 'object' per se, it lays emphasis on the more practical way to environmental controls of buildings especially for the architect.
2020	1	Undergraduate	ARD4037	01	Urban Design and the Built Environment	An introductory lecture for the field of physical planning and design of contemporary cities and regions, with a series of overview of urban design vocabularies and theoretical framework of environmental design principles.
2020	1	Undergraduate	ARD4039	01	Practice of Architecture	The subject is concerned with the architectural profession in the west and Korea and especially with the modern societal context, covering project management, design office management, professional ethics, and legal framework of architectural practice.
2020	1	Undergraduate	BES2006	01	Environmental Chemistry	Sources, reactions, transport, effects and fates of chemical species in soils and associated water and air environments. Emphasis on the chemical behavior of elements and compounds and the phenomena affecting natural and anthropogenic materials in soils.
2020	1	Undergraduate	BES4003	01	Endemic and Domestic Plants	This course examines the morphological structure, physiological and taxonomic characters of environmental plants. The main goal is to develop a scientific way of thinking about biological diversity rather than attempting to memorize the history of living things. The course concentrates on the major areas of conservation of biological diversity, proliferation of rare and endangered species and introduction of high valued exotic species. The course explains how to protect endemic species out of countries. Emphasis is on global issues on conservation of biological diversity and sustainable use on global deliberation and intervention.
2020	1	Undergraduate	BES4005	01	Plant Biotechnology	This lecture provides basic comprehension and knowledge including plant gene, life system, gene functions, and principle of plant biotechnology and their applications such as molecular breeding and genetic transformation. Students will learn about the advanced application strategies of plant biotechnology such as abiotic stress resistant plants and molecular farming. Furthermore, we will learn about the Korean domestic and foreign medicinal & herb plants, that have been used as the materials of functional foods, oriental medicine, and pharmacy, and discuss about their bio-diversities, physiological characteristics, and importances of collection and preservation.
2020	1	Undergraduate	BES4030	01	Environmental Effects Evaluation Capstone Design	Environmental effects evaluation is the study of general theory of environmental impact assessment system. It gives a lecture about prediction and evaluation method from each field and analysis method of environmental data with real example. Students also learn making a environmental effects evaluation reports, consultation and post management.
2020	1	Undergraduate	BES4038	01	Particulate matter	This course introduces atmospheric ammonia emissions from the natural environment including agricultural practices: animal manure waste composting facilities, animal feeding operations, fertilizer spraying activity in land field. Students can calculate the total mass quantification of precursor incorporation from the inventory of ammonia, SO <sub>x</sub> , NO <sub>x</sub> in Clean Air Policy Support System (CAPSS).
2020	1	Undergraduate	BIO4019	01	Molecular Biology	Characteristics of nucleic acids and proteins at the molecular level are studied and molecular biological techniques are introduced. Gene structure as well as regulation of gene expression are reviewed in detail.
2020	1	Undergraduate	BIO4020	01	Animal Physiology and Lab	Animal Physiology is the study of the mechanical, physical, and biochemical functions of living organisms. The field of animal physiology extends the tools and methods of human physiology to non-human animal species. The scope of animal physiology mainly focuses on the underlying mechanisms how the structures and functions of the nerve systems, digestion systems, respiratory systems, and circulatory systems (team project).
2020	1	Undergraduate	BIO4024	01	Immunology	Immunology is the study of the physiological mechanisms that human and other animals uses to defend themselves from invasion and other organisms. This class will discuss various aspects of immune system including the area of cell biology, biochemistry, and microbiology to introduce how the complex defense network are coordinated in an efficient manner. The class will provide further understanding of many medical problems related with a disorder in the immune system.
2020	1	Undergraduate	BIO4028	01	Evolutionary Biology	Evolutionary Biology is concerned with the origin of species from a common descent, and descent of species; as well as their change, multiplication, and diversity over time.
2020	1	Undergraduate	BIO4035	01	Proteomics	Proteomics is the study of the proteome which refers to the entire set of expressed proteins in a cell's genome. Proteomics encompasses an effort to catalog and determine the functions of all proteins in a cell.
2020	1	Undergraduate	BME2029	01	Biomedical Programming 1	This course develops the ability to apply computer programming techniques to various biomedical fields.
2020	1	Undergraduate	BME4013	01	Chemical Biology	Application of chemical techniques and tools to the study and manipulation of biological systems.
2020	1	Undergraduate	BME4018	01	Tissue Engineering	The purpose of this curriculum is learning a method of manufacturing for the bioartificial tissues and organs.
2020	1	Undergraduate	BME4031	01	Biomedical Laboratory	This course offers an introduction to understand a basic principle of various bio-signals, such as electromyography (EMG), electrocardiography (ECG) and to estimate them via a laboratory experiment.
2020	1	Undergraduate	BME4045	01	MEMS and Sensor engineering	This course offers principles, terminology and fabrications of MEMS based sensor for diagnosis and to get the forecast about next generation of biosensor.
2020	1	Undergraduate	BME4046	01	Regenerative Medicine I	For regenerative medicine, we will study various recent technologies as well as emerging integrated technologies to enhance cell and tissue therapeutic effect.
2020	1	Undergraduate	BME4049	01	Biomolecular Biology	The process of cultivating the basic skills necessary for medical biotechnology by acquiring the cellular, biochemical and molecular biological levels for the overall functional understanding of biological activities.

2020	1	Undergraduate	BME4053	01	Digital Diagnostic Imaging System	This course offers an introduction to understand the principles of advanced biomedical instruments for diagnosis and treatment based on digital technology.
2020	1	Undergraduate	CEN2026	01	Material Engineering	This course deals with the structures, the properties and their relationship of various materials such as metals, ceramics and polymers utilized in many industries. The lecture contents include not only basic theories for the structures and the properties of those materials but principles and examples of their applications in many industries.
2020	1	Undergraduate	CEN2034	02	Introduction to Chemical Engineering Thermodynamics	This course concerns applications of thermodynamics law to chemical engineering. There will be study of thermo-characteristics of fluids, expansions, compression and refrigerations, phase equilibrium, chemical equilibrium, and thermodynamical analysis of chemical processes.
2020	1	Undergraduate	CEN4039	02	Chemical Reaction Engineering	The topics to be discussed in this class are kinetics of homogeneous single reactions, ideal reactors (batch, stirred tank, and flow system), conversions and yield in multiple reactions, design and optimization of reactors, non-ideal reactors (the effects of residence, fine distribution and mixedness), heterogeneous nonanalytic reaction (gas-liquid, liquid-liquid, and solid-fluid system), heterogeneous catalytic reactions, and time dependent system (catalyst deactivation).
2020	1	Undergraduate	CEN4046	01	Colloid Science and Engineering	In research, technology and manufacture countless process are encountered which fall squarely within the scope of colloid and surface chemistry. First, a broad description of the scope of colloid and surface chemistry and kinds of variables with which they deal are presented with some illustrative examples. Preparation, characterization, and stability of colloids (emulsions, aerosols, and other multiphase dispersions) and techniques for determining particle size, shape, orientation, and charge of particle are introduced. Next, thermodynamics of interfacial tension and adsorption, and interparticle forces (electrical double layer, vander Waals attraction, and kinetics of coagulation) which are important in understanding interfacial phenomena are briefly presented. Finally, different specific phenomena related to colloid and surface chemistry such as capillary and wetting phenomena, adsorption, electrophoresis and other electrokinetic phenomena are discussed.
2020	1	Undergraduate	CEN4050	02	Fluid Mechanics in Chemical Engineering	This course discusses Newtonian and non-Newtonian, laminar and turbulent flow, and drag force followed by makings mass, energy and momentum balances. Various methods to solve several problems in fluid mechanics using balance equations will be introduced and practiced.
2020	1	Undergraduate	CEN4056	02	Chemical & Biochemical Design 1	Students are given assignments to solve all-around process designing problems of chemical and biochemical engineering area with making a team.
2020	1	Undergraduate	CHE4046	01	Biochemistry	This course aims to understand physical and chemical properties of biomacromolecules such as nucleic acids, proteins, polysaccharides, and lipids, and study their interactions and reaction mechanisms in cells.
2020	1	Undergraduate	CHI2014	01	Intensive Chinese	This course provide an opportunity of intensive training in the modern Chinese language in order to develop the ability to comprehend both reading and listening.
2020	1	Undergraduate	CHI2034	03	Chinese Conversation for majors 1	This course is for students who majoring in Chinese literature, and it aims at basic understanding of grammar and typology of classical Chinese through reading selected basic sentences.
2020	1	Undergraduate	CHI4026	01	Modern chinese on current affairs	This course focuses on readings of Chinese newspapers and magazines, which will improve skills of reading papers on current affairs in Chinese. Further, it will make it possible to have discussions in Chinese.
2020	1	Undergraduate	CHI4031	01	Practice in Chinese Composition	This course has students practice writing in Chinese, covering from a single sentence to long stories.
2020	1	Undergraduate	CHI4073	01	Practical Grammar of Modern China	By studying major Chinese grammar theories, we systematically understand grammar and apply it to improve Chinese reading, conversation and writing skills.
2020	1	Undergraduate	CIV2005	01	Applied Mechanics	Elementary course for engineering applications of statics. Principles and applications of statics theory: vector, equilibrium equation of idealized rigid bodies and simple structures. Emphasizes the concept of free-body diagrams. Examples with applications in structural engineering.
2020	1	Undergraduate	CIV2031	01	Environmental Chemistry	In this class, the chemical and biochemical phenomena which occur in nature will be studied. This class covers source, reaction, transport and impact in air, soil and water environment and categorizes pollutants and introduces some indicators which assess the health of the environment. Also, environmental problem solutions are introduced.
2020	1	Undergraduate	CIV2036	01	CAD and Graphics	TBA
2020	1	Undergraduate	CIV4005	01	Structural Analysis	Analysis of determinate structures: reactions; axial forces; shear forces; bending moments; and deflections. Analysis of indeterminate structures: method of consistent deformations; Castigliano theory; slope-deflection method; and moment distribution method.
2020	1	Undergraduate	CIV4008	01	Design of Steel Structures	Mechanical properties of structural steels. Connection of structural members using welding and high-strength bolts. Basic theories needed for design of various types of structural members. Design of steel bridges.
2020	1	Undergraduate	CIV4020	01	Introduction Construction Project Management	This course provides an introduction to basic construction management concepts and techniques to properly manage construction projects. Value engineering, life-cycle costing, scheduling, cost control, and other related topics are covered in this course.
2020	1	Undergraduate	CIV4041	01	Foundation Engineering	Bearing capacity and settlement analyses for mat foundation and pile foundation, design of excavated soil walls, foundation in various untypical soils, soil improvement methods are reviewed.
2020	1	Undergraduate	CIV4061	01	Reinforced Concrete	Study of the strength, behavior, and design of reinforced concrete members subjected to moments, shear, and axial forces; extensive discussion of the influence of the material properties on behavior.
2020	1	Undergraduate	CIV4066	01	Water Treatment Plant Engineering and Experiment	This lecture is composed of water resources management, designing water treatment plants, principle of water treatment unit processes, theory and practices of water treatment system, and processes of drainage treatment system by physical, chemical, and biological methods. This course will help you acquire an extensive knowledge of water quality management and water treatment plants.
2020	1	Undergraduate	CIV4071	01	Geotechnical Engineering and Disaster Prevention	This course will provide students with the fundamentals of geotechnical earthquake engineering and rainfall-induced landslides and the techniques used to prevent the damages caused by the natural disasters.
2020	1	Undergraduate	COS4015	01	Political Communication	This course is designed to study the maintenance and change of political systems and political procedures from the view of communication. The content of the course focuses on the theories in relation to the content of political messages, the change of political attitudes, the interrelationship between polling styles of voters and communication, and the relationship between states and media. The course also examines the phenomena and problems of political commercials, political debates, and cyber politics.
2020	1	Undergraduate	COS4024	01	Persuasion & Campaign	How to develop a campaign proposal to meet a client's business objectives and how to pitch it.
2020	1	Undergraduate	CSE2017	01	Data Structure	This course introduces data structures and algorithms to solve problems by computers in an effective way. Students learn and practice the methods to implement these with a programming language. Topics include arrays and linked lists, structures such as stacks, queues, trees, graphs, and various methods for searching and sorting of data.
2020	1	Undergraduate	CSE4066	01	Computer Engineering Capstone Design 1	This class deals with the engineering design problem which is defined as the process of devising a system, component, or process to meet the desired needs. Among the fundamental elements of design process, the establishment of design objectives and criteria, researches on the previous works, idea making, analysis, presentation for the design proposal, and collaborative design are focused in this course. Students form a team and work on a project throughout the semester.
2020	1	Undergraduate	CSE4066	02	Computer Engineering Capstone Design 1	This class deals with the engineering design problem which is defined as the process of devising a system, component, or process to meet the desired needs. Among the fundamental elements of design process, the establishment of design objectives and criteria, researches on the previous works, idea making, analysis, presentation for the design proposal, and collaborative design are focused in this course. Students form a team and work on a project throughout the semester.
2020	1	Undergraduate	CSE4066	03	Computer Engineering Capstone Design 1	This class deals with the engineering design problem which is defined as the process of devising a system, component, or process to meet the desired needs. Among the fundamental elements of design process, the establishment of design objectives and criteria, researches on the previous works, idea making, analysis, presentation for the design proposal, and collaborative design are focused in this course. Students form a team and work on a project throughout the semester.
2020	1	Undergraduate	CSE4066	04	Computer Engineering Capstone Design 1	This class deals with the engineering design problem which is defined as the process of devising a system, component, or process to meet the desired needs. Among the fundamental elements of design process, the establishment of design objectives and criteria, researches on the previous works, idea making, analysis, presentation for the design proposal, and collaborative design are focused in this course. Students form a team and work on a project throughout the semester.
2020	1	Undergraduate	CSE4067	01	Computer Engineering Capstone Design 2	This class deals with the engineering design problem which is defined as the process of devising a system, component, or process to meet the desired needs. Continued with the Computer Engineering Capstone Design 1 course, the implementation of detailed system components and their integration, testing, presentation of the design report, engineering ethics are done during this course with team members.
2020	1	Undergraduate	DBA2001	03	Principles of Management	The purpose of this course is to provide students with the theories, knowledge, and ideas required to succeed in managing today's organizations. There are many methods to approach management, including the topics approach, management process approach, and business functions approach, but the "systems approach", the most comprehensive method, will be used in this course. Main contents consist of foundations in management, entrepreneur and macromanagement, corporate strategy, organization theory, human resource management, and vision management. Moreover, students will compare issues of other countries with those of Korea.
2020	1	Undergraduate	DBA2002	01	Organizational Behavior	The purpose of this course is to understand how companies have developed unique characteristics and what issues are critical to the management of organizations. In this course, students learn individual, group, and organizational context issues such as individual differences, teamwork, communication, and leadership that significantly affect an organizational competitiveness. Throughout this course, students are expected to make active participations in class discussions and exercises.

2020	1	Undergraduate	DBA2002	02	Organizational Behavior	The purpose of this course is to understand how companies have developed unique characteristics and what issues are critical to the management of organizations. In this course, students learn individual, group, and organizational context issues such as individual differences, teamwork, communication, and leadership that significantly affect an organizational competitiveness. Throughout this course, students are expected to make active participations in class discussions and exercises.
2020	1	Undergraduate	DBA2002	03	Organizational Behavior	The purpose of this course is to understand how companies have developed unique characteristics and what issues are critical to the management of organizations. In this course, students learn individual, group, and organizational context issues such as individual differences, teamwork, communication, and leadership that significantly affect an organizational competitiveness. Throughout this course, students are expected to make active participations in class discussions and exercises.
2020	1	Undergraduate	DBA2002	06	Organizational Behavior	The purpose of this course is to understand how companies have developed unique characteristics and what issues are critical to the management of organizations. In this course, students learn individual, group, and organizational context issues such as individual differences, teamwork, communication, and leadership that significantly affect an organizational competitiveness. Throughout this course, students are expected to make active participations in class discussions and exercises.
2020	1	Undergraduate	DBA2004	02	Financial Management	Financial Management is the introductory course that deals with financial decision making based on the time value of money and the risk and return. This course also covers fundamental issues in corporate finance such as capital budgeting and capital structure, and in investments such as capital asset pricing model and valuation of stocks and bonds.
2020	1	Undergraduate	DBA2004	03	Financial Management	Financial Management is the introductory course that deals with financial decision making based on the time value of money and the risk and return. This course also covers fundamental issues in corporate finance such as capital budgeting and capital structure, and in investments such as capital asset pricing model and valuation of stocks and bonds.
2020	1	Undergraduate	DBA2006	02	Principles of Management Information System	This course examines topic and issue related to developing and implementing information technologies in business environment. It covers the concept of management information system, technological issue, business data communication, application of information systems, and development of information system in organization. The course covers recent technical issues and relevant references in addition to a textbook.
2020	1	Undergraduate	DBA2006	03	Principles of Management Information System	This course examines topic and issue related to developing and implementing information technologies in business environment. It covers the concept of management information system, technological issue, business data communication, application of information systems, and development of information system in organization. The course covers recent technical issues and relevant references in addition to a textbook.
2020	1	Undergraduate	DBA2006	04	Principles of Management Information System	This course examines topic and issue related to developing and implementing information technologies in business environment. It covers the concept of management information system, technological issue, business data communication, application of information systems, and development of information system in organization. The course covers recent technical issues and relevant references in addition to a textbook.
2020	1	Undergraduate	DBA2009	01	Business English Debate 1	Business English/Business Debate is an English language course catering to students at the business school. The course objective is to prepare students to be able to confidently and successfully function in a business English environment, critically assessing business issues and navigating business challenges in English. Students will develop and practice core business English skills in a realistic environment, through a combination of textbook and project-based activities.
2020	1	Undergraduate	DBA2010	01	Business English Debate 2	Business English/Business Debate is an English language course catering to students at the business school. The course objective is to prepare students to be able to confidently and successfully function in a business English environment, critically assessing business issues and navigating business challenges in English. Students will develop and practice core business English skills in a realistic environment, through a combination of textbook and project-based activities.
2020	1	Undergraduate	DBA2013	03	Operations Management	This course introduces students to problems and analysis related to the design, planning, control, and improvement of manufacturing and service operations. Broadly speaking, Operations Management concerns the processes by which work and resources are directed toward the achievement of strategic objectives. It thus requires a fundamental understanding of organizational strategy, processes, and resources. Coverage will attempt to balance theory and applications, with an emphasis on "best practices".
2020	1	Undergraduate	DBA2013	04	Operations Management	This course introduces students to problems and analysis related to the design, planning, control, and improvement of manufacturing and service operations. Broadly speaking, Operations Management concerns the processes by which work and resources are directed toward the achievement of strategic objectives. It thus requires a fundamental understanding of organizational strategy, processes, and resources. Coverage will attempt to balance theory and applications, with an emphasis on "best practices".
2020	1	Undergraduate	DBA2017	01	Principles of Marketing(NCS)	The course aims to explore the primary components, principles, and practices of the marketing processes. It is designed to examine how marketing functions as an important part in firms, organization, and society. In the course, students will have an opportunity to be exposed to the major areas of marketing including consumer behavior, marketing research, marketing strategies, product development, marketing channel distribution, and marketing communication strategies.
2020	1	Undergraduate	DBA2017	02	Principles of Marketing(NCS)	The course aims to explore the primary components, principles, and practices of the marketing processes. It is designed to examine how marketing functions as an important part in firms, organization, and society. In the course, students will have an opportunity to be exposed to the major areas of marketing including consumer behavior, marketing research, marketing strategies, product development, marketing channel distribution, and marketing communication strategies.
2020	1	Undergraduate	DBA2017	03	Principles of Marketing(NCS)	The course aims to explore the primary components, principles, and practices of the marketing processes. It is designed to examine how marketing functions as an important part in firms, organization, and society. In the course, students will have an opportunity to be exposed to the major areas of marketing including consumer behavior, marketing research, marketing strategies, product development, marketing channel distribution, and marketing communication strategies.
2020	1	Undergraduate	DBA2017	04	Principles of Marketing(NCS)	The course aims to explore the primary components, principles, and practices of the marketing processes. It is designed to examine how marketing functions as an important part in firms, organization, and society. In the course, students will have an opportunity to be exposed to the major areas of marketing including consumer behavior, marketing research, marketing strategies, product development, marketing channel distribution, and marketing communication strategies.
2020	1	Undergraduate	DBA2017	05	Principles of Marketing(NCS)	The course aims to explore the primary components, principles, and practices of the marketing processes. It is designed to examine how marketing functions as an important part in firms, organization, and society. In the course, students will have an opportunity to be exposed to the major areas of marketing including consumer behavior, marketing research, marketing strategies, product development, marketing channel distribution, and marketing communication strategies.
2020	1	Undergraduate	DUF2002	01	Introduction to Social Science	The goal of this course is to help students explore the fundamental knowledge and theory of modern society. This is an introductory level class designed to address the crucial facts of social science. More importantly, this class aims at providing useful tips and information regarding successful academic life for freshmen. Therefore, first year students who are interested in Social Science field are expected to participate in this class more assertively in order to become a smart and energetic freshmen in Dongguk University.
2020	1	Undergraduate	DUF2002	02	Introduction to Social Science	The goal of this course is to help students explore the fundamental knowledge and theory of modern society. This is an introductory level class designed to address the crucial facts of social science. More importantly, this class aims at providing useful tips and information regarding successful academic life for freshmen. Therefore, first year students who are interested in Social Science field are expected to participate in this class more assertively in order to become a smart and energetic freshmen in Dongguk University.
2020	1	Undergraduate	DUF2003	01	Introduction to Engineering	The goal of this course is to prepare freshmen students to achieve success in their university life and to introduce them to topics in the area of Engineering.
2020	1	Undergraduate	DUF2003	02	Introduction to Engineering	The goal of this course is to prepare freshmen students to achieve success in their university life and to introduce them to topics in the area of Engineering.
2020	1	Undergraduate	DUF2003	03	Introduction to Engineering	The goal of this course is to prepare freshmen students to achieve success in their university life and to introduce them to topics in the area of Engineering.
2020	1	Undergraduate	DUF2004	01	Introduction to Natural Science	In science, to make students realized that natural science refers to a naturalistic approach to the study of the universe, which is understood as obeying rules or laws of natural origin.
2020	1	Undergraduate	ECO2008	02	Principles of Macroeconomics	It deals with definitions of important macroeconomic variables, e.g., GDP, CPI, inflation, unemployment, money, and basic level of macroeconomic theories.
2020	1	Undergraduate	ECO2009	02	Micro-Economics	Microeconomics covers topics such as the consumer's behavior, a firm's profit maximization and features of market equilibrium. Its main objective is to let students learn how to analyze consumers' and firms' rational behavior under various market situations. It also analyzes the economic implications of various market structures and the meaning of the market equilibrium. By studying this subject, students are able to learn the basics of optimal decision-making and understand the underlying principles of the complicated modern market economy.
2020	1	Undergraduate	ECO2009	03	Micro-Economics	Microeconomics covers topics such as the consumer's behavior, a firm's profit maximization and features of market equilibrium. Its main objective is to let students learn how to analyze consumers' and firms' rational behavior under various market situations. It also analyzes the economic implications of various market structures and the meaning of the market equilibrium. By studying this subject, students are able to learn the basics of optimal decision-making and understand the underlying principles of the complicated modern market economy.
2020	1	Undergraduate	ECO2010	02	Macroeconomics	This course is designed to enhance students understanding of two major macroeconomic phenomena- the business cycle and economic growth- and other related ones. Basic macroeconomic models of income determination, price adjustment, and economic growth will be taught. Evaluation of governments macroeconomic policies will be covered, too.

