CHEN 5800O - ST Applied Reservoir Engr

Fall 2026 Syllabus, Section 01, CRN 44120,

Credit hours: 3

Instructor

Vahid Atashbari

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Public Instructor Information

Instructor Title: Assistant Professor
Instructor Professional Qualifications: Ph.D, Petroleum Engineering, The University of Adelaide, 2016
Instructor Office Location: Moser 2070
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Course Description

5800O. ST Applied Reservoir Engr. Applied Reservoir Engineering. Prereq.: Consent of instructor. 1-4 s.h.
Fundamentals of reservoir engineering with applications to fluid flow in porous media. Topics include reservoir rock and fluid properties, material balance, drive mechanisms, recovery processes, and estimation of reserves. Practical problem-solving and case studies are emphasized.

Course Readings

Group	Title	Author	ISBN
Required	Applied Petroleum Reservoir Engineering, 3rd edition	Ronald E. Terry; J Brandon Rogers	9780133155587
Required	Petroleum Reservoir Dynamics	Mehdi Zeidouni	
Optional	Fundamentals of Reservoir Engineering	L.P. Dake	978-0444418302

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Week of	Reading(s)	Proposed Topic	Due/To Prepare for Class
8/24	Introduction to Petroleum Reservoirs and Reservoir Engineering Rock and Fluid Properties		
8/31	Material Balance and Governing Equations		
9/7	Flow Geometry		
9/14	Steady-State Compressible Flow		
9/21	Pseudo-Steady State Flow		
9/28	Transient Radial Flow and Drawdown Test Analysis		
10/5	Superposition Principle and Pressure Buildup Test Analysis		
10/12	Single-Phase Gas Reservoirs	Midterm Exam	
10/19	Gas-Condensate Reservoirs		
10/26	Undersaturated Oil Reservoirs		
11/2	Saturated Oil Reservoirs		
11/9	Single-Phase Fluid Flow in Reservoirs		

11/16	Water Influx Displacement of Oil and Gas	
11/23	Enhanced Oil Recovery	
11/30	History Matching	
12/7		Final Exam on Monday, Dec 7, 13:00-15:00

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.