

Course No.	458.401	Lecture No.	001	Course Title (Subtitle)	Process and Product Design (null)	Credit	3	
Representative Instructor	Name	Lee, Jong Min (post : Professor )		Homepage	http://epel.snu.ac.kr			
	E-mail	jongmin@snu.ac.kr		Phone No.	02-880-1878			
	Interview Time/Place : Email to make an appointment / Rm. 723, Bldg. 302							
Attachment	(Korean)							
	(English)							
Prerequisite Course	(Mass and Energy Balances), 1 (Reaction Engineering 1), (Heat and Mass Transfer)							
*1.Purpose of Course	To learn the fundamental knowledge and application of conceptual process design through theory and practical term project. To learn how to use process flowsheet simulator, Aspen Plus, for steady-state modeling of major process units and entire plant. To be able to perform economic analysis of construction and operation of chemical plant.							
*2.Materials and Reference	Materials-Analysis, Synthesis, and Design of Chemical Processes (5th Ed)-Richard Turton et al.-Prentice Hall-2018							
*3.Evaluation Method	Attendance	Task	Medium	Final	Random Evaluation	Attitude	Other	Total
	5	50	0	45	0	0	0	100
	Attendance Policy		Students who are absent for over 1/3 of the class will receive a grade of 'F' or 'U' for the course. (Exceptions can be made when the cause of absence is deemed unavoidable by the course instructor.)					
	Remark of Others							
*4.Lecture Plan	Week 1: Introduction / Diagrams for understanding chemical processes (Ch. 1) Week 2: The structure and synthesis of process flow diagrams (Ch. 2) Week 3: Tracing chemicals through the process flow diagram (Ch. 5) / Understanding process conditions (Ch. 6) Week 4: Estimation of capital costs (Ch. 7) Week 5: Estimation of manufacturing costs (Ch. 8) / Engineering economic analysis (Ch. 9) Week 6: Profitability analysis (Chs. 9 and 10) Week 7: Utilizing experience-based principles to confirm the suitability of a process design (Ch. 11) Week 8: Process design simulation using Aspen Plus Week 9: Process design simulation using Aspen Plus Week 10: Synthesis of the PFD from the generic BFD (Ch. 12) Synthesis of a process using a simulator and simulator troubleshooting (Ch. 13) Week 11: Pinch technology (Ch. 15) Week 12: Pinch technology (Ch. 15) Week 13: Separation system Week 14: Advanced topics using steady-state simulators (Ch. 16) Week 15: Term project and Final exam (will follow the University's recommended schedule)							
5.References to Course Registration	Class type: fully online through Zoom or pre-recorded videos Grading: A-F (Absolute grading) No mid-term exam Final exam: offline The most latest edition of the textbook available in the US as of 2021 is 5th Ed., but we may have to use the latest edition available in Korea (to be provided in the SNU bookstore).							

6. Services for Students with Disabilities	Taking a Class	<p>Visual Impairment: Make textbooks(digital textbook, braille textbook, enlarged textbook etc.), Allow note takers</p> <p>Physical Disability: Make textbooks (digital textbook), Allow note takers and assistants</p> <p>Hearing Impairment: Allow note takers and translators, Allow lecture recording</p> <p>Health Impairment: Excuse absence due to health problems, Allow note takers</p> <p>Learning Disability: Allow note takers</p> <p>Intellectual Disability / Autism Spectrum Disorder: Allow note takers and mentors</p>
	Assignments & Evaluation	<p>Visual Impairment / Physical Disability / Hearing Impairment / Health Impairment / Learning Disability: Extend assignment deadlines, Offer alternate assignment submission and response method, Extend testing period, Offer alternate testing method, Offer different testing room</p> <p>Intellectual Disability / Autism Spectrum Disorder: Offer individualized assignments and alternative evaluations</p>
	Others	<p>Students who take this course can get appropriate level of support service including the support listed above depending on the students' individual characteristics and needs through consultation with professors and the Support Center for Students with Disabilities. If you have any questions concerning support service for students with disabilities you can contact Professor () or Support Center for Students with Disabilities (02-880-8787).</p>