2020	1	Undergraduate	ECO2010	03	Macroeconomics	This course is designed to enhance students understanding of two major macroeconomic phenomena- the business cycle and economic growth- and other related ones. Basic macroeconomic models of income determination, price adjustment, and economic growth will be taught. Evaluation of governments macroeconomic policies will be covered, too.
2020	1	Undergraduate	ECO4020	01	Financial Economics	This course deals with the issues involving money and financial markets. The course is designed to equip students for better understanding of the basic workings of the financial markets, financial instruments and asset pricing, and that students can gain practical knowledge along with theories.
2020	1	Undergraduate	ECO4020	02	Financial Economics	This course deals with the issues involving money and financial markets. The course is designed to equip students for better understanding of the basic workings of the financial markets, financial instruments and asset pricing, and that students can gain practical knowledge along with theories.
2020	1	Undergraduate	ECO4024	01	Game Theory	Game theory is the study of strategic decisions by multiplayer.It provides a framework based on the construction of rigorous models that describe situations of conflict and cooperation between rational decision makers, which is useful foos for further studies in economics and other fields of social science.In this course, we will overview the classical results in Game Theory such as Nash equilibrium as well as more recent topics.
2020	1	Undergraduate	ECO4024	02	Game Theory	Game theory is the study of strategic decisions by multiplayer.It provides a framework based on the construction of rigorous models that describe situations of conflict and cooperation between rational decision makers, which is useful foos for further studies in economics and other fields of social science.In this course, we will overview the classical results in Game Theory such as Nash equilibrium as well as more recent topics.
2020	1	Undergraduate	EGC2104	01	Introduction to the History of Modern Art	The course is a brief overview of the History of Art starting at the turn of the century 19th Century with the Impressionist movement up to modern day contemporary artists, looking at the major movements and genres throughout this period. Students will learn to identify major works of art. They will be able to discuss the subject and/or narrative of the painting or sculpture. They will be able to comment on the composition, the scale, the framing, perspective and viewpoint, light and shade, and the media and technique used. They will be able to place the work of art into the context of the time it was created, comparing and/or contrasting it to other works.
2020	1	Undergraduate	EGC3045	01	Understanding Advertising and Public Relations	This course is intended to explore the role of advertising and PR in contemporary society and comprehend the basic objectives and functions of advertising and PR in the disciplines of profit and nonprofit organizations. Also, this course overviews the general processes of message development and media execution, and attempts to systematically incorporate various industrial cases into the theories of advertising and PR.
2020	1	Undergraduate	EIT2002	01	Introduction to English Linguistics	This course is an introduction to the basic study of the English language. The course investigates the syntactic, semantic, and functional characteristics of the language. Students will learn basic English grammar and apply the knowledge to English reading and writing.
2020	1	Undergraduate	EIT2002	02	Introduction to English Linguistics	This course is an introduction to the basic study of the English language. The course investigates the syntactic, semantic, and functional characteristics of the language. Students will learn basic English grammar and apply the knowledge to English reading and writing.
2020	1	Undergraduate	EIT2002	03	Introduction to English Linguistics	This course is an introduction to the basic study of the English language. The course investigates the syntactic, semantic, and functional characteristics of the language. Students will learn basic English grammar and apply the knowledge to English reading and writing.
2020	1	Undergraduate	EIT2048	01	Fundamentals of English Listening & Speaking 1	This course is designed to enhance students' listening and speaking proficiency, which will improve their communication competence and interpretation skills. Students will be exposed to a variety of English texts in education, arts, politics, economy, etc.
2020	1	Undergraduate	EIT2048	02	Fundamentals of English Listening & Speaking 1	This course is designed to enhance students' listening and speaking proficiency, which will improve their communication competence and interpretation skills. Students will be exposed to a variety of English texts in education, arts, politics, economy, etc.
2020	1	Undergraduate	EIT2049	01	Discussion & Presentation in English	The purpose of this course is to help students improve their presentation skills in English. Students will discuss various topics in current events and learn how to present their thoughts effectively in public.
2020	1	Undergraduate	EIT4019	01	English Syntax	This course will provide students with analytic methods of the structure of English sentences. Based on the perspectives of generative grammar, the course will explore syntactic operations and phenomena. Students will be taught to apply the knowledge to English reading and pronunciation.
2020	1	Undergraduate	EIT4019	02	English Syntax	This course will provide students with analytic methods of the structure of English sentences. Based on the perspectives of generative grammar, the course will explore syntactic operations and phenomena. Students will be taught to apply the knowledge to English reading and pronunciation.
2020	1	Undergraduate	EIT4055	01	Career Mentoring for EIT Majors	Study of career development theories and decision-making models, career planning, career education, sources of educational and occupational information, nature and structure of the world of work, and leisure and lifestyle development
2020	1	Undergraduate	EIT4066	01	Professional English Writing	This course will focus on writing in a professional manner, as this style of writing requires more sophistication than our every day, familiar syntax. In this course, students will practice writing CVs/resumes, professional letters, professional e-mails, statements of purpose for specific jobs or projects, refined personal skills descriptions, and the artful language of diplomatic disagreement when dealing with bosses, coworkers, clients, or customers.
2020	1	Undergraduate	EME2004	01	Thermodynamics of Materials I	The purpose of Thermodynamics of Materials is to understand and expect the various chemical reactions and physical phenomena in material engineering. It is important to understand the physical and mathematical meanings of the four laws of thermodynamics and to apply them. Therefore, in this lecture, based on the understanding of the four laws of thermodynamics, various reactions (gas reaction, solid reaction and so on) are discussed deeply.
2020	1	Undergraduate	EME2013	01	Introduction to Materials Science and Engineering 1	Our everyday life enormously benefited from the development in modern products in many fields of engineering such as mechanical, aerospace, marine, semiconductor, computer and information & technology engineering. Such development can not be made without corresponding advancement in materials that are used in many products. This course aims to introduce fundamental concepts for understanding engineering materials, which will build bridges to more specialized topics of various field of materials science. This course will focus on understanding of process-structure-property relationships for metallic based materials by dealing with atomic-bonding, crystal structure, atomic diffusion, mechanical properties, phase equilibrium and transformation and processing of metals.
2020	1	Undergraduate	EME2015	01	Introduction of nanoscience and nanotechnology	This lecture introduces a lot of issues raised in the present nanoscience or nanotechnology as well as the fundamental theories explanatory of the unique properties in nano-regime. The practical application of nanotechnology to industry will be also informed.
2020	1	Undergraduate	EME2018	01	Chemistry of Organic materials 1	This course give an understanding of how can make organic molecule and structure of those materials. Details are synthesis of organic molecules such as linear hydrocarbon, ring aromatic molecule, ether, acids, alcoholic molecule etc. and the naming and structure, properties also will be given in the course.
2020	1	Undergraduate	EME4031	01	Polymer Chemistry	This lecture covers basic concepts, chemistry and analysis of polymers, which is required to understand the chemical properties of polymers and their applications.
2020	1	Undergraduate	ENE2002	05	Circuit Theory I	The goal of this subject are to build an understanding of concepts and ideas explicitly in terms of previous learning, and to emphasize the relationship between conceptual understanding and problem-solving approaches.
2020	1	Undergraduate	ENE2005	05	Physical Electronics I	The purpose of this lecture is to provide a basis for understanding the characteristics, operation, and limitations of semiconductor devices. In order to gain this understanding, it is essential to have a thorough knowledge of the physics of the semiconductor material. This lecture covers semiconductor crystal structure, semiconductor in thermal equilibrium or non-equilibrium, carrier transport, and the p-n junctions.
2020	1	Undergraduate	ENE4004	01	Solid State Electronic Devices	This lecture discusses CMOS device physics and models for designing analog, digital and RF integrated circuits. The topics include: SPICE model, parameter extraction, layout method, parasitic devices and IC developing environment.
2020	1	Undergraduate	ENE4007	01	Electrical Machinery I	This course introduces the principles and characteristics of the electrical-machine energy conversion. Topics discussed here include direct current machines and stationary induction machines.
2020	1	Undergraduate	ENE4007	02	Electrical Machinery I	This course introduces the principles and characteristics of the electrical-machine energy conversion. Topics discussed here include direct current machines and stationary induction machines.
2020	1	Undergraduate	ENE4014	01	Digital Signal Processing and Design	We lecture principles of the frequency characteristics of digital filters based on Fourier and Z-transform, including in-depth treatment on FIR and IIR filter design methods. Course contains a computer laboratory and digital filter design projects using a software tool.
2020	1	Undergraduate	ENE4014	02	Digital Signal Processing and Design	We lecture principles of the frequency characteristics of digital filters based on Fourier and Z-transform, including in-depth treatment on FIR and IIR filter design methods. Course contains a computer laboratory and digital filter design projects using a software tool.
2020	1	Undergraduate	ENE4014	03	Digital Signal Processing and Design	We lecture principles of the frequency characteristics of digital filters based on Fourier and Z-transform, including in-depth treatment on FIR and IIR filter design methods. Course contains a computer laboratory and digital filter design projects using a software tool.
2020	1	Undergraduate	ENE4031	01	Robotics	This is an introductory course on robotics. This course covers dynamics, control engineering, sensor and instrumentation techniques.
2020	1	Undergraduate	ENE4067	01	Modern Control Engineering	This is based on the foundations of modern control system analysis, and simulation and computer aided design using the MATLAB. Students learn sampled data system, performance of a sampled data and second order system, closed loop systems with digital computer compensation. In the laboratory, students experiment linear feedback control system, embedded system, remote control, and micro-mouse.

2020	1	Undergraduate	ENE4070	01	Microwave Engineering	This class lectures the fundamental knowledge required to design a microwave transceiver, which covers electromagnetic radiation, transmission-line theory, resonator, impedance matching, S-parameter analysis, coupler, microwave amplifier stability analysis, amplifier design using S-parameter, and the basics of the microwave system design. In addition, students accomplish a given design assignment using theory and simulation in the laboratory.
2020	1	Undergraduate	ENG2007	01	Literature in English-Speaking Nations	Reading of literary works in English speaking nations such as Australia, Canada, Ireland, South Africa, Jamaica, India etc. The works are reviewed from postcolonial viewpoints.
2020	1	Undergraduate	ENG2027	01	English Grammar for Speaking	The purpose of this course is to teach English Grammar based on speaking so that students can improve their grammar skill as well as speaking skill.
2020	1	Undergraduate	ENG2027	02	English Grammar for Speaking	The purpose of this course is to teach English Grammar based on speaking so that students can improve their grammar skill as well as speaking skill.
2020	1	Undergraduate	ENG2029	01	Introduction to English Language and Literature	This course covers following masterpieces in the early part of English literature: Beowulf, an epic poem in Old English; romance, mediaeval religious lyric; mediaeval morality plays like Every man; Renaissance sonnets; Shakespeare's plays; Metaphysical poems; Milton's poems; Dryden's works in the restoration period; Pope's and Dr. Johnson's writings; and finally some 18th-century novels.
2020	1	Undergraduate	ENG2029	02	Introduction to English Language and Literature	This course covers following masterpieces in the early part of English literature: Beowulf, an epic poem in Old English; romance, mediaeval religious lyric; mediaeval morality plays like Every man; Renaissance sonnets; Shakespeare's plays; Metaphysical poems; Milton's poems; Dryden's works in the restoration period; Pope's and Dr. Johnson's writings; and finally some 18th-century novels.
2020	1	Undergraduate	ENG2035	01	English Conversation Practice	Students of this class learn to speak on a variety of topics in English. Through reading selections from the textbook, they acquire the use of advanced-intermediate vocabularies in context. The accompanying tape also provides practice in listening to native speakers with a variety of American accents and a RP British accent.
2020	1	Undergraduate	ENG2035	02	English Conversation Practice	Students of this class learn to speak on a variety of topics in English. Through reading selections from the textbook, they acquire the use of advanced-intermediate vocabularies in context. The accompanying tape also provides practice in listening to native speakers with a variety of American accents and a RP British accent.
2020	1	Undergraduate	ENG2035	03	English Conversation Practice	Students of this class learn to speak on a variety of topics in English. Through reading selections from the textbook, they acquire the use of advanced-intermediate vocabularies in context. The accompanying tape also provides practice in listening to native speakers with a variety of American accents and a RP British accent.
2020	1	Undergraduate	ENG4044	01	American Culture and Film	This class deals with American culture in general both in written and visual texts. In more detail, it tries to make a definition of American culture, seeking to find its multi-cultural examples, and finally comparing it with other cultures.
2020	1	Undergraduate	ENG4053	01	Modern and Contemporary British and American Poetry	This course deals with the 20th and 21st century modern and contemporary British and American poetry in relation to world literature. The focus will be the major modernist poets, including Yeats, Pound, and Eliot, along with other modernist and postmodern poets, attempting to provide a transnational bridge to cross over the world literature and modern and contemporary poetries in English.
2020	1	Undergraduate	ENG4060	01	Artificial Intelligence Writers and English Literature	This class aims to figure out the characteristics of English creative works by artificial intelligence like novels, poems, dramas, and other types of works, and to evaluate the creative abilities of artificial intelligence by comparing them with those of human beings.
2020	1	Undergraduate	FIL2081	01	Screening of Korean Film	This class will be dedicated to screening and discussing on Korean film to understand history, industry and aesthetics of Korean film. Open to Film major, (Offered spring semester.) 1 credits
2020	1	Undergraduate	FIL2101	02	Film Production Workshop I	Students work in small teams on focused projects. Participants are expected to finish two or three short videos(under five minutes). Students will complete several small exercises in Directing, producing, shooting, sound recording and editing. Open to Film majors only, Sophomore (Offered every semester.) 3 credits
2020	1	Undergraduate	FIL4090	01	Screening of Classical Cinema	This class will be dedicated to screening and discussing on classical film of worldwide to understand history, industry and aesthetics of classical film.
2020	1	Undergraduate	FIS4020	01	Agri-Food Marketing	Agri-Food Marketing, first, studies basic theories and characters of current marketing and food goods marketing, second, comprehends the birth and development of market which is instended by cultures and systems, relates between varies and development process of distribution condition, third, obtains the minds toward market and consumer which is basic thinking of Agri-Food Marketing and then finally has a purpose to practice the concrete programs that is for successive marketing performance.
2020	1	Undergraduate	FOO2005	01	Food Analytical Chemistry	This class covers fundamental principles and concepts of food analysis. As a basic course, food analysis provides practical knowledge of the collection, interpretation, and use of such analytical data, especially in foods. The main topics of analytical chemistry, qualitative and quantitative chemistry will be covered in this course. Based on this class, students can prepare more conveniently food related license exams.
2020	1	Undergraduate	FOO2015	01	Food Materials Science and Engineering	Identification of food ingredients in terms of appearance, texture, etc.; buying, storing and handling; nutritional information; alterations of their properties by cooking or processing in terms of chemical, physical, and sensorial changes; preparation and cooking.
2020	1	Undergraduate	FOO2019	01	Nutritional epidemiology for food scientists	This course introduces principles behind nutritional epidemiology to design a study and to evaluate the health effects of nutrients, foods, and dietary patterns. Knowledges learned from this course will benefit students who plan to devote their careers to discovering new food items in food industry.
2020	1	Undergraduate	FOO2021	01	Biostatistics	This class aims to equip students with basic statistical knowledge required to analyse and interpret experimental results in the field of food science and biotechnology.
2020	1	Undergraduate	FOO4001	01	Food Chemistry	This class covers fundamental principles and concepts of chemistry in foods. Usually many changes in food processing and storage are due to those of chemicals in foods. Thus understanding the characterization and properties of these chemicals is so important to the food scientists.
2020	1	Undergraduate	FOO4004	01	Food Microbiology Lab	Basic techniques in preparation of media, sterilization, isolation and pure culture, microscopic observation, Gram staining of bacteria, size determination of microorganism will be examined.
2020	1	Undergraduate	FOO4028	01	Food Immunology	The objective of this lecture is to introduce the fundamental immunology including structural features of the immune system and their functions as well as immune responses to ingested food components.
2020	1	Undergraduate	GCR2003	01	Structure of Language and Its Social and Historical Aspects	This course will provide broad coverage of the field of linguistics, including phonological and grammatical analysis, diversity and complexity of human languages, dimensions of language use. We will explore the systematic, rule-governed nature of human language, as well as psychological, biological, and social considerations in its use. Linguistic analysis, argumentation, and problem solving will be emphasized. This course is intended to show language from various perspectives. We will discuss various factors that influence language variations such as geographic, social, cultural, and historical factors.
2020	1	Undergraduate	GCR4002	01	Understanding Language, Neuroscience, and Human Development	This course covers human development and the functions of the brain related to language. We will discuss physical properties of human brain, especially lateralization and contralateralization of the brain. Brain disorders related to language will be discussed such as aphasia, autism and William's syndrome. We will have a chance to look at brain waves obtained from various areas in the brain that are related to sub-areas of language. We will also work on the anatomy of the head for human speech sounds. Then we will move on to what children learn from birth until two years of age. The study of how children acquire language will be one of the interesting topics. Children with different ages will make different mistakes. Based on those mistakes, we assume their developmental stages related to language. We will also discuss why adults have difficulty acquiring second languages. The exceptional cases for language acquisition such as abused children and feral children, who have been reportedly reared with wild animals, will provide interesting but sad stories and suggest how and when languages should be learned.
2020	1	Undergraduate	GEO4063	01	GIS and Spatial Analysis	This course is designed to introduce basic statistics and quantitative techniques for analyzing spatial data. In particular, students will be learning about a comprehensive and systematic understanding of spatial analysis methods and practical skills in using GIS and spatial analysis to measure, describe, analyze and predict spatial information. Increasingly large amounts of spatial data are being generated and used by all levels of government as well as by other private and public institutions. Thus, developing solid skills in spatial data analysis has become a priority for every geography student. Prerequisites:
2020	1	Undergraduate	HIS4037	01	Recently Modern History of Europe	A general survey of the evolution of European history from the Industrial Revolution to World War I with special attention to the rise of nationalism, capitalism, and imperialism that sharpened conflicts among the nations and finally comparative analysis of the European society since the Industrial Revolution. And a general survey of the evolution of European history from World War I to World War II with special attention to the rise of Russian socialism, the crises of capitalism, and the break of the Second World War, and finally comparative analysis of the European society since World War I. The subjects of examination include revolutionary situations in post-war Europe, emergence of the great depression, fascism, World War II, and their impacts on the present world.
2020	1	Undergraduate	INC4056	01	Communication Theory	This course introduces basic theories on analog communication systems such as amplitude modulation, frequency modulation, and phase modulation. You will study matched filter and noise effects on various modulations.
2020	1	Undergraduate	INC4084	01	Capstone Design 1	This class deals with the engineering design which is defined as the process of devising a system, component, or process to meet desired needs. Among the fundamental elements that are taught in the capstone design class are the establishment of objectives and criteria, synthesis, analysis, construction, testing, and evaluation. Students form a team and work on a project throughout the semester. Senior students must take one capstone design class for graduation.

