

1.	Title of the course	Oil and Gas Engineering
2.	Course number	CH4023
3.	Status of the course	Elective
4.	Structure of credits	3-0-0-3
5.	Offered to	UG
6.	New course/modification to	New course
7.	To be offered by	Department of Chemical Engineering
8.	To take effect from	July 2020
9.	Prerequisite	CoT
10.	Whether approved by the Department	Yes
11.	Course Objective(s): To provide fundamentals of petroleum reservoir engineering and refinery processes.	
12.	Course Content: Petroleum reservoir engineering: origin and composition of petroleum, petroleum geology, reservoir rock and fluid properties, flow of oil and gas in reservoirs, oil well drilling methods, predicting reservoir performance, enhanced oil recovery; Petroleum refinery engineering: characterization of crude oil and refinery products, crude distillation process, thermal and catalytic cracking, catalytic reforming, hydrocracking, hydrodesulfurization, light end and heavy end processes, lube oil production; Natural gas engineering: determination of natural gas properties, gas reservoir deliverability, wellbore and wellhead choke performance, gas processing, transportation, measurement and pipeline cleaning, conversion of gas to liquids.	
13.	Textbook(s): 1. Kaiser M J, Klerk A d, Gary J H and Handwerk G E, <i>Petroleum Refining: Technology, Economics and Markets</i> , 6th Edition, CRC Press (2019). 2. Terry R E, Rogers J B, Hawkins M and Craft B C, <i>Applied Petroleum Reservoir Engineering</i> , 3rd Edition, Prentice Hall (2015).	
14.	Reference(s): 1. Guo B and Ghalambor A, <i>Natural Gas Engineering Handbook</i> , 1st Edition, Gulf Publishing Company (2005). 2. Hsu C S and Robinson P R, <i>Springer Handbook of Petroleum Technology</i> , 2nd Edition, Springer (2017). 3. Katz D L and Lee R L, <i>Natural Gas Engineering</i> , 1st Edition, McGraw Hill (1990). 4. Speight J G, <i>The Chemistry and Technology of Petroleum</i> , 5th Edition, CRC Press (2014).	