

Course No.	459.600	Lecture No.	001	Course Title (Subtitle)	Topics in Petroleum and Gas Engineering (Optimization of Reservoir Management)	Credit	3			
Representative Instructor	Name	Hoonyoung Jeong (post : Assistant Professor )			Homepage					
	E-mail	hoonyoung.jeong@snu.ac.kr			Phone No.	02-880-7235				
	Interview Time/Place :									
Attachment	(Korean)									
	(English)									
Prerequisite Course										
*1.Purpose of Course	The cost of development of subsurface resources and ricks are significantly affected by where to drill injectors and producers, and how to operate them. This course covers optimization techniques for well placement and controls to minimize the cost of development of subsurface resources and ricks.									
*2.Materials and Reference										
*3.Evaluation Method	Attendance	Task	Medium	Final	Random Evaluation	Attitude	Other	Total		
	5	35	0	35	20	5	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	Introduction Gradient-based methods Steepest Gradient Method Conjugate Gradient Method Newton Methods Constrained Optimization Numerical Approximation of Derivatives Optimality Conditions and Convex Problem Robust Optimization and Stochastic Gradient Inverse Problems Optimization of Well Operating Conditions									
5.References to Course Registration	Prerequisite courses Matlab Reservoir simulation									

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>
7.Guidelines for COVID-19 confirmed cases during face-to-face class	Class	<p>Switch to non-face-to-face classes when there are confirmed cases.</p> <p>According to the guidance of SNU Health Service Center/administrative office, if necessary, the test will be conducted, and the class will be held non-face-to-face for 2 weeks.</p> <p>Even if a confirmed case occurs in a classroom or building where face-to-face classes are being held, the classes will be switched to non-face-to-face during the disinfection period according to the guidance of the administrative office.</p>
	Students	<p>Confirmed cases, suspected cases, and patients under investigation must act in accordance with the guidelines of the Korea Disease Control and Prevention Agency and also submit 「Application for Recognition of Attendance」 to the faculty to receive recognition of attendance during self-quarantine period.</p> <p>Student must attend non-face-to-face classes if possible.</p>