2020	1	Undergraduate	INC4084	02	Capstone Design 1	This class deals with the engineering design which is defined as the process of devising a system, component, or process to meet desired needs. Among the fundamental elements that are taught in the capstone design class are the establishment of objectives and criteria, synthesis, analysis, construction, testing, and evaluation. Students form a team and work on a project throughout the semester. Senior students must take one capstone design class for graduation.
2020	1	Undergraduate	INC4093	01	Software Engineering and Practice	This course is designed to provide students with an overview of Software Engineering, concentrating on practical aspects that are used for developing large and complex software systems. Key features are software process management, requirement engineering, system design, software testing, and code optimization.
2020	1	Undergraduate	INC4096	01	Machine Learning	Machine Learning is one of important area in Artificial Intelligence. In this class, students will learn the most effective machine learning techniques and gain practices to work for yourself.
2020	1	Undergraduate	INS2002	01	Corporate Crime	This course provides the analysis of corporate crime and the effect of corporate crime on society for solution to stop corporate crime.
2020	1	Undergraduate	INS4002	01	Industrial Security Consulting	This course let participants evaluate level of security based on a standard platform for protection and management of industrial information. They, moreover, do research for alternatives to have executive abilities.
2020	1	Undergraduate	INT2001	02	Microeconomics	Microeconomics studies the economic behaviour of individual consumers, firms, and industries and the distribution of total production and income among them. It considers individuals both as suppliers of labour and capital and as the ultimate consumers of the final product.
2020	1	Undergraduate	INT4012	01	Theories and Practice in International Negotiation	This course applies game theory and bargaining theory to the studies of international commercial negotiations and trade policy determination by inducing them to carry out the negotiation projects.
2020	1	Undergraduate	INT4012	02	Theories and Practice in International Negotiation	This course applies game theory and bargaining theory to the studies of international commercial negotiations and trade policy determination by inducing them to carry out the negotiation projects.
2020	1	Undergraduate	ISE2006	01	Management Information System	This course deals with methodologies to gain organizations' competitive advantage by use of information and communication technologies. Especially students will understand the issues on ERP, SCM and CRM systems and their technical aspects.
2020	1	Undergraduate	ISE2009	01	CAD and Laboratory Work	CAD(Computer Aided Design) is being applied actively in many industries with the development of the computer. CAD plays an important role in the design of complicated geometry, storage/transformation of product data, numerical analysis, etc. Therefore, in this class, we study the fundamental theory of engineering designs and computer graphics, as well as the hands-on experience of commercial CAD system which can be mostly used in the mechanical CAD area.
2020	1	Undergraduate	ISE2009	02	CAD and Laboratory Work	CAD(Computer Aided Design) is being applied actively in many industries with the development of the computer. CAD plays an important role in the design of complicated geometry, storage/transformation of product data, numerical analysis, etc. Therefore, in this class, we study the fundamental theory of engineering designs and computer graphics, as well as the hands-on experience of commercial CAD system which can be mostly used in the mechanical CAD area.
2020	1	Undergraduate	ISE4025	01	Information Systems Analysis and Design	This course deals with the methodologies, techniques, and software tools for analysis, design and implementation of modern information systems. Students will have chances to master the lecture contents through various in-class exercises, homework/lab assignments, and team-project activities.
2020	1	Undergraduate	ISE4025	02	Information Systems Analysis and Design	This course deals with the methodologies, techniques, and software tools for analysis, design and implementation of modern information systems. Students will have chances to master the lecture contents through various in-class exercises, homework/lab assignments, and team-project activities.
2020	1	Undergraduate	ISE4026	01	Senior Project in Industrial and Systems Engineering	This class focuses on the basic problem solving ability, research capability, and the importance of continuing education. Each student will perform planning and research on various topics in the Industrial and Systems Engineering and its related area under the supervision of advising faculty.
2020	1	Undergraduate	ISE4026	02	Senior Project in Industrial and Systems Engineering	This class focuses on the basic problem solving ability, research capability, and the importance of continuing education. Each student will perform planning and research on various topics in the Industrial and Systems Engineering and its related area under the supervision of advising faculty.
2020	1	Undergraduate	ISE4041	01	Data Analytics	This course aims to enable students to collect and analyze industrial data including technological, product, social and market data, and utilize the results of data analysis, building a strategy on various activities in order to practically apply the big data analysis in a real field.
2020	1	Undergraduate	JAP2012	01	Basic Japanese Conversation for Foreign Student	This course is (for foreign students) to develop a practical conversation and consider effective Korean language studies as well.
2020	1	Undergraduate	JAP2015	01	Japanese Literature of Pictures	This course guides students to approach and understand the Japanese literature with various perspectives through Japanese media arts related to literary works. It is expected to lead them to analyze Japanese media culture and to develop their Japanese listening ability.
2020	1	Undergraduate	JAP2017	01	Business Japanese	tudents examine the related language and situation on business. This course provides how to prepare business communication materials by providing them how to write letters of response to claim, offer and so forth. Through this course students can improve their skill to communicate in commercial area.
2020	1	Undergraduate	JAP2018	01	Introduction to Japanese Economics	As many issue in Japanese Economics are complex, the course focuses on the pros and cons of economic theories, government polices etc, from the entry level. In particular, this course is practical in nature and focuses on the managerial implications of each topic on the actual practice of Japanese economics.
2020	1	Undergraduate	JAP2019	01	Introduction of Japanese as a Major	This course is introduction to the basic study of the Japanese language as a major. The course will provide opportunities for students to solidify knowledge about elementary Japanese letter, phonetics, word, grammar.
2020	1	Undergraduate	JAP2019	02	Introduction of Japanese as a Major	This course is introduction to the basic study of the Japanese language as a major. The course will provide opportunities for students to solidify knowledge about elementary Japanese letter, phonetics, word, grammar.
2020	1	Undergraduate	JAP2020	01	Understanding of Japanese Grammar	This course will provide opportunities for students to solidify knowledge about Japanese grammar through education of itemized list and practice.
2020	1	Undergraduate	JAP2021	01	Role Play Japanese Conversation	This course is learn through role play in group, about trading business with Japan and communication in Japanese used in industrial field.
2020	1	Undergraduate	JAP4001	01	Introduction to Japanese Linguistics	Studying the basics to learn Japanese. Students require to understand the structure and historical background of Japanese.
2020	1	Undergraduate	JAP4005	01	Sino-Japanese	Examine how Korea and Japan accept the sound of Chinese character, Kanji on the system of Chinese phoneme.
2020	1	Undergraduate	JAP4006	01	Introduction to Japanese Literature	Students research representative classical Japanese literary works.
2020	1	Undergraduate	JAP4018	01	Japanese social linguistics	In this course, students can understand the characteristics of the Japanese through the various analysis as like culture, class, gender, industries, politics, economic.
2020	1	Undergraduate	JAP4021	01	Understanding of Japanese Society and Culture	In this course, Students thoroughly understand modern culture and society.
2020	1	Undergraduate	JAP4022	01	Understanding of Japanese Politics and Diplomacy	In this course, Students thoroughly understand modern Politics and, Diplomacy.
2020	1	Undergraduate	JAP4025	01	Industries and Innovation of Japan(Capstone design)	TBA
2020	1	Undergraduate	LAW2066	01	American Law	This course provides a basic understanding and explanation of the American legal system from a variety of perspectives, both civil and criminal.
2020	1	Undergraduate	LAW4101	02	Information Law(Capstone Design)	The Information Law provides an academic opportunity for studying the effects of contemporary choices concerning the legal rules affecting the production, manipulation, storage, and dissemination of, and access to, information in the digitally networked society(Internet-Society).
2020	1	Undergraduate	MAT2030	01	Advanced Calculus	The topics in this course are axioms of real number system, limit of sequence, limit of functions, mean value theorem, fundamental theorem of calculus, vector, tangent plane of surface, Lagrangian multiplier, line integral, double integral, triple integral.
2020	1	Undergraduate	MAT2035	01	Linear Algebra	This course focuses on linear systems and matrices, real vector space, basis and dimension, coefficients of matrices, inner product space, orthonormal basis, linear transformation, kernel and image, matrix of linear transformation, etc.
2020	1	Undergraduate	MAT4003	01	Introduction to Analysis	Real numbers, Bolzano-Weierstrass theorem, Compact sets, Heine-Borel theorem, Cauchy sequence, Monotone convergence theorem, Continuity, Uniform continuity, Connected sets, Sequences of functions and The Stone-Weierstrass approximation theorem.
2020	1	Undergraduate	MAT4016	01	Numerical Analysis	This course analyzes all the problems happening in numerical analysis like error analysis, finding optimum value, etc. It reviews analysis theories and handles how to solve differential calculus, etc.
2020	1	Undergraduate	MAT4021	01	Differential Geometry I	Differentiation of vector valued functions chain rule, Jacobian, Inverse function theorem, Implicit function theorem, Surface theory, Regular surfaces.
2020	1	Undergraduate	MAT4042	01	Introduction to Topology	The topics in this course are definition of topology, basis, subbasis, continuous map, metric space, countability, separation axiom, compactness.
2020	1	Undergraduate	MAT4044	01	Complex Variables	The topics in this course are complex function, differentiation of complex function, harmonic function, multi-valued function and its brach, line integral, Cauchy theorem, Cauchy integral formula, Liouville theorem, fundamental theorem of algebra, complex series, Laurant series, singularity, residue, Rouch theorem, Schwarz lemma, conformal mapping.
2020	1	Undergraduate	MAT4047	01	Modern Algebra I	This course gives an introduction of modern and abstract algebra to mathematics major. Topics include the definition of a group, Lagrange Theorem, Cayley Theorem, Isomorphism Theorems, Quotient groups, the elementary theory of rings and fields, and Modern Algebra I ideals.
2020	1	Undergraduate	MAT4051	01	Machine Learning	TBA
2020	1	Undergraduate	MEC2001	01	Mechanical Engineering Drawing	Understanding and analyzing drawings are main issue in this course and students perform actual drawings. Projection method, dimensioning, part drawing, working drawing are introduced and CAD projects using computers are also performed.
2020	1	Undergraduate	MEC2001	02	Mechanical Engineering Drawing	Understanding and analyzing drawings are main issue in this course and students perform actual drawings. Projection method, dimensioning, part drawing, working drawing are introduced and CAD projects using computers are also performed.

2020	1	Undergraduate	MEC2001	03	Mechanical Engineering Drawing	Understanding and analyzing drawings are main issue in this course and students perform actual drawings. Projection method, dimensioning, part drawing, working drawing are introduced and CAD projects using computers are also performed.
2020	1	Undergraduate	MEC2018	01	Thermodynamics	Engineering thermodynamics is one of the elementary courses in thermo-fluid field, which provides a thorough understanding of fundamental concepts of thermodynamics including characteristics of pure substances, heat and work, laws of thermodynamics, internal energy, enthalpy, entropy. Students are also prepared with the ability to apply the basic concepts to the solution of practical problems and to develop a systematic approach to problem solving skills.
2020	1	Undergraduate	MEC2018	02	Thermodynamics	Engineering thermodynamics is one of the elementary courses in thermo-fluid field, which provides a thorough understanding of fundamental concepts of thermodynamics including characteristics of pure substances, heat and work, laws of thermodynamics, internal energy, enthalpy, entropy. Students are also prepared with the ability to apply the basic concepts to the solution of practical problems and to develop a systematic approach to problem solving skills.
2020	1	Undergraduate	MEC2035	01	Mechanical Engineering Analysis	This course covers the analytical methods necessary in the study of mechanical engineering with special emphasis on the interpretation of the solutions in the mechanical engineering perspective.
2020	1	Undergraduate	MEC2035	02	Mechanical Engineering Analysis	This course covers the analytical methods necessary in the study of mechanical engineering with special emphasis on the interpretation of the solutions in the mechanical engineering perspective.
2020	1	Undergraduate	MEC2036	01	Adventure Design	This course is concerned with the engineering design procedure and the study of effects of the engineering design on modern technical society. Also, this course provides the opportunity of conceiving the job prospective, ethics and continuous learning.
2020	1	Undergraduate	MEC2036	02	Adventure Design	This course is concerned with the engineering design procedure and the study of effects of the engineering design on modern technical society. Also, this course provides the opportunity of conceiving the job prospective, ethics and continuous learning.
2020	1	Undergraduate	MEC4060	01	Machine Design	Discuss fundamental concepts for machine design as a mechanical engineers in terms of analyzing mechanical components and integrating elements of mechanical systems to fulfill industrial needs.
2020	1	Undergraduate	MEC4060	02	Machine Design	Discuss fundamental concepts for machine design as a mechanical engineers in terms of analyzing mechanical components and integrating elements of mechanical systems to fulfill industrial needs.
2020	1	Undergraduate	MEC4066	01	Sensor and Measurements	Measurement is essential for understanding engineering phenomena and automatic control process. Techniques and principles of various measurement systems, error analysis, data acquisition process, computer-aided measurements are also studied.
2020	1	Undergraduate	MEC4073	01	Robot Dynamics	Based on theoretical understanding of 3-axis robot system, the course deals with skills for dynamics of robot arms including robot actuators connected to various types of links and joints.
2020	1	Undergraduate	MEC4080	01	Capstone Design Track-Project	Students develop the ability of problem-solving techniques of real product design and experience working in teams to carry out their own project for practical world.
2020	1	Undergraduate	MEC4080	02	Capstone Design Track-Project	Students develop the ability of problem-solving techniques of real product design and experience working in teams to carry out their own project for practical world.
2020	1	Undergraduate	MEC4080	03	Capstone Design Track-Project	Students develop the ability of problem-solving techniques of real product design and experience working in teams to carry out their own project for practical world.
2020	1	Undergraduate	MEC4088	01	Robotics	The purpose of this course is to introduce you to basics of modeling, design, planning, and control of robot systems. Under the constraints of location, speed, acceleration, etc., the trajectory of the robot is generated and the force and motion of the robot operation are controlled, and practicing to make and control a simple robot.
2020	1	Undergraduate	MGT4049	01	Business Strategy	The objective of this course is to make students to have integrated and strategic perspectives about management of organizations. Through lectures, case study, class discussions, and exercises, students develop abilities to analyze market trends and business environments and to make strategic alternatives. Therefore, this strategy management course encourages students to apply principles and theories learned from class to real-world context, which in turn improve their abilities to deal with rapidly changing business environments. At the end of the class, students can recognize the importance of strategies in terms of organizational competitiveness. The content of this course consists of competitive strategy, analysis of competitive advantage, and strategy formulation and implementation.
2020	1	Undergraduate	MGT4054	01	Supply Chain Management & Logistics	This course introduces students to the cases covering the strategies, tactics, and operating issues in contemporary logistics and supply chain management. It is only over the last few years that firms have started focusing on logistics and supply chain management as a source of competitive advantage. This focus becomes even more important given that product life cycles are shrinking and competition is intense. Supply chain management today represents a great challenge as well as a tremendous opportunity for most firms. The topics include logistics strategy, supply chain restructuring and change management, and distribution, customer service, and inventory policy.
2020	1	Undergraduate	MGT4054	02	Supply Chain Management & Logistics	This course introduces students to the cases covering the strategies, tactics, and operating issues in contemporary logistics and supply chain management. It is only over the last few years that firms have started focusing on logistics and supply chain management as a source of competitive advantage. This focus becomes even more important given that product life cycles are shrinking and competition is intense. Supply chain management today represents a great challenge as well as a tremendous opportunity for most firms. The topics include logistics strategy, supply chain restructuring and change management, and distribution, customer service, and inventory policy.
2020	1	Undergraduate	MGT4068	01	New Product Development and Pricing Strategy	The course places emphasis on developing specific marketing strategies to support the creation and launch of new products and to successfully manage new products for long-term success. Specifically, this course addresses the following questions. How to manage the entire new product development process, how can the voice-of-the-customer be "heard" and then "translated" into actual product, and how can product design be used to enhance the value proposition. In addition, by understanding theoretical and practical methods for optimal pricing decisions, this course offers important managerial tools for pricing strategies.
2020	1	Undergraduate	MGT4068	02	New Product Development and Pricing Strategy	The course places emphasis on developing specific marketing strategies to support the creation and launch of new products and to successfully manage new products for long-term success. Specifically, this course addresses the following questions. How to manage the entire new product development process, how can the voice-of-the-customer be "heard" and then "translated" into actual product, and how can product design be used to enhance the value proposition. In addition, by understanding theoretical and practical methods for optimal pricing decisions, this course offers important managerial tools for pricing strategies.
2020	1	Undergraduate	MGT4073	01	Service Marketing(NCS)	This course has two main objectives. First, the course examines how service organizations differ from goods organizations in terms of the development and execution of marketing plans. Secondly, goods organizations need to acknowledge the service aspects of their organizations and how service can be used as a source of competitive advantage. The focus will be on identifying the various components of the service marketing mix and appreciating the concepts of service delivery, customer satisfaction and dissatisfaction, and service quality.
2020	1	Undergraduate	MGT4073	02	Service Marketing(NCS)	This course has two main objectives. First, the course examines how service organizations differ from goods organizations in terms of the development and execution of marketing plans. Secondly, goods organizations need to acknowledge the service aspects of their organizations and how service can be used as a source of competitive advantage. The focus will be on identifying the various components of the service marketing mix and appreciating the concepts of service delivery, customer satisfaction and dissatisfaction, and service quality.
2020	1	Undergraduate	MIX4001	01	Interactive Media Production	The course explores the interactive media production through theory and practice. Students will study various interactive approaches and methods. The main emphasis of the course will be on the interactive productions of visual arts.
2020	1	Undergraduate	MME2048	01	Multimedia Numerical Analysis	This course deals with numerical solutions using computer which are important for solving various multimedia engineering problems. In order to understand mathematical modeling of engineering problems and mathematical formulations to be performed in computers, we will learn basic concepts of numerical analysis and various numerical analysis techniques. Numerical programming is intuitively understood through numerical programming, and numerical analysis ability to interpret and predict numerical error.
2020	1	Undergraduate	MME2051	01	Autonomous Object Programming	Python is a high level programming language. Python places importance on code readability and provides clear programmable structures on large and small scales. In this course, students learn the python programming techniques to control robots and drones.
2020	1	Undergraduate	MME4108	01	Multimedia Big Data	After the arrival of the big data era, our society has been utilizing many big data technologies in many ways. This course covers the principles of data mining, exploratory analysis and visualization of complex data sets so that students can utilize the analysis tools for the multimedia big data and develop power of programming in processing the multimedia big data.
2020	1	Undergraduate	MME4109	01	3D Script Programming (Capston Design)	In this course, students will learn 3D graphic design and script programming using 3D graphics tools. You will learn how to model objects with 3D graphics tools and apply texture mapping and animation. In addition, through script programming, students learn how to implement and utilize functions that are more convenient for designers than those provided by 3D graphic tools. Through this lecture, students can acquire basic programming knowledge as well as 3D graphic design.
2020	1	Undergraduate	MME4115	01	Robot Vision System	This lecture teaches how to acquire meaningful information from a given image based on the understanding of image processing and machine learning which are the core technologies of the 4th Industrial Revolution. In addition, students learn the methods for extracting and matching feature points from a given image, which is the core technology of vision application. Students also acquire the ability to develop robot vision applications through hands-on projects.

2020	1	Undergraduate	PAI2015	01	Fundamental Painting 1	Studio work introduces the student to the domain of painting through the basic elements of form, color, technique, and also the fundamental conceptual of painting.
2020	1	Undergraduate	PHY2002	01	Mechanics 1	To understand the fundamentals of Mechanics we study Newton's law, oscillations, gravitation, and nonlinear phenomena.
2020	1	Undergraduate	PHY2011	01	Physics Experiments I	Physics experiments-I course is composed of various experiments related to classical mechanics and modern physics. Students can understand theoretical contents through related experiments. They are Zeeman effect, rigid body rotation, simple pendulum, modern physics experiments.
2020	1	Undergraduate	PHY4002	01	Mathematical Physics I	Mathematical concepts and methods necessary for studying advanced physics are lectured with 2 courses 1 and 2. Mathematical physics 1 includes such topic as infinite series, matrices, partial differentiations and multiple integrals, and vector analysis.
2020	1	Undergraduate	PHY4007	01	Quantum Physics I	With basic concepts of quantum theory, system/structures of quantum mechanics(QM), and methodology fo QM, real physical phenomena will be studied in the view of atomic structures, electromagnetic wave, and atomic interactions.
2020	1	Undergraduate	PHY4011	01	Nuclear Physics I	-Some basics of nuclear physics -Nuclear shell model -Radioactivity, liquid drop model
2020	1	Undergraduate	PHY4014	01	Solid State Physics I	Students will study on the structure of crystal,reciprocal lattice, diffraction of crystal, binding of crystal, phonon I (Lattice vibration) and phonon II(thermal properties) and so on.
2020	1	Undergraduate	PHY4031	01	High Technology of Physics	New topics with applications of physics for technology (e.g. display, energy, solar cell, etc)are studied by student by himself with discussion.
2020	1	Undergraduate	PHY4033	01	Physics Experiments II	Some basics experiments of electricity and Magnetism which is learned at the class of Electricity and Magnetism theory.
2020	1	Undergraduate	PHY4036	01	Wave Optics	In recent years optics there has been a remarkable upsurge in the importance of optics in both pure science and technology; the course facilitates the student's understanding of contemporary ideas modern optics. A survey of physical optics: Propagation of electromagnetic waves, the electromagnetic spectrum, wave theory, Fourier methods, polarization, coherence, interference, and diffraction.
2020	1	Undergraduate	PHY4039	01	Physics Research Project	This course is to perform research in theoretical and experimental lab. On the basis of physical concepts understood in classes, students involve research project or perform specific topic. They have research experiences for their future works.
2020	1	Undergraduate	PHY4041	01	Electromagnetism 1	This subject handles the basic laws of electromagnetic interaction summarized as Coulomb's law and Biot-Savart Law which can be re-written in differential equations in the form of Gauss' law and Ampere's law. Vector algebra and vector calculus are introduced in order to describe the physical quantities as vector functions in three dimensional space. Solutions of Laplace equation and the concept of dielectric constant are explained.
2020	1	Undergraduate	PHY4043	01	Thermal & Statistical Physics 1	The subject of the course includes fundamental principles and simple applications of thermodynamics and statistical mechanics of matter in equilibrium and non-equilibrium. This course covers distribution function, equation of state, First and second laws of thermodynamics, concept of entropy, thermodynamic relations, and applications.
2020	1	Undergraduate	PMY2004	01	Advanced Organic Chemistry	Overview of general organic reactions for understanding of structure, structure-activity relationships, and molecular level mechanism of drugs.
2020	1	Undergraduate	PMY2023	01	Pharmaceutical Biochemistry	Study the synthesis, degradation, function and interaction of various genes and proteins, and the role of lipids and carbohydrates in vivo. Learn how they interact with genes and proteins to cause various changes in our body, and apply them to new concept drug development technologies.
2020	1	Undergraduate	PMY4012	01	English for Pharmaceutical Science	Lecture deals with the medical terminology in English that are used in pharmaceutical fields.
2020	1	Undergraduate	PMY4029	01	Pharmacogenomics	In this course, students will learn and understand the basic concepts of pharmacogenomics, which is a new scientific discipline that investigates the gene expression change profiles in response to drug treatment and apply the aquired knowledge to develop and provide rational means to optimize drug therapy, with respect to the patients genotype, to ensure maximum efficacy with minimal adverse effects.
2020	1	Undergraduate	PMY4030	01	Pharmacotherapy1	This course will cover systematic acquisition of comprehensive expert knowledge on clinical diagnosis and treatment of disease and pharmacotherapy to cultivate adequate prescription review ability, prevent pharmaceutical accidents by examining appropriateness of medication use, and develop patient counseling skills.
2020	1	Undergraduate	PMY4039	01	Drug Interaction	A course intended to learn and apply pharmacy students to the clinical knowledge of drug-drug, drug-food, and drug-disease interactions in the clinical settings.
2020	1	Undergraduate	PMY4074	01	Clinical Pharmacokinetics	This lecture covers how apply the pharmacokinetic concepts to dosage regimens in practice.
2020	1	Undergraduate	PMY4075	01	Pharmaceutical Manufacturing Control	The technical implication of good manufacturing practives in Korea will be studied in this Course. In addition, topics will cover pharmaceutical R&D process, regulation, SUPAC, PAT (Process Analysis Technology) and process validation.
2020	1	Undergraduate	PMY4086	01	Cancer Biology	Study characteristics of cancer cells, differences from normal cells, causes of cancer, biochemical understanding of the carcinogenesis process, and function of tumor genes and carcinosarcoma genes.
2020	1	Undergraduate	PMY4100	01	Pharmacology for Small Animals	TBA
2020	1	Undergraduate	PMY4101	01	Pharmaceutical cell biology	TBA
2020	1	Undergraduate	PUB4030	01	Government and Administration in Korea	The goal of this course is to provide students with a basic understanding of government, policy and administration in Korea. This course is designed to help students develop their analytical ability to critically examine public administration.
2020	1	Undergraduate	RGC8007	01	Korean-Chinese Text Interaction	Basic Text Translation will help foreign students to improve translation skills between English into Korean by acquiring the differences between English and Korean grammars and expressions,in order to enhance Korean writing skills.
2020	1	Undergraduate	RGC8007	02	Korean-Chinese Text Interaction	Basic Text Translation will help foreign students to improve translation skills between English into Korean by acquiring the differences between English and Korean grammars and expressions,in order to enhance Korean writing skills.
2020	1	Undergraduate	RGC8007	03	Korean-Chinese Text Interaction	Basic Text Translation will help foreign students to improve translation skills between English into Korean by acquiring the differences between English and Korean grammars and expressions,in order to enhance Korean writing skills.
2020	1	Undergraduate	RGC8007	04	Korean-Chinese Text Interaction	Basic Text Translation will help foreign students to improve translation skills between English into Korean by acquiring the differences between English and Korean grammars and expressions,in order to enhance Korean writing skills.
2020	1	Undergraduate	SEM2002	01	Introduction of Semiconductors and Lab	The study on basic semiconductor materials, devices, circuits and processes and basic experiments for the electronic measurement equipments.
2020	1	Undergraduate	SEM2007	01	Signal Analysis	Signals are classified and decomposed into elementary signals. Continuous signals and discrete signals are analyzed in time domain and frequency domain. Properties of signals in time domain and frequency domain are compared and discussed to deliver physical meaning. Laplace transform and z-transform are also presented for analysis and synthesis of systems.
2020	1	Undergraduate	SEM4001	01	Wireless Communications	Principles of digital wireless communications are presented conversion of analog signals into digital signals via sampling, quantization, and coding. Principles of various analog/digital communications are presented and their derivatives are discussed. The implementation methods of communication blocks using semiconductor integrated circuits are explained.
2020	1	Undergraduate	SEM4004	01	Semiconductor Devices and Lab 1	The study on physical properties of PN junctions bipolar junction transistors, and metal-semiconductor contact structures including experiments.
2020	1	Undergraduate	SEM4065	01	Photonic Devices	The study on optoelectronic devices regarding on eco-friendly semiconductor optical decices like as white light emitting diode, laser diode, photo diode, and photovoltaic devices through the understanding of optical absorption and emission in semiconductors.
2020	1	Undergraduate	SEM4068	01	Design of Mixed Mode System	Recently, most of the semiconductor chips are composed of both a digital circuit and an analog circuit. Thus we have to study a mixed-mode system design. In this lecture, a phase locked loop(PLL), a sigma-delta circuit, a mixed-mode filter, and power management integrated circuit (PMIC) are discussed. Further, their applications are also studied.
2020	1	Undergraduate	SSC2002	01	Introduction to Economics	Principles of Economics" studies basic economic theories and applications in microeconomics and macroeconomics. Microeconomics is to understand rational decisions of individuals and firms, and the conditions and limitations of markets which are operated by individuals and firms. Macroeconomics covers economic variables important for national economy and the relationship among them, as well as the role of government policies in economies.
2020	1	Undergraduate	SSC2004	01	Introduction to Public Administration	From the former Public Administration studies, we will take controversial themes, concentrate on their research, analyze and discuss which in forth will help in organizing all the previous studies. The future of public administration studies and the present state of Korean public administration studies are the major subjects of this course.
2020	1	Undergraduate	STA2021	01	Mathematical Statistics II	Hypothesis testing. Confidence intervals. Estimation and hypothesis testing. Order statistics, Decision theory. Bayes and empirical Bayes rules. Efficiency. Analysis of Variance. Distribution free and robust techniques.
2020	1	Undergraduate	STA4034	01	Regression Analysis	Regression models are considered to identify any relation between two variables. Regression analysis course introduces estimations and tests for regression coefficients, lack-of-fit test, analysis of variances and so on.



2020	1	Graduate	AIX6001	01	Introduction to Artificial Intelligence	In artificial intelligence area, intelligent machines that think and act like people are being studied. Based on the structure and working principle of the human brain and mind, artificial intelligence technology requires interdisciplinary research in humanities, natural sciences, and engineering. By overcoming the limitations of classical rule-based programming and transitioning to a modern data-driven deep-learning approach, artificial intelligence has made great leaps. Artificial intelligence is expected to play a key role in transforming the entire industry in the era of the Fourth Industrial Revolution, where the amount of digital data is further increased and the speed of computing is further accelerated. This course provides an overview of the principles, methods, and applications of artificial intelligence. In addition, this enlightens understanding of the information science perspective of human being, problem-solving ability by artificial intelligence, and insight for industrial and social changes to students in not only the humanities, social sciences, arts major, but also natural sciences, medicine, and engineering majors
2020	1	Graduate	BES8022	01	Biological Environmental Remediation	Microbiological, chemical, and environmental aspects of biodegradation and bioremediation. Emphasis on microbiological processes and the behavior of chemical compounds.
2020	1	Graduate	BIO6027	01	Structural Biology	Structural biology is the study of 3D structure of macromolecule such as proteins or nucleic acids, which performs most essential biological functions in a cell. The protein functions are strictly determined by their structures
2020	1	Graduate	BIO6036	01	Environmental Biology	Environmental Biology is the study of interactions among physical, chemical, and biological components of the environment. Environmental Biology provides an integrated, quantitative, and interdisciplinary approach to the study of environmental biosystems.
2020	1	Graduate	BIO8009	01	Molecular Immunology	Lymphocyte differentiation, antibody diversification, and various signal transduction pathways which are involved in immune response will be discussed. Role of immune response in defending various human disease will be lectured. Modern immune therapy and other medical applications will be discussed.
2020	1	Graduate	BIO8041	01	Biologic Methology	Basic principles, designs, and methods required in biological research will be covered in this class.
2020	1	Graduate	BME6028	01	Medical electronic engineering	The purpose of this course is to understand human structures with engineering point of view and to provide anatomy, biomechanics as well as bio-signal processing and medical image processing techniques.
2020	1	Graduate	BME6039	01	Bioinstrumentation System Design	This course is to introduce a process of medical system design and it will be improve the understanding of your bio-system, and bio-devices.
2020	1	Graduate	BME7001	01	Advanced Molecular Biology	We will discuss about various molecular biology techniques and their application for biomedical engineering research.
2020	1	Graduate	BME7008	01	Special Topics in Protein Biochemistry	The purpose of this class is learning about the interaction between structure and fuction of live-tissues. Furthermore we will discuss about the applications of cells and biomaterials in order to relace damaged tissues or organs.
2020	1	Graduate	BME7011	01	Advanced Biopolymer	The purpose of this curriculum is study about biopolymer for assist in healing, to improve function, to correct abnormalities, and thus improve the quality of life of the patients.
2020	1	Graduate	CSE6015	01	Machine Learning	Machine learning is a field of artificial intelligence that studies the methodology that can improve the performance of the system by observing data and experience from the environment. Machine learning has been used successfully in a variety of areas such as language processing, image recognition, speech recognition, robotics, bioinformatics, and business intelligence. In this lecture, basic concepts and principles of machine learning are introduced including various algorithms and tools. The class consists of lectures on various theories from statistical techniques to deep learning models on supervised learning, unsupervised learning, and reinforcement learning, and programming exercises on them.
2020	1	Graduate	CSE7068	01	Advanced Software Engineering	This course is research-oriented course in which students will select interesting topics on software engineering, understand current status of research, and look forward new research theme. First purpose of this course is that students are able to understand current research trend, concepts, and principles in depth. Characteristic of this course is learning by researching. Each lecture has presentation of students who select recent famous research papers, summarize research questions, problems, contributions of that research. Students will have perspectives of research by finding out meaning of research results, problems of that research, and improvement for new research. This kind of lecturing makes students researching by themselves to figure out current principles and trend in software industry as professional software researchers.
2020	1	Graduate	CSE7124	01	Robot Programming	This course is focused on understanding various intelligent systems including intelligent robotics. In addition, state-of-the-art technologies are introduced.
2020	1	Graduate	CSE7128	01	Bio-Big Data Analysis Algorithm	The rise of various fusion researches, such as BIT convergence research, are opening the era of the 4th industrial revolution. With the advance of high throughput technologies, huge amount of biological data are being produced everyday. Computational technologies are essential in analyzing these bio-big data. In this lecture, we will introduce various statistical and computational technologies and algorithms for analyzing bio-big data.
2020	1	Graduate	EME7002	01	Functional Materials	This class covers very diverse area of materials, which can be applied to electronic devices, electrochemical devices, ionic devices and so on.
2020	1	Graduate	EME7007	01	Advanced materials for secondary rechargeable battery	(i) Recent current-edge researches concerning on secondary rechargeable battery, (ii) Recent researches concerning on cathode, electrolyte, and anode materials for secondary rechargeable battery, (iii) Strategies to develop materials for secondary rechargeable battery
2020	1	Graduate	EME7033	01	Advanced Lecture for Nanomaterials	Nanotechnology is very important technology for the future of human beings. This lecture provides the advanced knowledge and understanding for the state-of-the-art nanomaterials and nanotechnology.
2020	1	Graduate	EME7038	01	Advanced Energy Materials	This lecture deals with the synthesis and characterization of nanomaterials for energy storage or conversion. Herein, the electrochemical properties and structure of nanomaterials will be correlated.
2020	1	Graduate	EME7040	01	Advanced Inorganic Chemistry(1)	Advanced inorganic chemistry based on quantum chemistry: Atomic structure, symmetry and point group, chemical bonding, reactivity, solid-state chemistry, chemical force, solution chemistry, spectra analysis, reaction mechanism, metal and non-metal, and periodicity.
2020	1	Graduate	EME7045	01	Seminar for Advanced Materials	This class introduce the most popular materials and application area for graduate students. The prospect for each area will be also given.
2020	1	Graduate	ENE7005	01	Theory of Microwave Circuits and Devices	We discuss essential methods for microwave circuit analysis, such as scattering parameters, performance and design of passive/active microwave devices, microwave communication systems, and measurement techniques.
2020	1	Graduate	ENE7019	01	Mobile Communication system	The characteristics of mobile communication channel and mobile communication technology are lectured such as modulation/demodulation and coding theory.
2020	1	Graduate	ENE7072	01	Optimum Control of Electric Power System	This course covers power system dynamics and modeling, low frequency oscillations and control, linear optimal control, and dynamic equivalents of power system.
2020	1	Graduate	ENE7139	01	Neural Networks	Course provides an introduction to concepts in neural networks. Topics include parallel distributed processing, learning algorithms, and applications. This course will emphasize application of neural networks widely used for addressing real-world problems such as classification, pattern recognition, regression, data mining, etc. Students will be introduced to real neural networks engines/tools for hands on experience with design, calibration, and implementation of neural networks.
2020	1	Graduate	ENG7010	01	19th Century British Novel	The course will explore major nineteenth-century British novels by Austen, Eliot, Dickens, Hardy, and Brontë.
2020	1	Graduate	GME6003	01	Game Artificial Intelligence	The purpose of this course is to provide the students with a comprehensive overview of the entire field of artificial intelligence and its applications area. This course teaches general game artificial intelligence theory and basic AI engine design concepts. For example, FSM, A* algorithm, pathfinding algorithm, mesh navigation, flocking, crowd simulation, fuzzy logic, emotion systems, team AI, and AI for sports, RTS, Simulation are introduced. Also this course teaches the techniques developed for real-time adaptive control of AI methods most suitable for game characters.
2020	1	Graduate	GME7025	01	Special Topics 1 on Multimedia Engineering	To understand the core technology and the trend of multimedia engineering, recent topics will be selected and discussed. Experiments and practical implementations will help the students to understand the basic idea of the techniques and to apply it to other applications.
2020	1	Graduate	GME7026	01	Special Topics 2 on Multimedia Engineering	To understand the core technology and the trend of multimedia engineering, recent topics will be selected and discussed. Experiments and practical implementations will help the students to understand the basic idea of the techniques and to apply it to other applications.
2020	1	Graduate	GME8042	01	Advanced Topics in Multimedia Image Processing	This course selects a state-of-the-art research topic in multimedia image processing; therefore, a specific topic changes every year. Important core techniques are studied and relevant conventional techniques are implemented and analyzed.
2020	1	Graduate	JAP7002	01	Studies of Japanese Linguistics(2)	Refers representative theory of Japanese linguistics in each in history and systematize Japanese linguistics.
2020	1	Graduate	JAP7028	01	Aspects on Studies of Modern and Present Japanese Literature	Reviews the Japanese literary trend by modern era and the historical literary importance of the works and authors of each era through approaching of philology and verification.
2020	1	Graduate	JAP7044	01	Theories of Japanese Economic Relations	This course studies the basic concept and issues of international trade policy, international trading systems, economic integration through trade and investment, commercial policy, balance of payments, exchange rate determination and its fluctuation, open economy macroeconomics, and trade and growth in Japan.
2020	1	Graduate	JAP7047	01	Study on Japanese Political and Diplomatic	Students review modern Japanese political and diplomatic studies based on its main research theories.
2020	1	Graduate	MBA6121	01	Ethics	TBA
2020	1	Graduate	MBA6122	01	Econometrics	TBA
2020	1	Graduate	MBA6307	01	Decision making with business data analysis	TBA
2020	1	Graduate	MBA6916	01	Analysis of organizational behavior	TBA
2020	1	Graduate	MBA6918	01	Business Persuasion and Negotiation	TBA
2020	1	Graduate	MBA6919	01	Investment and Securities	TBA
2020	1	Graduate	MBA6920	01	Emerging topic on business information technology	TBA
2020	1	Graduate	MBA6921	01	Consumer psychology and behavior	TBA
2020	1	Graduate	MBA7023	01	Financial Accounting	TBA
2020	1	Graduate	PMY7103	01	Advanced Pharmacy I	This course consists of lectures given by faculty members, visiting scholars, and graduate students, followed by discussion that will cover the latest trends in research and pharmacy.

2020	1	Graduate	PMY7207	01	Anti-virus and Infective Agents 1	Overview of anti-infective agents with focus on antiviral and antibacterial agents
2020	1	Graduate	PMY7213	01	Advanced Stereochemistry 1	Introduction to the methodology for the two or three dimensional stereochemistry of molecules including their properties.
2020	1	Graduate	PMY7401	01	Advanced Pharmacology 1	This course is open for students in the Master's or Ph.D. course. Students will learn basic principles of pharmacology and actions, action mechanisms and unwanted side effects of drugs. In addition, students will acquire recent information and research trends through discussion of leading scientific journals in the fields of basic and applied pharmacology.
2020	1	Graduate	PMY7404	01	Advanced Neuropharmacology 2	This course is provided for students in the Master's or Ph.D. course. Students will learn basic and advanced knowledge to understand actions and action mechanisms of various drugs acting at the nervous system through recent research articles, references, and textbooks.
2020	1	Graduate	PMY7405	01	Advanced Drug Therapy 1	Recent advances and applications in drug therapy will be discussed. Emphasis will be placed on the drug therapy to maximize drug efficacy with minimum unwanted side effects to treat particular diseases.
2020	1	Graduate	PMY7425	01	Thesis Research in Drug Therapy 1	With this lecture, you will acquire the ability to understand research articles on the drug therapies in cardiovascular, respiratory, and gastrointestinal diseases.
2020	1	Graduate	PMY7429	01	Advanced Pharmacokinetics 1	This course is provided for students in the Master's or Ph.D. courses. On completing this course, students will: 1) be able to calculate the basic pharmacokinetic parameters from clinical data. 2) be able to use basic pharmacokinetic parameters to calculate practical dosage regimens 3) be able to calculate and/or describe the effects of various abnormal clinical conditions and/or drug interactions on the parameters
2020	1	Graduate	PMY7520	01	Advanced Pharmaceutical Biochemistry 1	In the present course, we will introduce the molecular mechanisms, underlying etiology, carcinogenesis, and the pathological states of individual stages. In addition, conventional chemotherapeutic drugs and putative anti-carcinogenic agents, developed utilizing novel mechanisms of actions as well as molecular biology techniques are introduced.
2020	1	Graduate	PMY7523	01	Thesis Research in Pharmaceutical Biochemistry 1	This course is provided for students in the Master or Ph.D. course. Students will be guided to fulfill thesis research for Master or Ph.D. degree in biochemistry and learn how to write dissertation and research papers.
2020	1	Graduate	PMY7707	01	Thesis Research in Pharmaceutics 1	This course is provided for students in the Master or Ph.D. course. Students will be guided to fulfill thesis research for Master or Ph.D. degree in medical immunology and learn how to write dissertation and research papers.
2020	1	Graduate	PMY7709	01	Advanced Physical Pharmacy I	This lecture is focused on the multiple factors to be considered in the formulation development as well as their pharmaceutical application to optimize the therapeutic efficacy as well as to improve the patient's compliance.
2020	1	Graduate	PMY7717	01	Thesis Research in Pharmaceutical Engineering 1	This course is provided for students in the Master and Ph.D. course. Students will be guided to fulfill thesis research for Master and Ph.D. degree in pharmaceutical engineering and learn how to write dissertation and research papers.
2020	1	Graduate	PMY7719	01	Pharmaceutical Physics	This course will provide theoretical backgrounds especially on the physicochemical issues for the product development including solid state properties, process issues during the formulation development, and material properties affecting physical changes in the final dosage forms.
2020	1	Graduate	PMY7721	01	Advanced smart medicine	This lecture covers the basic principles and applications of BT/NT/IT-based convergence technology for the development of smart medicines that combine simultaneous diagnosis, therapeutics, and monitoring. It also deals with the nonclinical/ clinical evaluation methodology and regulatory issues of smart medicines.
2020	1	Graduate	PMY7722	01	AI Analytics and Clinical Applications in Pharmacology	To understand the collection, construction, and analysis of genomic big data for the precision medicine and to explore the latest research trends and practical possibilities in the personalized pharmacotherapy.
2020	1	Graduate	PMY7723	01	AI assisted Drug Discovery	This lecture covers the basic theory and practice based on case-by-cycle application cases (innovative drug design, drug repositioning) of AI-based discovery and drug development.
2020	1	Graduate	PMY7802	01	Advanced Preventive Pharmacy 2	This course will review the latest literature on hygienic chemistry, with an emphasis on the disposition of toxic compounds, toxic mechanism, and biological self-defense mechanism.
2020	1	Graduate	PMY7806	01	Thesis Research in Preventive Pharmacy 2	This course is provided for students in the Master or Ph.D. course. Students will be guided to fulfill thesis research for Master or Ph.D. degree in medical immunology and learn how to write dissertation and research papers.

**2020-2 Course Description**

Year	Semester	Level of Study	Course Code	Code Number	Course Name	Course Description
2020	2	Undergraduate	ACS2005	02	Understanding Film Production	Students will learn all phases of pre-production, production and postproduction. Students work in small teams on focused short projects. Each team will finish a short video. <u>Open to Film major only, Freshman (Offered spring semester.) 3 credits</u>
2020	2	Undergraduate	FIL2080	01	Screening of Modern Film	This class will be dedicated to screening and discussing on modern film of worldwide to understand history, industry and aesthetics of modern film. <u>Open to Film major, (Offered spring semester.) 1 credits</u>
2020	2	Undergraduate	FIL2083	02	Aesthetics of Film	An intensive study of film aesthetics, with a different form as well as study of film fundamental theories. Examination of a variety of films with particular emphasis on aesthetic strategies. <u>Open to Film major, (Offered fall semester.) 3 credits</u>
2020	2	Undergraduate	FIL4084	02	Experimental Film Capstone Design	Film art or art film? Experimental filmmakers have always been excluded from the film industry as well as from the art market, yet they have continually pushed the art of film to new limits. So what position do they hold? What have been their influences and their innovations? How to understand their work in the context of narrative and documentary cinema and of contemporary art? This course will be an overview of experimental, avant-garde filmmaking from the beginning of cinema to the present. <u>Open to Film major, Junior &amp; Senior. (Offered every semester) 3 credits</u>
2020	2	Undergraduate	PAI2016	01	Fundamental Painting 2	A continuation of Fundamental Painting1. Students are exposed to the origins and purposes of painting and the range of possibilities offered by both traditional and contemporary approaches.
2020	2	Undergraduate	BIS2021	01	Abhidharma Buddhism	This course is a general survey of Abhidharma Buddhism. After a brief introduction to its canonical literature, it deals with the development of Abhidharmic philosophical systems, such as the Sarvastivada. This course focuses on investigating the basic concepts of Abhidharma Buddhism, such as dharma, the consciousness process, karma and rebirth.
2020	2	Undergraduate	BIS2025	01	Philosophy of Prajna	This subject is concerned with the essence of prajna, the process and method of gaining prajna. While studying it, we read the scriptures and treatises of Mahayana Buddhism including Prajna Sutra.
2020	2	Undergraduate	BIS4010	01	Pali	This lecture aims at learning the Pali language which is one of the oldest Prakrit languages known as Middle Indo-Aryan and is different from Sanskrit, the Old Indo-Aryan. From the Buddhist point of view, Pali is older than Sanskrit since Prakrit is the language of the Early Buddhist tradition. Through learning this language we can access the Pali tipitaka, the one and only complete collection of the early Buddhist texts.
2020	2	Undergraduate	BIS4013	01	Esoteric and Tibetan Buddhism	This course will introduce the student to the main teachings of Esoteric Buddhism and its assimilation in Tibet. We will address the question of the special characteristics of Esoteric Buddhism that differentiate it from other forms of Mahayana, and we will gain some insight into the history of Tibetan monasteries, their rituals, meditation practices and the philosophical doctrines.
2020	2	Undergraduate	BIS4017	01	Seon Culture Theory	The examination of the contents and its methods of the desirable Seon culture through the theory and practice of the Seon culture which exists in various fields of the life of modern people.
2020	2	Undergraduate	BIS4047	01	World Religions	Objective study of world religions: their origins, developments, and histories. Special attention will be given to the issue of the historical nature of religions and hermeneutical method of interpretations.
2020	2	Undergraduate	GEO2045	01	Geographical Information System	The class provides basic concepts and mostly hands-on experience for students to bridge geographic problems and GIS approaches. The class uses ESRI's ArcGIS as the major software and covers step-by-step GIS practice in the real world including working with public domain data, getting data into GIS, creating GIS database, performing spatial analysis with vector and raster data, georeferencing data, building GIS models, making maps and layouts, and other fundamental GIS topics. <u>This course is an introductory level GIS class.</u>
2020	2	Graduate	CSE7050	01	network security	<u>This course explains theories and implementations of the advanced computer network security on the top of the undergraduate computer network security.</u>
2020	2	Graduate	EME7006	01	Organic electronics 2	This lecture will cover the materials, process and operating mechanism of organic thin film transistors. In addition, recent representative research papers are discussed in the class.
2020	2	Graduate	EME7016	01	Seminars on Energy Materials	New energy technologies requires new materials and energy requirements and at last advances step by step. Also Energy materials meet the tough conditions on conversion, transport, storage and use of that with the economic feasibility so that is very difficult to development and needs plenty of time. The purpose of this curriculum is understanding about energy materials which underlying facilities of energy on past and future.
2020	2	Graduate	EME7039	01	Advanced Lecture for Energy Materials	This lecture introduce various energy materials such as organic electroluminescence, supercapacitor, and battery materials.
2020	2	Graduate	ENE6010	01	Broadband Wireless Communication System	Broadband wireless communication system and its core technology in LAN or PAN are lectured.
2020	2	Graduate	ENE7006	01	Advanced Integrated Circuits	The fabrication technology of integrated circuits are treated. Topics include unit processing steps such as oxidation, epitaxy, diffusion, lithography, evaporation, and etching, and their application to the fabrication of core devices such as transistors, diodes, resistors, and capacitors.
2020	2	Graduate	ENE7058	01	Pattern Recognition	Topics include basic theories for pattern recognition; random vector; hypothesis testing; parametric classifier; non-parametric classifier; feature extraction and linear mapping; and clustering.
2020	2	Graduate	ENE7090	01	Theory of Control Apparatus	<u>This course covers topics relating to control apparatus theories.</u>
2020	2	Graduate	GME7018	01	Optimization Theory	This course aims to give students the tools and training to recognize convex optimization problems that arise in engineering and scientific applications, presenting the basic theory, and concentrating on modeling aspects and results that are useful in applications.
2020	2	Undergraduate	ARC2021	01	Structural Mechanics of Buildings II	This lecture will emphasize the principles and analytical method of the statically indeterminate structure, based on the practical reinforced and steel framed building. The focus will be on force and displacement, which are the major analytical issues in the nonlinear member analysis as in the case of buildings with large members. However, stress and strain, which are critical in the linear small scale structure (as in the curriculum of material mechanics and elasticity in the area of mechanical engineering), will be excluded. The free-body diagram, which lays out the force and displacement of each element of the structures, will be examined closely in order to increase students' understanding of the topics.
2020	2	Undergraduate	ARC4042	01	Construction Planning and Control	A variety of time management techniques are to be covered especially for design and construction phases. Individual in-class exercise problems and a group term project will be assigned. Commercial scheduling softwares that are widely utilized in the construction industry will be introduced.
2020	2	Undergraduate	ARC4043	01	Building Mechanical System	This subject introduces the theory and practice of air-conditioning system, plant system, various kinds of equipments and ducts, etc. Besides, it covers energy-saving design strategy and plans about the application methods, operation methods, economic efficiency and thermal comfort of air-conditioning system in building.
2020	2	Undergraduate	ARC4059	01	Reinforced Concrete Design Structure Analysis	The purpose of this lecture is to provide fundamental information necessary for the student to design, construct, and supervise safe and durable target reinforced concrete structures and to work in a structural design office, at building sites, or in an architectural design office. The lecture will emphasize general concepts, principles and the practical use of the Ultimate Strength Design Method.
2020	2	Undergraduate	ARC4060	01	Application of Computer Software for Architectural Engineering	This subject allows students to use computer system and program by learning the theory and practice in parts of building structure, building construction and management, and building environment and equipment system.
2020	2	Undergraduate	ARD2011	01	Introduction to Architectural Engineering	Introductory overview of architectural practice in architectural design and the related fields focusing on design process, building science and construction market, project management, communication with client and developer, social responsibility and professional role, etc.
2020	2	Undergraduate	ARD4036	01	Computer Application to Architecture	Comprehensive studies on the application methodology of walk through, texture and shadow simulation including 2D drawing and 3D model by means of BIM-based CAD and 3D modeling software to provide an overview of the visualization of design computing applications and their use in practice.
2020	2	Undergraduate	ARD4038	01	Urbanism and Public Realm	This course is an introductory lecture that overview the field of urban public space in city design. We will study the quality of public realm in urban environment as well as formal design language of form, structure and dimension for urban public space. The course proceed as a pair of literature reviews of theoretical framework as well as cases of urban design intervention for urban public places of exemplary projects of particular location including street, boulevard, square, plaza, common, garden, park, waterfront, university campus, etc.
2020	2	Undergraduate	CEN2023	01	Introduction to Environmental Engineering	Environmental engineering has been defined as the branch of engineering that is concerned with protecting the environment from the potentially deleterious effects of human activity protecting human populations from the effects of adverse environmental factors, and improving environmental quality for human health and well being. thus, understanding of the nature of the environment and of human interaction with it is a necessary prerequisite to understand the work of the environmental engineer. In this course, the overall concept of environmental engineering is introduced and the physical, chemical, mathematical, and biological principles of defining, quantifying, and measuring environmental quality are discussed.
2020	2	Undergraduate	CEN2024	02	Chemical & Biochemical Design Primer	Recently, New products and processes are usually designed using a DFSS (Design for Six Sigma). In this study, We understand the chemical engineering basic principles and the scientific design for Chemical and Bio-chemical engineering through Six Sigma method. (such as, Define, Measure, Analyze, Design, Verify)
2020	2	Undergraduate	CEN2033	01	Instrumental Analysis for Chemical and Biochemical Engineering	For the instrumental analysis required for chemical and biochemical Engineering such as organic materials such as food, medicine, cosmetics and other chemical products and Inorganic of electronic materials, energy materials and nano particles, the equipments for the microstructure, surface morphology, chemical composition, binding structure and energy, thermal properties, spectral properties and surface chemical and physical state will be studied. Through the study of the basic principles and system for these instrumental analyzers, the relationships between physical properties for the applications and chemical and biochemical materials can be understood.
2020	2	Undergraduate	CEN4049	02	Chemical Engineering Thermodynamics	This course explores the applications of thermodynamics law as they affect chemical engineering. Topics are thermo-characteristics of fluids, expansion, compression and refrigerations, phase equilibrium, chemical equilibrium; thermodynamical analysis of chemical processes; the proper relations and mathematics of properties; multicomponent systems and multicomponent phase equilibrium in chemically reacting systems; heterogeneous equilibrium; Gibbs phase rule, and electro chemical process.
2020	2	Undergraduate	CEN4054	01	Electronic Information Display Materials	Understanding of principles of electric information devices and materials.

2020	2	Undergraduate	CEN4063	01	Display Materials Engineering	The course covers materials for electronic information display devices that are applicable to LCD, PDP, LED, OLED and other device. Especially focused on operating principles, materials, and current technical trend.
2020	2	Undergraduate	CEN4065	01	Catalytic Reaction Engineering	This course deals with topics in the reactor design related to nonisothermal reactions and heterogeneous catalysis. The class includes lectures on the basic theories in the kinetics and reactor design principles of nonisothermal reactions, and the fundamental concepts in heterogeneous catalysis, catalytic reaction and reactor design.
2020	2	Undergraduate	CEN4072	01	Process Modelling and Simulation	This course teaches students how to simulate chemical processes using computers, allowing them to design chemical processes based on simulation. In particular students will learn how to use process simulator software to develop flowsheets simulating sequences of process units to solve design problems. In addition students will learn about modelling so that they can understand how the process simulators work and so they can develop their own simulation models.
2020	2	Undergraduate	CEN4074	02	Heat and Mass Transfer	This course is concerned about heat and mass transfer theory widely used in chemical processes. First, it deals with the principle of heat transfer phenomenon by conduction, convection, and radiation, and then mathematical formulation to solve various heat transfer problems. It also discuss mass transfer theory similar to heat transfer and can handle design of some heat and mass transfer devices.
2020	2	Undergraduate	CEN4078	01	Biomedical & Biomaterial Engineering	A review of the fundamental principles involved in the design of engineered tissues and organs with the aid of various stem/progenitor cell populations and biomaterials. For the development of functional tissue regenerative medical applications, fundamental information about tissue engineering and stem cell researches will be studied. This course covers a fundamental physiology of human tissues, cutting-edge stem cell sciences & its medical applications, degradable & implantable polymeric biomaterials, drug delivery strategies, immuno-cancer therapy, artificial organs, and various applications in tissue engineering & regenerative medicine applications. In addition to the principles of cell/molecular biology and anatomy, a series of in vivo animal studies will also be discussed.
2020	2	Undergraduate	CIV2010	01	Fluid Mechanics	The basic theory is learned on fluid property, hydrostatics, hydrostatics, and pipe flow. The ability to apply the basic understanding to the real-world is also pursued.
2020	2	Undergraduate	CIV2034	01	Civil Engineering Geology	This course deals with the formation of rock, its characteristics, and geological structures. Emphasis will be made on applications of geology to civil engineering works.
2020	2	Undergraduate	CIV2035	01	Environmental Engineering and Experiment	The Earth suffer from the pollutions caused by the rapid urbanization, excessive use of pesticides, wastewater from the industry, greenhouse effect from excess use of fossil fuel, radioactive contamination by the accidental oil spill and so on. This lecture will discuss about the relationship between bio-system including human beings and the Earth and perform basic experiments related with the environmental problems.
2020	2	Undergraduate	CIV4013	01	Rock and Tunnel Engineering	Understand basic concepts in rock mechanics, such as the difference between rock and rock mass and stress-strain characteristics of rock mass, and learn applied knowledges for rock slope and tunnel designs, including stereographic analysis and rock classifications methods.
2020	2	Undergraduate	CIV4022	01	Contracts and Legal Issues in Construction	This course deals with various legal issues in the construction industry while focusing on construction contracts. Topics covered in the course includes domestic construction policies, elements of contracts, breach of contracts, Construction Torts, disputes resolution techniques, and so on.
2020	2	Undergraduate	CIV4069	01	Geographical Information System for Water Environmental Engineers	Students will learn basic GIS skills for collection, processing and analysis of spatial data in the field of water environmental engineering. Decision making processes for optimal solutions based on GIS modeling and scenario analysis will be also discussed.
2020	2	Undergraduate	CSE2017	01	Data Structure	This course introduces data structures and algorithms to solve problems by computers in an effective way. Students learn and practice the methods to implement these with a programming language. Topics include arrays and linked lists, structures such as stacks, queues, trees, graphs, and various methods for searching and sorting of data.
2020	2	Undergraduate	CSE4066	01	Computer Engineering Capstone Design 1	This class deals with the engineering design problem which is defined as the process of devising a system, component, or process to meet the desired needs. Among the fundamental elements of design process, the establishment of design objectives and criteria, researches on the previous works, idea making, analysis, presentation for the design proposal, and collaborative design are focused in this course. Students form a team and work on a project throughout the semester.
2020	2	Undergraduate	CSE4067	01	Computer Engineering Capstone Design 2	This class deals with the engineering design problem which is defined as the process of devising a system, component, or process to meet the desired needs. Continued with the Computer Engineering Capstone Design 1 course, the implementation of detailed system components and their integration, testing, presentation of the design report, engineering ethics are done during this course with team members.
2020	2	Undergraduate	CSE4067	02	Computer Engineering Capstone Design 2	This class deals with the engineering design problem which is defined as the process of devising a system, component, or process to meet the desired needs. Continued with the Computer Engineering Capstone Design 1 course, the implementation of detailed system components and their integration, testing, presentation of the design report, engineering ethics are done during this course with team members.
2020	2	Undergraduate	CSE4067	03	Computer Engineering Capstone Design 2	This class deals with the engineering design problem which is defined as the process of devising a system, component, or process to meet the desired needs. Continued with the Computer Engineering Capstone Design 1 course, the implementation of detailed system components and their integration, testing, presentation of the design report, engineering ethics are done during this course with team members.
2020	2	Undergraduate	CSE4067	04	Computer Engineering Capstone Design 2	This class deals with the engineering design problem which is defined as the process of devising a system, component, or process to meet the desired needs. Continued with the Computer Engineering Capstone Design 1 course, the implementation of detailed system components and their integration, testing, presentation of the design report, engineering ethics are done during this course with team members.
2020	2	Undergraduate	CSE4076	01	Technical Presentation	Learn to write technical reports and academic papers, and develop ability to give presentations in English. Class participants will write a short (three pages) technical paper that describes the project from Computer Engineering Capstone Design class and give two presentations (one intermediate and the final) in English.
2020	2	Undergraduate	EME2005	01	Thermodynamics of Materials II	The purpose of Thermodynamics of Materials is to understand and expect the various chemical reactions and physical phenomena in material engineering. It is important to understand the physical and mathematical meanings of the four laws of thermodynamics and to apply them. Therefore, in this lecture, based on the understanding of the four laws of thermodynamics, various reactions (gas reaction, solid reaction and so on) are discussed deeply.
2020	2	Undergraduate	EME2020	01	Energy and material experiment1	Students are going to study basic theories and carry out experiments on materials synthesis, analysis and evaluation.
2020	2	Undergraduate	EME4020	01	Organic Electronic Materials and their Applications	Organic functional materials, which are molecular substances, are widely used as the core materials in the electronics industry. In this lecture, synthesis, molding and functionalization of organic macromolecular materials used for solar cell, OLED, TFT-LCD liquid crystal and color filters are covered. Also, the operation principles of the corresponding devices will be introduced.
2020	2	Undergraduate	EME4034	01	Nano-Bio Science	Recent development of nanotechnology enables birth of nano-bio convergence science which has high application in industrial fields. Nano-bio convergence is utilized to enhance performances of already-developed biosensors or diagnostic materials and to mimic the efficiency of biological systems. In this study, we are going to deal with various topics in nano-bio convergence to obtain field-oriented ability.
2020	2	Undergraduate	ENE2008	04	Circuit Theory II	The goal of this subject are to build an understanding of concepts and ideas explicitly in terms of previous learning, and to emphasize the relationship between conceptual understanding and problem-solving approaches.
2020	2	Undergraduate	ENE2011	03	Physical Electronics II	This lecture is the second part of the Physical Electronics I. The topics covered include: modeling of microelectronic devices, such as MOS devices and BJTs, relation of electrical behavior to internal physical processes, and understanding the uses or limitations of various models.
2020	2	Undergraduate	ENE2016	02	Signals and Systems	This course covers fundamentals of signal and system analysis, with application drawn from filtering, audio and image processing. Topics include convolution, Fourier series and transforms, sampling and discrete-time processing of continuous-time signals. Simulations are practiced in the Laboratory.
2020	2	Undergraduate	ENE2016	03	Signals and Systems	This course covers fundamentals of signal and system analysis, with application drawn from filtering, audio and image processing. Topics include convolution, Fourier series and transforms, sampling and discrete-time processing of continuous-time signals. Simulations are practiced in the Laboratory.
2020	2	Undergraduate	ENE4017	01	Electrical Machinery II	This course covers the induction machine, special induction motor, synchronous machine and the running principles, characteristics and applications of the synchronous generator and the synchronous motor.
2020	2	Undergraduate	ENE4017	02	Electrical Machinery II	This course covers the induction machine, special induction motor, synchronous machine and the running principles, characteristics and applications of the synchronous generator and the synchronous motor.
2020	2	Undergraduate	ENE4033	03	Semiconductor Device Process	Topics include the fundamental principles of integrated circuit fabrication processes, physical and chemical models for crystal growth, oxidation, ion implantation, etching, deposition, lithography, and back-end processing. The lecture also offers physical bases and practical methods of silicon VLSI chip fabrication, or the impact of technology on device and circuit design.
2020	2	Undergraduate	ENE4035	01	Power Control & Application	This course is an introduction to properties and industrial applications of the electric motor using power conversion devices; study of AC and DC drive control system such as the inverter, converter and chopper.
2020	2	Undergraduate	ENE4050	01	NanoElectroMechanical Systems	Nano- or Micro-systems, literally are very small systems or systems made of very small components. And the NEMS (NanoElectroMechanical Systems) concept has grown to encompass many other types of very small things, including thermal, magnetic, fluidic, and optical devices and chemical/bio systems, with or without moving parts. We will study the fundamentals of nano-systems in fabrication, process integration, material, mechanics of simple nano structures, and major applications.
2020	2	Undergraduate	ENE4066	01	Introduction to Automatic Control	This is based on the foundations of automatic control system analysis, and simulation and system design using the MATLAB. This course covers state variable models, linear feedback control system characteristics, frequency response methods, stability in the frequency and time domain, and the design of state variable feedback systems.
2020	2	Undergraduate	ENE4071	01	Antenna Engineering	This class learns the principle of the antenna, the meaning of various antenna parameters necessary for the design, measurement, and evaluation of the antenna. Students also learn the radiation, emissivity, and the antenna temperature, and the principle of the radiometer. In addition, students accomplish a given design assignment using theory and simulation in the laboratory.

2020	2	Undergraduate	INC2021	02	Probability and Random Process	In this class students will learn about probability, statistics and random processes for engineers. This course is offered to undergraduates students and covers studies on the basic concept of probability, random variables, basic stochastic and calculation processes. The nature and application of irregular variables and irregular processes are introduced as well as the basic concept of probability is redefined. Especially, students will examine examples of deterministic and stochastic systems and applications to statistic digital signal processing, optimization of filter and the queuing theory.
2020	2	Undergraduate	INC2024	01	Computer Algorithm and Practice	This class teaches the basic algorithms used in computer science. In particular, algorithms such as dynamic programming, greedy, branch-and-bound, and divide-and-conquer will be studied. This class also includes computer algorithm laboratories.
2020	2	Undergraduate	INC2024	02	Computer Algorithm and Practice	This class teaches the basic algorithms used in computer science. In particular, algorithms such as dynamic programming, greedy, branch-and-bound, and divide-and-conquer will be studied. This class also includes computer algorithm laboratories.
2020	2	Undergraduate	INC2025	01	Mathematics for Information and Communication Engineering	This course covers fundamental mathematics essential to understanding various theory relating to information and communication engineering. This course also deals with MATLAB programming to understand how mathematics can be implemented with a program.
2020	2	Undergraduate	INC2028	01	Computer Organization	This course is for understanding of computer organization concepts in terms of computer hardware and software. Scope of the course includes include combinational and sequential digital logic design, hardware control, CPU organization, computer operational principals, register transfer operations, pipelining techniques, etc. By the end of semester, students will be able to understand computer organization and architecture, how to design digital logics that consist the internal hardware of a computer, and techniques for improving computer performance.
2020	2	Undergraduate	INC2028	02	Computer Organization	This course is for understanding of computer organization concepts in terms of computer hardware and software. Scope of the course includes include combinational and sequential digital logic design, hardware control, CPU organization, computer operational principals, register transfer operations, pipelining techniques, etc. By the end of semester, students will be able to understand computer organization and architecture, how to design digital logics that consist the internal hardware of a computer, and techniques for improving computer performance.
2020	2	Undergraduate	INC4057	01	Database Systems	This class studies the following subjects including database concepts, database system architecture, database model, database language.
2020	2	Undergraduate	INC4085	01	Capstone Design 2	This class deals with the engineering design which is defined as the process of devising a system, component, or process to meet desired needs. Among the fundamental elements that are taught in the capstone design class are the establishment of objectives and criteria, synthesis, analysis, construction, testing, and evaluation. Students form a team and work on a project throughout the semester. Senior students must take one capstone design class for graduation.
2020	2	Undergraduate	INC4085	02	Capstone Design 2	This class deals with the engineering design which is defined as the process of devising a system, component, or process to meet desired needs. Among the fundamental elements that are taught in the capstone design class are the establishment of objectives and criteria, synthesis, analysis, construction, testing, and evaluation. Students form a team and work on a project throughout the semester. Senior students must take one capstone design class for graduation.
2020	2	Undergraduate	ISE2012	01	Industrial Systems Programming	This course is targeted to Industrial and Systems Engineering students for improving their Java programming skills enough for implementation of practical Industrial Engineering solutions. For this purpose, this course will cover Java programming quick review, basic data structures and algorithms and applications of such techniques to practical Industrial Engineering problems.
2020	2	Undergraduate	ISE2013	01	Introduction to Industrial and Systems Engineering	This class covers the basic understanding of Industrial and Systems Engineering and the role of I & SE Engineers in the industrialized society by dealing with various topics in that area. The class is processed using several formats such as lectures, designs, and field trips.
2020	2	Undergraduate	ISE4005	01	Advanced Manufacturing Processes	In the manufacturing area nowadays, a new manufacturing system has been established and practiced using the information technology. In this class, students will have the basic understanding of modern manufacturing systems based on the traditional manufacturing systems. Homeworks and team projects are given to provide the experience of modern manufacturing systems.
2020	2	Undergraduate	ISE4008	01	Introduction to Financial Engineering	This course will help the student understand what is driving financial choices in the company. The topics addressed in this course mainly include capital budgeting, risk and return, capital structure and dividend policy and financing, etc. Although the course emphasizes corporate finance, the student will also learn about the basics of the derivatives and risk hedging.
2020	2	Undergraduate	ISE4022	01	Product Development	We study the fundamental theory and application of the product development. Students are required to develop a new product by applying the process covered in the class. Some tools for the product development include CAD and Rapid Prototyping. Also, some topics on PLM(Product Lifecycle Management) are to be studied.
2020	2	Undergraduate	ISE4023	01	Technology Management	This course deals with a broad spectrum of managerial issues associated with forecasting promising technology, evaluating technological assets, managing R&D projects, planning new product development, devising technology strategies and so on. For this, it emphasizes on theoretical backgrounds, practical cases and intensive interactions among students.
2020	2	Undergraduate	ISE4042	01	Industry AI	The main subject of the course includes the construction and application process of AI in Industry 4.0 environment. In the Industry 4.0 environment, a huge amount of industry data are stored in a Big Data form and the decision making utilizing the data and the learned knowledge out of it by AI algorithms must play the key role in the real time management of the manufacturing and service system. Therefore, the steps in the whole process from the big data accumulation stage to the knowledge extraction and application stage are dealt with in the lectures. Traditional AI techniques and new algorithms such as deep learning algorithms are taught with theory explanation and practices as course projects.
2020	2	Undergraduate	MEC2011	01	Kinematics	Kinematics is the study of the geometry of motion and the base of the design of mechanisms and machinery. Kinematic analysis involves determination of position, displacement, rotation, speed, velocity, and acceleration. Students are encouraged to participate in the design project of simple mechanism as a team, where they learn how to use the knowledge and to communicate with the other members in the same team.
2020	2	Undergraduate	MEC2012	01	Dynamics	Dynamics describes and analyzes the motion of particles subjected to forces. Fundamental principles of dynamics, kinematical relations, equation of motion, impact and momentum, work and energy are studied.
2020	2	Undergraduate	MEC2012	02	Dynamics	Dynamics describes and analyzes the motion of particles subjected to forces. Fundamental principles of dynamics, kinematical relations, equation of motion, impact and momentum, work and energy are studied.
2020	2	Undergraduate	MEC2015	01	Fluid Mechanics	Fundamental principles of incompressible fluid mechanics are developed beginning with properties of fluids, continuum concept, hydrostatic pressure and analytical methods based on conservation of mass, momentum, energy and dimensional analysis with applications in pipe flow and boundary layer flow.
2020	2	Undergraduate	MEC2015	02	Fluid Mechanics	Fundamental principles of incompressible fluid mechanics are developed beginning with properties of fluids, continuum concept, hydrostatic pressure and analytical methods based on conservation of mass, momentum, energy and dimensional analysis with applications in pipe flow and boundary layer flow.
2020	2	Undergraduate	MEC2025	01	Introduction to MATLAB for Mechanical Engineers	The objective of this course is twofold. First, introduce the language and features of MATLAB as an analyzing tool and second, introduce and reinforce the problem solving methodology as practiced by engineers.
2020	2	Undergraduate	MEC2025	02	Introduction to MATLAB for Mechanical Engineers	The objective of this course is twofold. First, introduce the language and features of MATLAB as an analyzing tool and second, introduce and reinforce the problem solving methodology as practiced by engineers.
2020	2	Undergraduate	MEC4032	01	Vibrations and Noise	Elementary theories of mechanical vibration, analysis of vibration characteristics of machines are studied. Vibration suppression design for improving machine's endurance and safety are also covered.
2020	2	Undergraduate	MEC4065	01	Special Design	This course is a prerequisite for capstone design track-project. Students have chance to learn and practice various design methods and presentation skills as a team player.
2020	2	Undergraduate	MEC4065	02	Special Design	This course is a prerequisite for capstone design track-project. Students have chance to learn and practice various design methods and presentation skills as a team player.
2020	2	Undergraduate	MEC4068	01	Combustion and Fuel Cell	Based on the knowledge of fuels and combustion, fundamental features of internal combustion engine and fuel cell vehicles are learned together with hybrid cars. Detailed subjects also include intake, exhaust and cooling systems.
2020	2	Undergraduate	MEC4069	01	Intelligent Control of Robot System	Investigate the governing factors of automatic controller on robot systems. The course provides understanding linear model, feedback control, designing PID controller to understand mechanism, dynamics, trajectory planning of robots for lab practice.
2020	2	Undergraduate	MEC4080	01	Capstone Design Track-Project	Students develop the ability of problem-solving techniques of real product design and experience working in teams to carry out their own project for practical world.
2020	2	Undergraduate	MEC4089	01	Digital Manufacturing	This course provides an introduction to the manufacturing process for engineering materials to understand the fundamentals of technical considerations involved in manufacturing products through a literature review and maker processes.
2020	2	Undergraduate	MEC4093	01	Soft Robotics	Soft robots can adapt to external conditions through structural reconfiguration or variation of their mechanical properties, which made from highly compliant materials or multiple hard-bodied parts. This course covers the fundamentals of materials, fabrication methods, mechanisms and simulations of soft robots. Finally, we will discuss how to realize and embody the theories on the design methodology of soft robots.
2020	2	Undergraduate	MME2045	01	Introduction to Programming in C	This course is targeted to the students who have no or very little programming knowledge and experience. The goal of this course is to get you familiar with programming concepts at a relatively slow pace. In this course you will learn how to use computers to solve computational problems, by writing programs for the computer using the ANSI C programming language. We will explore the basic concepts of computer systems, algorithm design, data types, and program structures.
2020	2	Undergraduate	MME4081	01	Multimedia Image Processing	Based on primitive knowledge of still images learned earlier, a variety of middle-level still image processing technologies and introductory processing technologies of moving image are presented. In addition, experimental practices are given to understand images wide as a stand point of programmer by programming the learned image processing algorithms with C or C++.

2020	2	Undergraduate	MME4088	01	Human Computer Interaction Capstone Design	This course provides the students with fundamental theories of HCI. Students will learn basic theories, development procedures, interaction styles, and design patterns of HCI contents. Furthermore, students will be given a chance to develop their own HCI contents interacting with computers, robots and embedded systems using various I/O sensors (image, sound, gesture etc.) Consequently, students will deeply understand the extended concept of HCI and experience its usefulness.
2020	2	Undergraduate	MME4112	01	Robot Software Engineering	The design patterns and software engineering is the essential theories to design large-scale software projects. In this course, students learn design patterns, software engineering, and a series of processes for applying them to robots. Additionally, students learn various design patterns and UML design techniques, and method to apply them to robotics.
2020	2	Graduate	JAP6025	01	Study of Japanese Novels(1)	Students explore the modern Japanese novel and its background in literal ways.
2020	2	Graduate	JAP7006	01	Japanese Phonology(2)	Examines the correlation between Japanese phonetics and phonology as well as its phonological characteristics.
2020	2	Graduate	JAP7048	01	Study on Korea-Japan diplomatic relations	Students examine the characteristics of Korea-Japan diplomatic relations in terms of politics and diplomacy.
2020	2	Graduate	JAP7049	01	Study on Modern and Contemporary Japanese Politics	Students examine the characteristics based on the background of the establishment of modern and contemporary Japanese politics.
2020	2	Graduate	JAP7051	01	Comparative research of Korean-Japanese industry	The purpose of this class is to comparatively analyze the industries of Korea and Japan to increase understanding of the modern economic society.
2020	2	Undergraduate	CHI4060	01	Studies Chinese Syntax	This is an advanced course for analyzing structures of various sentence types and for improving the ability of correctly reading Chinese sentences.
2020	2	Undergraduate	CHI4074	01	Chinese Exam Practice	It is a course to practice such as HSK(Hanyu Shuiping Kaoshi), BCT(Business Chinese Test) issues. Improve the level of Chinese tests by repeatedly training theory and grammatical explanations and practices.
2020	2	Undergraduate	EIT2044	01	English Grammar for Specific Purposes	This course provide opportunities for students to solidify knowledge about English grammar and practice applying the knowledge in English reading and writing. The course not only deals with various aspects of the traditional grammar, but also explores its sociolinguistic function in real use.
2020	2	Undergraduate	EIT2044	02	English Grammar for Specific Purposes	This course provide opportunities for students to solidify knowledge about English grammar and practice applying the knowledge in English reading and writing. The course not only deals with various aspects of the traditional grammar, but also explores its sociolinguistic function in real use.
2020	2	Undergraduate	EIT2046	01	Fundamentals of English Writing	This course provides a basic foundation for academic writing in English. Students will learn about the writing process, editing, outlining, various grammar points, and will even practice various styles of essays including narrative, informative, cause-effect, and problem-solution.
2020	2	Undergraduate	EIT2050	01	Fundamentals of English Listening & Speaking 2	This course is an advanced course designed to enhance students' listening and speaking proficiency, which will improve their communication competence and interpretation skills. Students will be exposed to a variety of English texts in education, arts, politics, economy, etc.
2020	2	Undergraduate	EIT2052	01	Debate & Public Speaking in English	The purpose of this course is to cultivate students' logical thinking and persuasive speaking skills. Students will learn the rules of debate, logical relations, effective arguments, and rhetorical techniques. They then will be given opportunities in class to make their own speech and have feedback from the teacher and classmates.
2020	2	Undergraduate	EIT4050	01	English Pragmatics and Translation	Through this course, the students can learn the key issues of English pragmatics and translate texts with focus on the pragmatic aspects of discourse. They are expected to understand the relations between pragmatics and semantics and to practise translation drawing on the theories learned. The theories to be covered in this course include speech acts, implicature and metaphor.
2020	2	Undergraduate	EIT4067	01	Academic English Writing and Composition	This course, an advanced academic writing course, provides students with opportunities to practice professional writing. Students will learn the structure of writing and make thesis statements. Based on the process-oriented approach, students will be engaged in drafting, writing, and revising and be given feedback on their multiple drafts.
2020	2	Undergraduate	EIT4068	01	Language through Multicultural Perspectives	This course is based on the understanding that the world is multicultural and that globalization is bringing us all together. As students tackle complex topics about this multicultural and diverse world, they simultaneously practice all four vital skill sets in English language acquisition. In this class, all four language skills will be developed through the common thread of multicultural studies.
2020	2	Undergraduate	EIT4073	01	Korean-EnglishConsecutiveInterpreting2	This course provides students with advanced training in consecutive from Korean to English. Exercises of increasing difficulty are introduced to equip students with the basic techniques of interpreting and to increase their confidence and competence in consecutive interpreting. Students will also be trained to deal with the basic problems and psychological constraints associated with this type of interpretation.
2020	2	Undergraduate	EIT4075	02	Capstone Project 2 (Capstone Design)	This is an opportunity for students to receive advice and guidance on their thesis and to fulfill other graduation requirements by using the skills and knowledge they have gained during their freshman, sophomore and junior years.
2020	2	Undergraduate	EIT4076	01	AI English Teaching Practicum	This course introduces students to a needs-based, learner-centered approach to designing curricula, courses, and materials. In this course, each student will develop a course unit outline, plan and create materials for one lesson, and demonstrate and evaluate the micro-teaching project using artificial intelligence (AI).
2020	2	Undergraduate	ENG2030	01	Global English Composition	Students learn basic English sentence patterns and how to use composition tools such as reasons, examples, chronology, and comparison as well as essay forms. This course also helps students use words and idioms effectively in writing.
2020	2	Undergraduate	ENG2030	02	Global English Composition	Students learn basic English sentence patterns and how to use composition tools such as reasons, examples, chronology, and comparison as well as essay forms. This course also helps students use words and idioms effectively in writing.
2020	2	Undergraduate	ENG2031	01	The World of English Language and Culture	This course aims to initiate students to the world of English language and culture by experiencing both written and electronic reading materials, and to bring up a prime mover of the global culture.
2020	2	Undergraduate	ENG2039	01	Contemporary American Novels and Culture	This course aims to understand contemporary American culture through reading contemporary American novels and watching films.
2020	2	Undergraduate	ENG4043	01	Feminism and English Literature	Through literary works, it aims at understanding biased views of females shown in English literature. It also critically examines the anti-feminism tradition in the English literature, comparing with feminist literature in the 19th and 20th century.
2020	2	Undergraduate	ENG4048	01	Global English Cultures and Listening	The Purpose of this course is to study the global cultures and their varieties through the understanding of the global english cultures and the listening of their cultural texts, seeking to understand the English cultures in Australia, Newzealand, South Africa, India and so on.
2020	2	Undergraduate	ENG4048	02	Global English Cultures and Listening	The Purpose of this course is to study the global cultures and their varieties through the understanding of the global english cultures and the listening of their cultural texts, seeking to understand the English cultures in Australia, Newzealand, South Africa, India and so on.
2020	2	Undergraduate	ENG4058	01	PresentationinEnglish	This class aims to develop the skills and techniques of presentation in English highly demanded at companies. By practicing various types of cultural discourses in English speaking countries, students can learn and increase not only their capacity to present in English but also the skills to work together and get faster adjusted to new environments.
2020	2	Undergraduate	HIS2011	01	Readings in European History	Selective readings of the western language materials with emphasis on the training in doing independent research with western documents.
2020	2	Undergraduate	HIS4035	01	Contemporary History of Korea	Contemporary History of Korea aims to help students to deepen their understandings on the contemporary history of Korea and its significance by studying the political, economic, social, cultural and diplomatic developments after 1945 liberation of Korea.
2020	2	Undergraduate	JAP2013	01	Basic Japanese Composition for Foreign Student	The objective of this course is to develop the basic principle of effective writing and consider effective Korean language studies as well.
2020	2	Undergraduate	JAP2014	01	Korea and Japan Language Communication	Students of this class learn the traits of Japanese language and linguistic behavior to communicate a native speaker of Japanese fluently.
2020	2	Undergraduate	JAP2014	02	Korea and Japan Language Communication	Students of this class learn the traits of Japanese language and linguistic behavior to communicate a native speaker of Japanese fluently.
2020	2	Undergraduate	JAP2016	01	Introduction to Japanology	Examining structural characteristics of the Japanese social systems like politics, economy, education, etc.
2020	2	Undergraduate	JAP2022	01	Mass Media Japanese	This course will learn about various fields in Japan through mass media as like newsletter, broadcasting, movie and SNS. Students can master Japanese expressions which often appear in the media and focus on Japanese current events.
2020	2	Undergraduate	JAP2025	01	History of Modern Japanese Politics and Diplomacy	This course provides training in the high level of Japanese Composition through letters, e-mail, SNS, official business letters. Students can master Japanese expressions which can be used in trade with Japan and industries.
2020	2	Undergraduate	JAP4012	01	History of Japanese	Looking at the whole Japanese language history, and appreciating the outstanding works in each period.
2020	2	Undergraduate	JAP4013	01	Studies of comparison between Japanese and Korean Literature	Focuses on understanding the differences between Korean and Japanese literature.
2020	2	Undergraduate	JAP4014	01	Korea and Japan Introduction of Contrastive Linguistics	This course aims to theorize the similarity and difference of Japanese and Korean in terms of phonology, vocabulary, grammar, and expression based on the comparative studies, and to study the trait of each language.
2020	2	Undergraduate	JAP4016	01	History of modern Japanese business	This course is designed to deal with processes of Japanese business modernization with emphasis on Japanese response to external impacts and institutional changes after the modern era
2020	2	Undergraduate	JAP4020	01	Understanding of History of Japan	This course introduces the Japanese history from Nara era to modern era of Japan.
2020	2	Undergraduate	JAP4023	01	Understanding of Modern and Contemporary Japanese Literature	In this course, students will appreciate some Japanese modern literatures as like novel, essay, poetry and analyze the inclination of writers.
2020	2	Undergraduate	JAP4024	01	Japanese Trade Practice(Capstone design)	This course focuses on special topics of how to do exporting and importing business, by introducing the procedures of contracts, settling the terms of contracts, writing letters of credit, preparing insurance documents on Japanese trade.
2020	2	Undergraduate	PHI2053	01	Thinking and Being	Opposing a long-standing orthodoxy of the Western philosophical tradition running from ancient Greek thought until the late nineteenth century, Frege argued that psychological laws of thought must be distinguished from logical laws of thought. Logic does not describe how we actually think, but only how we should. Yet by thus sundering the logical from the psychological, Frege was unable to explain certain fundamental logical truths, most notably the psychological version of the law of non-contradiction.
2020	2	Undergraduate	PHI4046	01	Philosophy of Law and Society	This course deals with the concepts and thoughts in social philosophy. Moreover, it studies the relation between the theories of utopia and their realization. By doing this, this study enables us to have the critical viewpoint of society and the sound viewpoint of ethics.

2020	2	Undergraduate	PHI4078	01	Phenomenology and the Philosophy of Mind	Phenomenology and the Philosophy of mind is a branch of philosophy that studies the nature of the mind, mental events, mental functions, mental properties, consciousness, and their relationship to the physical body, particularly the brain. The mind-body problem, i.e. the relationship of the mind to the body, is commonly seen as one key issue in the philosophy of mind, although there are other phenomenological issues concerning the nature of the mind that do not involve its relation to the physical body, such as how consciousness is possible and the nature of particular mental states.
2020	2	Undergraduate	PHI4080	01	Philosophy of Cognitive Science	The aim of this course is on understanding the cognitive science and philosophical problems raised in this field. We look at various philosophical issues relating to the scientific study of cognition and the brain. Questions about the nature of cognition itself, the methodology of cognitive science and the role of cognitive science in society will be considered.
2020	2	Undergraduate	PRI5079	01	English Conversation 3	1. To improve students' command of spoken English, by providing frequent opportunities for discussion. 2. To build on students' vocabulary and increase their range of expression. 3. To review and practice necessary grammar structures. 4. To improve students' listening skills so that they can understand a wide range of spoken texts. 5. To upgrade students' writing skills. Students will practice writing emails, letters and simple paragraphs. 6. To enhance students' reading skills with a variety of magazine-type texts
2020	2	Undergraduate	PRI5079	02	English Conversation 3	1. To improve students' command of spoken English, by providing frequent opportunities for discussion. 2. To build on students' vocabulary and increase their range of expression. 3. To review and practice necessary grammar structures. 4. To improve students' listening skills so that they can understand a wide range of spoken texts. 5. To upgrade students' writing skills. Students will practice writing emails, letters and simple paragraphs. 6. To enhance students' reading skills with a variety of magazine-type texts
2020	2	Undergraduate	PRI5080	01	English Conversation 4	1. To improve students' command of spoken English, by providing frequent opportunities for discussion. 2. To build on students' vocabulary and increase their range of expression. 3. To review and practice necessary grammar structures. 4. To improve students' listening skills so that they can understand a wide range of spoken texts. 5. To upgrade students' writing skills. Students will practice writing emails, letters and simple paragraphs. 6. To enhance students' reading skills with a variety of magazine-type texts.
2020	2	Undergraduate	PRI5080	02	English Conversation 4	1. To improve students' command of spoken English, by providing frequent opportunities for discussion. 2. To build on students' vocabulary and increase their range of expression. 3. To review and practice necessary grammar structures. 4. To improve students' listening skills so that they can understand a wide range of spoken texts. 5. To upgrade students' writing skills. Students will practice writing emails, letters and simple paragraphs. 6. To enhance students' reading skills with a variety of magazine-type texts.
2020	2	Undergraduate	PRI5097	01	OPic	This course will provide the practical sense and english speaking and listening. Especially, this course is specialized for the students who are the preparing for Employment. The objective of this course is to improve the verbal communication skills. Also, it is for helping the students to gain confidence and a test of proficiency in English.
2020	2	Undergraduate	PRI5097	02	OPic	This course will provide the practical sense and english speaking and listening. Especially, this course is specialized for the students who are the preparing for Employment. The objective of this course is to improve the verbal communication skills. Also, it is for helping the students to gain confidence and a test of proficiency in English.
2020	2	Undergraduate	DUF2005	01	Introduction to Legal Studies	The course is designed to introduce students to some of the basic skills needed for the study of law and to give the student a basic understanding of some aspects of the English legal system.
2020	2	Undergraduate	DUF2005	02	Introduction to Legal Studies	The course is designed to introduce students to some of the basic skills needed for the study of law and to give the student a basic understanding of some aspects of the English legal system.
2020	2	Undergraduate	LAW4083	02	Electronic Commerce Law	Electronic commerce is now ever increasing its market share with the advent of information society, so are the legal issues waiting to be solved. This class deals with these issues and their legal framework, especially among others electronic contract, electronic signature, consumer protection, and electronic financial finance.
2020	2	Undergraduate	LAW4120	02	International Disputes and Remedies	The UN Charter explicitly burdens the obligations for all state members to solve any international dispute being regarded as a fundamental principle of modern international law. Regarding this important principle of international law, this course will deal with various modes of dispute settlement mechanisms and remedies including judicial and non-judicial ones. The aims of this course are for the students not only to enhance basic knowledge on various judicial institutions including the International Court of Justice, the Permanent Court of Arbitration, the Dispute Settlement Body of the World Trade Organization, and other international criminal courts and tribunals but also to reinforce the ability to review the limits and problems of them in critical point of view.
2020	2	Graduate	BIO6034	01	Nucleic Acid Biochemistry	Nucleic acid biochemistry course provide understanding of structural and biochemical features of DNA and RNA and which biochemical pathway mediate DNA replication / DNA damage repair and RNA transcription / modification. Biological significances of nucleic acid metabolism will be also discussed.
2020	2	Graduate	BIO8013	01	Bioinformatics	Using genomics and proteomics databases, the course is designed to learn how to mine and analyze data
2020	2	Graduate	BIO8022	01	Topics in Genetics	This course deals with the current topics on genetics.
2020	2	Graduate	BIO8040	01	Special Problems in Environmental Biology	The students majoring in the environmental Biology is given a topic and advised to solve it.
2020	2	Graduate	BME7009	01	Special Topics in Fusion Medical Devices	This course is to introduce a principle of biomedical fusion system including therapy devices, and laser system (from sensor to total devices).
2020	2	Graduate	BME7031	01	Bio Signal Instrumentation	The purpose of this curriculum is research about wide application method for bioindustry with human stem cell.
2020	2	Graduate	BME7065	01	Endogenous biomaterial engineering	In injury site, endogenous factors in body stimulate immune system and subsequently induce self-healing regeneration. This course will address the fundamental and applied aspects of endogenous factors in self-healing mechanism.
2020	2	Graduate	BME7067	01	Cell death	The goal is to understand the various forms of cell death mechanisms in the body.
2020	2	Undergraduate	BES2020	01	Environmental Soil Chemistry	This course introduces the interactions between soil solids, precipitates, and solution phases. However, students understand the soil fundamentals: soil mineralogy, permanent charge & variable charge in clay mineral crystal structure, cation exchange capacity (CEC), adsorption, weathering and buffering, soil colloidal chemistry, acidic and basic soils, salinity, and models of solution and solid phase interactions.
2020	2	Undergraduate	BES4006	01	Environmental Biotechnology & Lab	This course focuses on basic knowledge and research protocols to conserve and restore environmental resources with the application of biotechnological and environmental sciences. The course addresses scientific manners how to develop environmentally sound components and bio-materials and raise capacity building to establish bio-venture on environmental science. The laboratory introduces students to biotechnological techniques which are currently being used in biological analysis and compounds and raises to apply the technologies to the industries.
2020	2	Undergraduate	BES4009	01	Environmental Microbiology	Microbial interactions in soils, water, extreme environments and biofilms. Modern methods for studying microbial ecology, role of microbes in nutrient cycles and biogeochemistry. Use of microorganism for mitigating man-made environmental problems of industrial, agricultural, and domestic origin.
2020	2	Undergraduate	BES4035	01	Air quality modelling	Lecture deals with basic principles and operating methods of various air quality models to achieve the ability of predicting the diffusion and effects of air pollutants according to topography and weather information.
2020	2	Undergraduate	BIO2011	01	Cell Biology and Lab	Subjects including the components and their characteristics of the cell, structural and functional comparison between the prokaryotes and eukaryotes, structure and function of the cell membrane, and cell division are studied. Experiments related with the subjects are performed.
2020	2	Undergraduate	BIO4022	01	Bioinformatics	This course is designed to teach the underlying concepts and algorithms of the computational tools used in bioinformatics and the actual applications of these tools using biological databases such as NCBI.
2020	2	Undergraduate	BIO4032	01	Biophysics	Biophysics is the study of the physical characteristics of biological organisms and their cellular components. This class will discuss various aspects of biological macromolecules including nucleic acids (DNA and RNA) and protein to introduce how the structural features of these molecules affect their biological functions. In addition, the principles of various modern biotechnologic tools will be discussed.
2020	2	Undergraduate	BIO4033	01	Neurobiology	As an introduction, the history of neuroscience and types of neuronal cells are briefly examined. The ionic basis of membrane potential and action potential is studied. Synaptic transmission is dealt with in detail by reviewing neurotransmitters and their receptors. Structures of the central and peripheral nervous system are introduced. Sensual systems including seeing, hearing, tasting, and touching are reviewed. The mechanism of learning and memory is touched at the molecular level.
2020	2	Undergraduate	BME2022	01	Fundamentals of basic medical engineering	The 'Fundamentals of basic medical engineering' course covers basic concepts of biomedical engineering and their connection with the spectrum of human activity. It serves as an introduction to the fundamental science and engineering on which biomedical engineering is based. Case studies of medical products illustrate the product development-product testing cycle, patent protection, and FDA approval. It is designed for science and non-science majors.
2020	2	Undergraduate	BME2030	01	Biomedical Programming 2	This course develops the ability to apply computer programming techniques to various biomedical fields.
2020	2	Undergraduate	BME4050	01	Immunological Biotechnology & Experiments	This curriculum is fostering the ability to apply biotechnology based on immunology by understanding various immunological and physiological mechanisms caused by the interaction between the components of the immune system and their interaction and curing experimental techniques.
2020	2	Undergraduate	BME4054	01	Biomedical Signal Processing System	This course provides students with fundamental knowledge for analyzing biomedical signals and systems. This includes time domain signal analysis, Fourier series and transform, sampling theory, Laplace transform, Z-transform, and several filter design techniques.
2020	2	Undergraduate	FOO2011	01	Food Microbiology	The lecture will be covered on basic information of microbiology associated with food including taxonomy of microorganism, physiology, metabolism, cell structure and function, cell growth, genetic backgrounds. In addition, it will be covered on food manufacturing using food microorganisms, biological storage, lactic acid bacteria and health.
2020	2	Undergraduate	FOO2022	01	Meta-analysis: systematic evaluation of foods and functional foods	This course introduces methods to conduct a meta-analysis of epidemiologic studies on foods and health outcomes.
2020	2	Undergraduate	FOO4017	01	Fermentation Technology	The microbiology and biotechnology of fermented foods (Kimchi, soy sauce, soybean paste, rice wine, fermented milk and vinegar) and state of the art method of fermentation will be carried out.

2020	2	Undergraduate	FOO4029	01	Food Immunology Lab	This experimental lecture introduces immunological techniques such as animal cell culture, gene and protein expression and provides immune responses to ingested food components.
2020	2	Graduate	SEM7005	01	Advanced Solid Physics(1)	Lecture on the physical properties of condensed material like as semiconductor and metal. Crystal structure, reciprocal lattice, crystal binding, phonons, free electron fermi gas, energy bands are included.
2020	2	Graduate	SEM7045	01	Quantum Nano-Devices	This focuses on magnetic, semiconductor, and superconductor nano-devices which can be understood in terms of quantum mechanical analysis. Particularly, quantum transport and computing based on nano-devices will be discussed.
2020	2	Undergraduate	CHE2009	01	Analytical Chemistry II	This course provides to understand basic principles and techniques of quantitative chemical analysis including precipitation, complex equilibria of heterogeneous solution, principles of electrochemistry, spectrophotometric analysis and separation techniques.
2020	2	Undergraduate	CHE4047	01	Instrumental Analysis and QC/QA	This course includes gas chromatography, high-performance liquid chromatography, UV/Vis spectrophotometry, IR spectroscopy, atomic absorption analysis, and thermal and radiochemical analysis. In addition, their applications for QC/QA will be discussed.
2020	2	Undergraduate	CHE4051	01	Chemical Biology	- Student will be taught life activity at molecular level based on the knowledge General chemistry and Organic chemistry. - Through this course, the students will take a theoretical background for identification of disease mechanism, drug discovery and diagnosis. - The course will mainly focus lecture and discussion but sometimes includes team projects.
2020	2	Undergraduate	DUF2004	01	Introduction to Natural Science	In science, to make students realized that natural science refers to a naturalistic approach to the study of the universe, which is understood as obeying rules or laws of natural origin.
2020	2	Undergraduate	MAT2027	01	Vector Analysis	The topics in this course are vector-valued function, linear transformation, quadratic form, differentiation on , line integral, double integral, surface, area, surface integral, Green theorem, Stokes theorem.
2020	2	Undergraduate	MAT4025	01	Applied Numerical Analysis	Numerical analysis involves the study of methods of computing numerical data. In many problems this implies producing a sequence of approximations; thus the questions involve the rate of convergence, the accuracy of the answer, and the completeness of the response.
2020	2	Undergraduate	MAT4030	01	Differential Geometry II	Coordinate patch, Simple surfaces, Tangent plane and the normal vectors, First and second fundamental forms, Principal curvatures, Gaussian and mean curvatures, Rodrigue formula, Gauss-Weigarten equation, Fundamental theorem of surfaces, Manifolds, Tensors and Gauss-Bonnet theorem.
2020	2	Undergraduate	MAT4038	01	Numerical Linear Algebra	This course will cover several solutions of linear system of equations such as Gaussian elimination, pivoting, LU decomposition, iteration methods. It will also cover least square methods, high dimensional Newton methods, eigenvalue problem, matrix diagonalization, QR decomposition, singular value decomposition.
2020	2	Undergraduate	MAT4039	01	Differential Equation	The topics in this course are existence and uniqueness theorem, series solution, linear system of differential equation, nonlinear differential equation, stability.
2020	2	Undergraduate	PHY4001	01	Electromagnetism 2	In this subject, the basic theories and equations of electrodynamics are introduced from the set of equations of the electrostatics discussed in E&M I. The famous Maxwell equations are derived and it is shown that electromagnetic waves can propagate in free space as the result of the Maxwell equations. It is shown that the propagation of electromagnetic waves in different media as well as reflection and refraction can be explained by the solutions of Maxwell equation and the boundary conditions.
2020	2	Undergraduate	PHY4005	01	Thermal & Statistical Physics 2	The purpose of statistical physics is to understand macroscopic behaviors of many particles in terms of microscopic viewpoints of each particle which is governed by basic principles in physics. This course covers classical and quantum statistical mechanics, and simple applications on the basis of thermal physics I. The detailed topics are kinetic theory and transport processes in gases, magnetic properties of materials, partition function, thermal properties of materials, and low temperature physics with quantum mechanical treatments.
2020	2	Undergraduate	PHY4012	01	Quantum Physics II	With basic concepts of quantum theory, system/structures of quantum mechanics(QM), and methodology fo QM, real physical phenomena will be studied in the view of atomic structures, electromagnetic wave, and atomic interactions.
2020	2	Undergraduate	PHY4016	01	Nuclear Physics II	- $\beta$ -decay -Direct reaction theory -Compound nuclear theory.
2020	2	Undergraduate	PHY4019	01	Particle Physics	Fundamental structure of matter will be explored. Elementary particles and their interactions are introduced along with theoretical concepts such as quantum theory and relativity. Basic experimental method will be also covered.
2020	2	Undergraduate	PHY4020	01	Solid State Physics II	This course is after taking the solid state physics deal with the Fermi gas in metal of free electron model, energy band, semiconductor, Fermi surface and metal, Plasmon, polariton and polaron of optical processes, exciton, superconductivity, and so on..
2020	2	Undergraduate	PHY4045	01	Physics for Optical Materials	This lecture covers the measurement and analysis of various electrical and optical materials property based on optics. And this lecture includes the application and mechanism of electrical and optical devices based on material properties.
2020	2	Undergraduate	PHY4046	01	Algorithms for Physics	Algorithms such as deep learning and big data play important roles to study physical phenomena in modern physics. Here, students will understand and code various modern algorithms by Python, Mathematica, or TensorFlow. Particularly, we expect that a student can write the deep learning algorithm.
2020	2	Undergraduate	PHY4047	01	Physics of Energy	This course is designed to provide a fundamental and systematic introduction to the scientific principles and concepts related to the Physics of Energy. It will cover the following scopes: the introduction and recent trends of energy sources, the operating principles and mechanism of energy devices and systems, the basic interdisciplinary study and knowledge of physics, chemistry and materials science for improving energy generation and conversion efficiency.
2020	2	Undergraduate	PSS2005	01	Introduction to Electricity and Magnetism	The goal of this course is to understand electromagnetic phenomena in vacuum and materials. Electric field, potential, electric transport in materials, electromagnetic laws, electromagnetic induction, Maxwell equation, radiation in materials are covered.
2020	2	Undergraduate	SEM2006	01	Semiconductor Physics	The study on crystal structures, energy band theory, electrons and holes, impurities in semiconductors, quantum statistics, and transportations of charges under equilibrium and non-equilibrium condition.
2020	2	Undergraduate	SEM4006	01	Theory of wave propagation	Based on Maxwell's equations, propagation characteristics of electromagnetic waves are derived and discussed in unbounded and bounded medium. Transmission-line equations are derived for distributed circuits. Properties of transmission lines are discussed and Smith chart is presented to develop matching techniques.
2020	2	Undergraduate	SEM4009	01	Semiconductor Devices and Lab 2	The theoretical and experimental studies on physical properties and operating principles for the field effect transistors like as MESFET, JFET, MOSFET.
2020	2	Undergraduate	SEM4015	01	Principle of Display Devices and Engineering	The study and understanding on operating principles and structures for flat panel display devices like as TFT-LCD, OLED, FED.
2020	2	Undergraduate	SEM4062	01	Introductory Memory Devices and Materials	To teach fundamentals of semiconductor-based memory devices and to introduce novel memory devices which are recently developed.
2020	2	Undergraduate	SEM4069	01	System Semiconductor Design	Recently, most of the electronic systems are integrated into a semiconductor chip. Specially, the conventional big modules are changed into small chips in the field of communication, control, and computer. Thus we study the system semiconductor design. After we study the basic theory of a system, the principle of communication, the basic characteristics of a control, and the computer theory, the design methodology is discussed.
2020	2	Undergraduate	SEM4071	01	Microwave Circuit Design	Daily development of semiconductor technology leads evolution of communication systems. The sub-micro transistor devices including conventional RLC devices are introduced and their extremely-high frequency performances are analyzed for circuit-design purpose. EHF integrated circuits such as high-gain amplifiers, low-noise amplifiers, oscillators, and power amplifiers are discussed and their applications to satellite/wireless communications are also presented.
2020	2	Undergraduate	STA2005	01	Exploratory Data Analysis	The techniques of exploratory data analysis help us to cope with a set of data in a fairly informal way, guiding us toward structure relatively quickly and easily. The primary purpose of the course is to introduce the general steps and operations that make up practical exploratory data analysis.
2020	2	Graduate	PMY7104	01	Advanced Pharmacy 2	A continuation of Advanced Pharmacy 1 course, lectures will be given by faculty members, visiting scholars, and graduate students. They will be followed by discussions covering the latest trends and advances in research.
2020	2	Graduate	PMY7205	01	Advanced Techniques in Drug Discovery and Development-1	Students will develop the knowledge of R&D processes for new chemical drug, including lead discovery and optimization process.
2020	2	Graduate	PMY7214	01	Advanced Stereochemistry 2	Application of informations acquired from Advanced Stereochemistry 1 to the identification and the synthetic methodology of the stereochemicals.
2020	2	Graduate	PMY7218	01	Advanced Synthetic Biologics 2	In this course, we will examine the potential applications of the concepts covered in Advanced Synthetic Biologics 1 for the development of novel classes of drugs that mimic the molecules in biological system.
2020	2	Graduate	PMY7219	01	Thesis Research in Advanced Synthetic Biologics 1	This course is provided for students in the Master or Ph.D. course majoring medicinal chemistry. Students will be guided to fulfill thesis research for Master or Ph.D. degree in advanced synthetic biologics and learn how to write dissertation and research papers.
2020	2	Graduate	PMY7402	01	Advanced Pharmacology 2	This course is open for students in the Master's or Ph.D. course. Students will learn pharmacological theories and research techniques in the fields of pharmacokinetics and pharmacodynamics through presentations and discussions of reviews and original articles published in the leading scientific journals.
2020	2	Graduate	PMY7403	01	Advanced Neuropharmacology 1	This course is open for students in the Master's or Ph.D. course. Students will learn basic and advanced knowledge to understand actions and action mechanisms of various drugs acting at the nervous system through recent research articles, references, and textbooks.
2020	2	Graduate	PMY7412	01	Advanced Pharmacogenomics	In this course, students will learn and discuss the role of pharmacogenomics in relation to wide interindividual variation of drug disposition and to the possible contribution to the personalized pharmacotherapy.
2020	2	Graduate	PMY7422	01	Methods in Pharmacokinetics II	Study how to design and accomplish the in vitro and in vivo experimental tools for the pharmacokinetic investigation in preclinical and clinical levels. Also learn the statistic concepts and program related to the pharmacokinetic fields.
2020	2	Graduate	PMY7426	01	Thesis Research in Drug Therapy II	With this lecture, you will acquire the ability to understand research articles on the drug therapies in psychological/neurological, endocrinological, musculoskeletal, and renal diseases.



2020	2	Graduate	PMY7521	01	Advanced Pharmaceutical Biochemistry 2	This course is intended to render students understand biochemical processes, constituting biochemical processes of life and, based on this proposition, current accomplishment of life science and prospective direction of future scientific progression will be introduced.
2020	2	Graduate	PMY7703	01	Advanced Biopharmaceutics	This course will be focused on understanding the impact of biological factors, physicochemical factors and formulation factors on the absorption, distribution, metabolism and excretion of drugs.
2020	2	Graduate	PMY7705	01	Advanced Industrial Pharmacy	This course will deal with the principles and practices of the unit operation and characteristics of equipments used in pharmaceutical unit processes.
2020	2	Graduate	PMY7716	01	Sterile-product Development	This course will provide detailed information on how to prepare sterile products focusing on injections. Moreover, analytical methods, evaluation, and development process of the sterile products will be introduced together with theoretical backgrounds.
2020	2	Graduate	PMY7718	01	Thesis Research in Pharmaceutical Engineering 2	This course is provided for students in the Master and Ph.D. course. Students will be guided to fulfill thesis research for Master and Ph.D. degree in pharmaceutical engineering and learn how to write dissertation and research papers.
2020	2	Graduate	PMY7805	01	Thesis Research in Preventive Pharmacy 1	This course is provided for students in the Master or Ph.D course. Students will be guided to fulfill thesis research for Master or Ph.D degree in medical immunology and learn how to write dissertation and research papers.
2020	2	Graduate	PMY7819	01	Cardiovascular Toxicology	With an understanding basic Toxicology, advanced organ-specific toxicology will be delivered with an emphasis on cardiovascular system. Topics include pathophysiology of circulation system, the cardiovascular effect of xenobiotics, and current advances in cardiovascular toxicology.
2020	2	Undergraduate	PMY2014	01	Introductory Physiology	The aim of this course is to understand the integrated functioning of the human body. To achieve this goal, this course will introduce structures and functions of major organ systems in the human body, focusing on the mechanisms of molecular, cellular, and physiological processes of each organ system.
2020	2	Undergraduate	PMY2025	01	Pharmaceutical Biochemistry 2	In this course, we study the synthesis, degradation, function and interaction of various genes and proteins, and the in vivo role of lipids and carbohydrates.
2020	2	Undergraduate	PMY2026	01	Pharmaceutical Immunolog	Understand the immune system at the molecular level to protect our body from pathogenic bacteria, viruses and fungi. Understand how to develop and apply vaccines and therapeutic agents for pathogenic bacteria, viruses and fungal diseases.
2020	2	Undergraduate	PMY2027	01	Synthetic Pharmaceutical Chemistry 1	This course aims to cultivate general knowledge on the unit reactions of advanced organic chemistry required for the research and development of new drugs. Students will acquire knowledge on synthetic methods of pharmaceuticals and structure-activity relations of drugs.
2020	2	Undergraduate	PMY4015	01	Medicinal Chemistry1	Medicinal chemistry concerns discovery, development, identification, and interpretation of the mode of action of biologically active compounds including drugs at the molecular level. Medicinal chemistry is a highly interdisciplinary research area incorporating different branches of chemistry and biology in the research for better and new drugs (Drug Discovery). In this course, students will learn and understand physicochemical properties, pharmacodynamics and pharmacokinetics, modes of action, structure and activity relationships of various drugs in wide use in clinic and develop insight to and research capability for drug discovery and development.
2020	2	Undergraduate	PMY4020	01	Pharmaceutical Engineering	This course deals with the principles and practices of pharmaceutical operations including extraction, sterilization, drying, sizing and handling of powders, compression and encapsulation. In addition, this course covers the equipments used in unit operations and their characteristics.
2020	2	Undergraduate	PMY4024	01	Endocrine Pharmacology	The aims of this course is to understand physiological actions of endocrine system regulating metabolism, growth, and reproduction in human body and to learn pharmacological effects, action mechanisms, and side effects of drugs used to treat endocrine disorders.
2020	2	Undergraduate	PMY4042	01	Biodrugs	The present course is intended to provide the principle and methodology underlying the drug development through biotechnology. Also we will see which biodrugs are currently on the market and their economical values.
2020	2	Undergraduate	PMY4050	01	Geriatric Pharmacy	This course will cover understanding the differences between the elderly and other general adults, and optimal pharmacotherapy for geriatric patients in various clinical situations.
2020	2	Undergraduate	PMY4066	01	Patient Counseling	A course intended to introduce pharmacy students to techniques and skills the patients counseling in the dispensing prescriptions based on SOAP.
2020	2	Undergraduate	PMY4073	01	Pharmacokinetics	This course deals with the properties and pharmacokinetics, mechanisms, side effects, and clinical applications of drugs acting on smooth muscle, central nervous system drugs, blood diseases, inflammation and gout treatment drugs, chemotherapeutic drugs.
2020	2	Undergraduate	PMY4103	01	Pharmacotherapy of New Drugs	Learn about the global new drug development process and the therapeutic areas, mechanisms of action, side effects, and drug interactions that are characteristic of new drugs within five years of FDA approval. Learn how to share your drug information with the public by sharing it on YouTube or Wikipedia.
2020	2	Undergraduate	CRS2009	01	Understanding of Official Crime Statistics	This course studies the characteristics and utilization of official crime statistics, which is the basis for the criminal investigations, crime analysis, and crime prevention policies.
2020	2	Undergraduate	CRS2010	01	Social Psychology	Social psychology is the scientific study of how people's thoughts, feelings, and behaviors are influenced by the actual, imagined or implied presence of others. Topics include social perception, self, attitude and attitude change, social motivation and affect, group dynamics, prosocial behavior, antisocial behavior, and culture.
2020	2	Undergraduate	POS2006	01	Police Ethics	Respect for the personality of the citizens and establish anyone does not serve to compromise with any injustice or illegal warmly fair and righteous police concept uncorrupted, and based on the trust of the people that can only ethical to enforce the law according to the dictates of their conscience learning to police ethics.
2020	2	Undergraduate	POS2011	01	Community Policing	This course is about the community policing which is contrasted with the traditional policing. This class provides the knowledge of the meaning and characteristics, transition process and examples of community policing.
2020	2	Undergraduate	POS4008	01	Theory of Violent Crimes	This course aims at exploring democratic characteristics of violent offenders. The processes and consequences of violence will be deeply discussed in the context of current criminological theory and practice. The nature, theory, psychology and history of violent behavior will also be analyzed through a study of crimes of violence including homicide, rape, assault, and robbery.
2020	2	Graduate	FOO7020	01	Microbial Food spoilage	The state of the art technology of using food biopreservative, such as bacteriocin, will be taught
2020	2	Graduate	FOO7034	01	Advanced meta-analysis for systematic evaluation of foods and supplements	This course introduces methods to conduct meta-analysis (including dose-response meta-analysis) for systematic evaluation of the effect of foods or supplements on diverse health outcomes; strategy to write successful English manuscript. Upon completion of this course, students are expected to have a meta-analysis manuscript ready for submission to an international journal.
2020	2	Undergraduate	ADV2003	01	Advertising psychology & consumer behavior	This course introduced to examine theories and basic concepts of cognitive and social psychology that relate to consumers' responses to advertising messages. It is also aimed to deepen our understanding of the characteristics and relative effects of different advertising appeals. We will further explore how theories of advertising psychology and consumer behavior can be applied to the practice of advertising planning and execution.
2020	2	Undergraduate	ADV2003	02	Advertising psychology & consumer behavior	This course introduced to examine theories and basic concepts of cognitive and social psychology that relate to consumers' responses to advertising messages. It is also aimed to deepen our understanding of the characteristics and relative effects of different advertising appeals. We will further explore how theories of advertising psychology and consumer behavior can be applied to the practice of advertising planning and execution.
2020	2	Undergraduate	ADV4036	01	Global Advertising	This class is offered for students to introduce the opportunities and challenges involved in developing and implementing advertising strategies for international markets.
2020	2	Undergraduate	COS2009	01	Theories of Mass Communication	This course is designed to provide systematical understanding of mass communication phenomena. The content of the course focuses on theories and achievements in mass communication studies, debates around them, and methodological techniques to verify them.
2020	2	Undergraduate	DUF2002	01	Introduction to Social Science	The goal of this course is to help students explore the fundamental knowledge and theory of modern society. This is an introductory level class designed to address the crucial facts of social science. More importantly, this class aims at providing useful tips and information regarding successful academic life for freshmen. Therefore, first year students who are interested in Social Science field are expected to participate in this class more assertively in order to become a smart and energetic freshmen in Dongguk University.
2020	2	Undergraduate	ECO2010	01	Macroeconomics	This course is designed to enhance students understanding of two major macroeconomic phenomena- the business cycle and economic growth- and other related ones. Basic macroeconomic models of income determination, price adjustment, and economic growth will be taught. Evaluation of governments macroeconomic policies will be covered, too.
2020	2	Undergraduate	ECO2010	02	Macroeconomics	This course is designed to enhance students understanding of two major macroeconomic phenomena- the business cycle and economic growth- and other related ones. Basic macroeconomic models of income determination, price adjustment, and economic growth will be taught. Evaluation of governments macroeconomic policies will be covered, too.
2020	2	Undergraduate	ECO4008	01	Law and Economics	This course discusses the relationship between law/legal institution and the society. It introduces the Cases theorem on social costs and economically analyzes property law, contract, tort, and criminal law. Topics that are covered include conflicts of property rights, remedies for breach of contract, various liability rules for inducing due care policies to avoid accidents, optimal deterrence of crimes, death penalty, drug abuse, gun control, etc.
2020	2	Undergraduate	ECO4008	02	Law and Economics	This course discusses the relationship between law/legal institution and the society. It introduces the Cases theorem on social costs and economically analyzes property law, contract, tort, and criminal law. Topics that are covered include conflicts of property rights, remedies for breach of contract, various liability rules for inducing due care policies to avoid accidents, optimal deterrence of crimes, death penalty, drug abuse, gun control, etc.
2020	2	Undergraduate	EGC3045	01	Understanding Advertising and Public Relations	This course is intended to explore the role of advertising and PR in contemporary society and comprehend the basic objectives and functions of advertising and PR in the disciplines of profit and nonprofit organizations. Also, this course overviews the general processes of message development and media execution, and attempts to systematically incorporate various industrial cases into the theories of advertising and PR.

2020	2	Undergraduate	FIS4035	01	Cooperatives	Cooperatives studies the principles of the history, ideology, essence, mission, general rule, organization, business and then researches the history, problems, trends in Korea-Agri-Cooperatives and problems and improving points of producing organizations in the place of producing Agri-Food.
2020	2	Undergraduate	FIS4042	01	Food Industrial Organization	This subject introduces the specificity of corporation and the structure of market. The class progress is discussion and market and the competition concern with corporations.
2020	2	Undergraduate	INT2006	02	International Trade Theory	This course studies the basic concepts of trade theory such as determinants of trade flows, trade patterns, gains from trade, and international factor mobility. It also deals with the types of trade impediments, their effects on resource allocation and welfare, and possible remedies for reducing their distortional effects.
2020	2	Undergraduate	INT4038	02	Derivatives Trading	The objective of this class is to make students understand the mechanism of derivatives. To the end, students are encouraged to study the related theories of forwards, Futures, options and swaps as well as to practice the mock trading of the derivatives.
2020	2	Undergraduate	NOR4021	01	Comparative Study between North and South Korean Political System	Compares North Korean socialism and South Korean capitalism based on political, economic, social, and cultural points of view, and finds how to integrate the two different systems of North and South Korea.
2020	2	Undergraduate	POL2022	01	Political Seminar	This course help Political ideology, theory and methodology, Korea politics, comparative politics, international politics, such as the overall understanding of politics.
2020	2	Undergraduate	POL2029	01	Theories of International Politic	This course introduces 'International Relations' on the Global network, acting various transnational actors. Also it helps students to understand International Political Theories.
2020	2	Undergraduate	POL4041	01	Comparative Democracy	This course looks into transition of some thirty-five countries, mainly in Asia and Latin America, from nondemocratic to democratic political systems during the 1970s and 1980s.
2020	2	Undergraduate	POL4045	01	European Politics	This course introduces students to contemporary European politics. The focus is on the politics of major European states and the development of the European Union (EU). The first part of the course examines the political systems of major European states. Political debates in these countries concerning European integration will receive particular attention. The second part of the course concentrates on the EU: its historical development, its main institutions, and the biggest issues and debates facing the EU today (e.g. enlargement and relations with the rest of the world). The course will examine why the development of the EU has been so controversial. It also considers how the EU will develop in future. Will the EU remain an institution characterised by negotiation and cooperation between sovereign states? Or will it develop into a federal state, becoming an economic and military superpower.
2020	2	Undergraduate	POL4082	01	Democratization, Civil Wars, and Coups d'etat	This course provides opportunities to discuss about theories to explain domestic political instability and to apply those theories to real-world cases.
2020	2	Undergraduate	PUB2011	01	Policy Formation and AI(Adventure Design)	This course explores the impact of economic and political factors on public policy formulation and implementation. It uses intensive analysis, normative, and decision making models of the policy process, with special emphasis on their relationship with current policy problems.
2020	2	Undergraduate	PUB4012	01	Policy Evaluation	This course deals with the meaning of policy evaluation, the models of policy evaluation, theories, uses of policy evaluation, etc.
2020	2	Undergraduate	PUB4035	01	Personnel Administration	This course introduces the basic principle legislative and judicial background, and currently significant practice in personnel administration in the public service. It covers the roles of recruitment selection, wage and salary administration, employee development, manpower planning and other personnel functions.
2020	2	Undergraduate	PUB4042	01	Local Administration(Capstone Design)	For the purpose of supporting local governments for smooth local administration, the Local Administration Bureau carries out various measures: promoting decentralization, designing an ideal local administration system, improving the existing local administration system, positively promoting municipal mergers, developing a network system for Basic Resident Registers, encouraging regional revitalization, promoting the regional IT revolution, promoting regional internationalization, and establishing and improving the local public service personnel system. Urban administration is a synthetic study that covers most social studies to manage complicated cities. Urban administration is wider than public administration. As a city develops, citizen's demand becomes more complicated.
2020	2	Undergraduate	PUB4052	01	Quantitative Methods for Public Administration (Capstone Design)	The aim of this course is to understand quantitative methods required for the study of public administration. The main contents include the basic elements of statistics, variance analysis, correlation analysis, and regression analysis.
2020	2	Undergraduate	SOC2013	01	Population and Society	This course provides an overview of social demography. This course explores the key concepts and measures of demography and discusses the causes and consequences of population change through the population processes of fertility, mortality, and migration.
2020	2	Undergraduate	SOW2026	01	Administration in Social Welfare	Covers the concepts, historical background, importance, and principles of social welfare administration, together with the present situation of agencies and facilities in Korea.
2020	2	Undergraduate	SSC2002	07	Introduction to Economics	Principles of Economics" studies basic economic theories and applications in microeconomics and macroeconomics. Microeconomics is to understand rational decisions of individuals and firms, and the conditions and limitations of markets which are operated by individuals and firms. Macroeconomics covers economic variables important for national economy and the relationship among them, as well as the role of government policies in economies.
2020	2	Undergraduate	SSC2004	01	Introduction to Public Administration	From the former Public Administration studies, we will take controversial themes, concentrate on their research, analyze and discuss which in forth will help in organizing all the previous studies. The future of public administration studies and the present state of Korean public administration studies are the major subjects of this course.
2020	2	Undergraduate	DBA2002	01	Organizational Behavior	The purpose of this course is to understand how companies have developed unique characteristics and what issues are critical to the management of organizations. In this course, students learn individual, group, and organizational context issues such as individual differences, teamwork, communication, and leadership that significantly affect an organizational competitiveness. Throughout this course, students are expected to make active participations in class discussions and exercises.
2020	2	Undergraduate	DBA2002	02	Organizational Behavior	The purpose of this course is to understand how companies have developed unique characteristics and what issues are critical to the management of organizations. In this course, students learn individual, group, and organizational context issues such as individual differences, teamwork, communication, and leadership that significantly affect an organizational competitiveness. Throughout this course, students are expected to make active participations in class discussions and exercises.
2020	2	Undergraduate	DBA2002	03	Organizational Behavior	The purpose of this course is to understand how companies have developed unique characteristics and what issues are critical to the management of organizations. In this course, students learn individual, group, and organizational context issues such as individual differences, teamwork, communication, and leadership that significantly affect an organizational competitiveness. Throughout this course, students are expected to make active participations in class discussions and exercises.
2020	2	Undergraduate	DBA2002	04	Organizational Behavior	The purpose of this course is to understand how companies have developed unique characteristics and what issues are critical to the management of organizations. In this course, students learn individual, group, and organizational context issues such as individual differences, teamwork, communication, and leadership that significantly affect an organizational competitiveness. Throughout this course, students are expected to make active participations in class discussions and exercises.
2020	2	Undergraduate	DBA2004	01	Financial Management	Financial Management is the introductory course that deals with financial decision making based on the time value of money and the risk and return. This course also covers fundamental issues in corporate finance such as capital budgeting and capital structure, and in investments such as capital asset pricing model and valuation of stocks and bonds.
2020	2	Undergraduate	DBA2004	02	Financial Management	Financial Management is the introductory course that deals with financial decision making based on the time value of money and the risk and return. This course also covers fundamental issues in corporate finance such as capital budgeting and capital structure, and in investments such as capital asset pricing model and valuation of stocks and bonds.
2020	2	Undergraduate	DBA2004	03	Financial Management	Financial Management is the introductory course that deals with financial decision making based on the time value of money and the risk and return. This course also covers fundamental issues in corporate finance such as capital budgeting and capital structure, and in investments such as capital asset pricing model and valuation of stocks and bonds.
2020	2	Undergraduate	DBA2004	04	Financial Management	Financial Management is the introductory course that deals with financial decision making based on the time value of money and the risk and return. This course also covers fundamental issues in corporate finance such as capital budgeting and capital structure, and in investments such as capital asset pricing model and valuation of stocks and bonds.
2020	2	Undergraduate	DBA2006	01	Principles of Management Information System	This course examines topic and issue related to developing and implementing information technologies in business environment. It covers the concept of management information system, technological issue, business data communication, application of information systems, and development of information system in organization. The course covers recent technical issues and relevant references in addition to a textbook.
2020	2	Undergraduate	DBA2009	01	Business English Debate 1	Business English/Business Debate is an English language course catering to students at the business school. The course objective is to prepare students to be able to confidently and successfully function in a business English environment, critically assessing business issues and navigating business challenges in English. Students will develop and practice core business English skills in a realistic environment, through a combination of textbook and project-based activities.
2020	2	Undergraduate	DBA2010	01	Business English Debate 2	Business English/Business Debate is an English language course catering to students at the business school. The course objective is to prepare students to be able to confidently and successfully function in a business English environment, critically assessing business issues and navigating business challenges in English. Students will develop and practice core business English skills in a realistic environment, through a combination of textbook and project-based activities.
2020	2	Undergraduate	DBA2017	01	Principles of Marketing(NCS)	The course aims to explore the primary components, principles, and practices of the marketing processes. It is designed to examine how marketing functions as an important part in firms, organization, and society. In the course, students will have an opportunity to be exposed to the major areas of marketing including consumer behavior, marketing research, marketing strategies, product development, marketing channel distribution, and marketing communication strategies.
2020	2	Undergraduate	DBA2017	02	Principles of Marketing(NCS)	The course aims to explore the primary components, principles, and practices of the marketing processes. It is designed to examine how marketing functions as an important part in firms, organization, and society. In the course, students will have an opportunity to be exposed to the major areas of marketing including consumer behavior, marketing research, marketing strategies, product development, marketing channel distribution, and marketing communication strategies.

2020	2	Undergraduate	DBA2017	03	Principles of Marketing(NCS)	The course aims to explore the primary components, principles, and practices of the marketing processes. It is designed to examine how marketing functions as an important part in firms, organization, and society. In the course, students will have an opportunity to be exposed to the major areas of marketing including consumer behavior, marketing research, marketing strategies, product development, marketing channel distribution, and marketing communication strategies.
2020	2	Undergraduate	DBA2017	04	Principles of Marketing(NCS)	The course aims to explore the primary components, principles, and practices of the marketing processes. It is designed to examine how marketing functions as an important part in firms, organization, and society. In the course, students will have an opportunity to be exposed to the major areas of marketing including consumer behavior, marketing research, marketing strategies, product development, marketing channel distribution, and marketing communication strategies.
2020	2	Undergraduate	DBA2017	05	Principles of Marketing(NCS)	The course aims to explore the primary components, principles, and practices of the marketing processes. It is designed to examine how marketing functions as an important part in firms, organization, and society. In the course, students will have an opportunity to be exposed to the major areas of marketing including consumer behavior, marketing research, marketing strategies, product development, marketing channel distribution, and marketing communication strategies.
2020	2	Undergraduate	MGT4049	01	Business Strategy	The objective of this course is to make students to have integrated and strategic perspectives about management of organizations. Through lectures, case study, class discussions, and exercises, students develop abilities to analyze market trends and business environments and to make strategic alternatives. Therefore, this strategy management course encourages students to apply principles and theories learned from class to real-world context, which in turn improve their abilities to deal with rapidly changing business environments. At the end of the class, students can recognize the importance of strategies in terms of organizational competitiveness. The content of this course consists of competitive strategy, analysis of competitive advantage, and strategy formulation and implementation.
2020	2	Undergraduate	MGT4053	02	Human Resource Management	The course provides an overview of theoretical backgrounds that underlie human resource management system. Furthermore, by surveying advantages and disadvantages of human resource policies and practices, students learn the importance of human capital to the competitiveness of organizations. In addition, business environments such as cultures, norms, and customs determine the characteristics of human resource management system. In this course, students learn how Korean companies adapt theories from U.S and Europe to be compatible with their unique characteristics and environments.
2020	2	Undergraduate	MGT4072	01	Marketing Communication(Capstone Design)	This course aims to understand the field of advertising and promotion from an integrated marketing communications perspective. The followings are examined, in particular: advertising, direct and interactive marketing, use of the Internet and new media, public relations, trade promotion, and consumer promotion.
2020	2	Graduate	MBA6115	01	Operation Management	Operations management covers on how firms can better organize their daily operations so that they can deliver goods and services in an efficient manner. The first part of the course addresses how to analyze, manage, and improve processes. Especially, various cases, including Wal-Mart and Dell Online, are discussed. The second part of this course focuses on supply chain management, which is a good way for a firm to gain global competitiveness. Issues related with bullwhip effect, demand forecasting, and inventory management are discussed with relevance cases.
2020	2	Graduate	MBA6324	01	CRM.SCM	Traditionally, in business, customer and supply chain management has been viewed as a key element in business competitiveness. Recently, our society is entering the Industrial Society 4.0 after the mobile 3.0 era. In the 4th industrial society, it is expected that the traditional market concepts will be collapsed and new order of business will emerge. The collapse of the market concepts means not only that the form and value of the business is transformed into a Industry 4.0 type, but also the way of customers think and behavior is changed. The Industry 4.0 technology, which has been rapidly emerging and developing recently, is rapidly changing the form and processes of the existing manufacturing industry, and is expected to revolve the the existing SCM structure and management method. Therefore, this course focuses on issues of changing customer and supply chain management based on the fourth industrial revolution, rather than dealing with traditional CRM and SCM, and intends to help students to operate their business in the upcoming fourth industrial age.
2020	2	Graduate	MBA6928	01	Principles of Marketing	This course aims to treat various issues related to marketing functions in company. Specifically, macro marketing, marketing strategy, marketing organization and sales activities are addressed.
2020	2	Graduate	MBA6930	01	Strategic Human Resource Management	This class aims to learn the basic concepts and contemporary issues of human resource management and enhance the competencies which are needed to lead organizations. This class intends to acquire conceptual and analytical capability through study on the theories of HRM and actual cases handling the crucial issues in HRM. Students are expected to develop the ability of decision making to sort out various and complicated HRM issues from strategic view point of management.
2020	2	Graduate	MBA6931	01	Practical Leadership and Management	Students who take Practical Leadership and Management will develop the key interpersonal management, leadership, and communication skills and understanding in order to confidently and successfully function in a business environment. They will practice using time and self-management, active listening, facilitation, and motivational criticism techniques in role plays and through observation.
2020	2	Graduate	MBA7008	01	Principles of Management	This is an introductory course to management. Students will learn a broad range of management topics such as business and corporate-level strategies, ethics and social responsibility, small business and entrepreneurship, and international business.
2020	2	Graduate	MBA7016	01	Business Analysis and Valuation	The goal of this course is two-fold. First, it is intended to provide the student with basic knowledge regarding the structure of financial statements for the firm valuation purpose, encompassing Comprehensive Income Statement and Statement of Financial Position. Second, the course also provides an introduction to the use of Financial Statement information in valuing intrinsic firm value and related business decision making. These objectives are complementary in that the intelligent use of accounting information in various business decisions. In addition, the course covers differences between dividend based valuation model and free cash flow based valuation model.
2020	2	Graduate	MBA7025	01	Financial Management	Financial Management is the introductory course of the finance field lectured in business school. The course is for students to learn finance so that you can use finance to analyze and interpret observations in the financial economy that surround you. This course teaches fundamental finance concepts and practice in the real world situations. Upon successfully completing this course, students will be able to make decision which project to take, how to finance a project, how to manage various risks, etc.
2020	2	Undergraduate	EGC2104	01	Introduction to the History of Modern Art	The course is a brief overview of the History of Art starting at the turn of the century 19th Century with the Impressionist movement up to modern day contemporary artists, looking at the major movements and genres throughout this period. Students will learn to identify major works of art. They will be able to discuss the subject and/or narrative of the painting or sculpture. They will be able to comment on the composition, the scale, the framing, perspective and viewpoint, light and shade, and the media and technique used. They will be able to place the work of art into the context of the time it was created, comparing and/or contrasting it to other works.
2020	2	Undergraduate	GCR2003	01	The Structure of Language and Its Social and Historical Aspects	This course will provide broad coverage of the field of linguistics, including phonological and grammatical analysis, diversity and complexity of human languages, dimensions of language use. We will explore the systematic, rule-governed nature of human language, as well as psychological, biological, and social considerations in its use. Linguistic analysis, argumentation, and problem solving will be emphasized. This course is intended to show language from various perspectives. We will discuss various factors that influence language variations such as geographic, social, cultural, and historical factors.
2020	2	Undergraduate	GCR4002	01	Understanding Language, Neuroscience, and Human Development	This course covers human development and the functions of the brain related to language. We will discuss physical properties of human brain, especially lateralization and contralateralization of the brain. Brain disorders related to language will be discussed such as aphasia, autism and William's syndrome. We will have a chance to look at brain waves obtained from various areas in the brain that are related to sub-areas of language. We will also work on the anatomy of the head for human speech sounds. Then we will move on to what children learn from birth until two years of age. The study of how children acquire language will be one of the interesting topics. Children with different ages will make different mistakes. Based on those mistakes, we assume their developmental stages related to language. We will also discuss why adults have difficulty acquiring second languages. The exceptional cases for language acquisition such as abused children and feral children, who have been reportedly reared with wild animals, will provide interesting but sad stories and suggest how and when languages should be learned.
2020	2	Undergraduate	GCR7002	01	English Through Drama	This class is in which students will practice English through drama (stage plays and/or movie adaptations) with a focus on improvising and writing. Students will analyze motivation and conflict, write scenes, and perform drama. Students will be expected to actively participate in every class. Students will improve their confidence in speaking in front of people, learn how to react quickly in new situations, learn new ways of looking at the world, and experience writing and acting in their own scenes. Students will be able to further develop various techniques of acting, while learning how to build tension and resolve conflicts. Students will delve deeper into their English speaking and writing skills while learning a natural style of speaking English through modern drama scripts.
2020	2	Undergraduate	PRI5068	01	Advanced Academic Reading and Discussion	This class is designed to increase the reading skills and strategies for college students. Rather than reading and summarizing the materials, this course more focuses on helping students to have their own perspectives on critical reading. It is supposed that students will achieve several ways of reading various materials on their own. This class will be delivered in English only, so that those students who want to register for this class are required to possess high command of the English language.
2020	2	Undergraduate	PRI5068	02	Advanced Academic Reading and Discussion	This class is designed to increase the reading skills and strategies for college students. Rather than reading and summarizing the materials, this course more focuses on helping students to have their own perspectives on critical reading. It is supposed that students will achieve several ways of reading various materials on their own. This class will be delivered in English only, so that those students who want to register for this class are required to possess high command of the English language.
2020	2	Undergraduate	PRI5069	01	Advanced Academic Listening and Discussion	This course focuses on developing students' listening skills in an academic environment. The main aim is to develop the skills needed for academic success, with intensive practice with a variety of presentations. The strategies for lecture-listening and note-taking are reviewed and practiced with authentic texts. There will also be opportunities for in-class discussions where students can verbalize their opinions on various issues using appropriate academic language.





















2020	2	Undergraduate	RGC1034	96	English for Academic Success2	The course focuses on developing the specific skills required for academic studies and exploring strategies for success in academic learning. It also offers guidance in key study areas and provides plenty of practice to encourage learner independence. This course utilizes thought-provoking topics relevant to students at third-level education. It develops skills required for academic study, including learning how to write & format a 5 paragraph essay, vocabulary enrichment, academic language, grammar for writing, skimming & scanning reading skills and reading for general & specific information in a lecture. It also included strategies for undertaking research and dealing with concepts and vocabulary specific to a variety of majors.
2020	2	Undergraduate	RGC1034	97	English for Academic Success2	The course focuses on developing the specific skills required for academic studies and exploring strategies for success in academic learning. It also offers guidance in key study areas and provides plenty of practice to encourage learner independence. This course utilizes thought-provoking topics relevant to students at third-level education. It develops skills required for academic study, including learning how to write & format a 5 paragraph essay, vocabulary enrichment, academic language, grammar for writing, skimming & scanning reading skills and reading for general & specific information in a lecture. It also included strategies for undertaking research and dealing with concepts and vocabulary specific to a variety of majors.
2020	2	Undergraduate	RGC1034	98	English for Academic Success2	The course focuses on developing the specific skills required for academic studies and exploring strategies for success in academic learning. It also offers guidance in key study areas and provides plenty of practice to encourage learner independence. This course utilizes thought-provoking topics relevant to students at third-level education. It develops skills required for academic study, including learning how to write & format a 5 paragraph essay, vocabulary enrichment, academic language, grammar for writing, skimming & scanning reading skills and reading for general & specific information in a lecture. It also included strategies for undertaking research and dealing with concepts and vocabulary specific to a variety of majors.
2020	2	Undergraduate	RGC1034	99	English for Academic Success2	The course focuses on developing the specific skills required for academic studies and exploring strategies for success in academic learning. It also offers guidance in key study areas and provides plenty of practice to encourage learner independence. This course utilizes thought-provoking topics relevant to students at third-level education. It develops skills required for academic study, including learning how to write & format a 5 paragraph essay, vocabulary enrichment, academic language, grammar for writing, skimming & scanning reading skills and reading for general & specific information in a lecture. It also included strategies for undertaking research and dealing with concepts and vocabulary specific to a variety of majors.
2020	2	Undergraduate	RGC3009	01	Advanced College English	The activities in this course have been designed to help the students speak English more fluently and communicate more effectively in a natural and confident manner. The emphasis is on practical English communication which students may encounter in real-life situations. This emphasis on communicative usage will help prepare students for life outside the classroom when using English.
2020	2	Undergraduate	RGC3009	02	Advanced College English	The activities in this course have been designed to help the students speak English more fluently and communicate more effectively in a natural and confident manner. The emphasis is on practical English communication which students may encounter in real-life situations. This emphasis on communicative usage will help prepare students for life outside the classroom when using English.
2020	2	Undergraduate	RGC8007	01	Korean-Chinese Text Interaction	Basic Text Translation will help foreign students to improve translation skills between English into Korean by acquiring the differences between English and Korean grammars and expressions,in order to enhance Korean writing skills.
2020	2	Undergraduate	RGC8007	02	Korean-Chinese Text Interaction	Basic Text Translation will help foreign students to improve translation skills between English into Korean by acquiring the differences between English and Korean grammars and expressions,in order to enhance Korean writing skills.
2020	2	Undergraduate	RGC8007	03	Korean-Chinese Text Interaction	Basic Text Translation will help foreign students to improve translation skills between English into Korean by acquiring the differences between English and Korean grammars and expressions,in order to enhance Korean writing skills.