



Course title and number	PETE 489: Waterflooding
Term (e.g., Fall 200X)	Spring 2016
Meeting times and location:	RICH 302 MWF 08:00-08:50 am
Instruction	Resident students and distance learning

Course Description and Prerequisites

Fundamentals and theory of water flooding; application of fractional flow theory; strategies and displacement performance calculations; wettability; relative permeability, and rock-water interaction.

Prerequisites

None

Learning Outcomes and Course Objectives

The objective of the class is to teach basics of waterflooding concepts, help students to develop understanding towards hydraulic fracturing fundamentals by reviewing polymer flooding basics and combining it with waterflooding knowledge .

Instructor Information

Name	Berna Hascakir, Assistant Professor
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Office hours	MWF 03:00-04:00 pm
Office location	401N Richardson Building

Berna Hascakir joined Texas A&M University, Petroleum Engineering Department as an assistant professor in April 2012. Her BSc and MSc degrees are both from Environmental Engineering. She holds a PhD degree in Petroleum and Natural Gas Engineering from Middle East Technical University, Ankara, Turkey. During her PhD, she investigated experimentally, numerically, and analytically the recovery characteristics of heavy oil and oil shale samples with electrical and electromagnetic heating methods. Then, she has pursued postdoctoral studies in the Energy Resources Engineering Department at Stanford University. She studied the dynamics of in-situ combustion experimentally using X-Ray computerized tomography, and numerically analyzed relative permeability changes with temperature for cyclic steam injection into diatom reservoirs. Afterwards, She served as a senior heavy oil reservoir engineer at Schlumberger in Venezuela, UK, and Colombia, and as an in-situ combustion consultant at Pacific Rubiales Energy before she joined Texas A&M University. She is the recipient of 2014 SPE Junior Faculty Award and 2015 SPE Innovative Teaching Award. She has coauthored several technical papers on reservoir engineering.

Textbook and/or Resource Material

G. Paul Willhite, Waterflooding, SPE Textbook Series Vol. 3, 1986, ISBN:978-1-55563-005-8, and Related technical papers.

Grading Policies

Homework.....	40%
Mid-term Exams.....	30%
Final Exam.....	30%
Total.....	100%

Grading Scale

A.....	90-100%
B.....	80-89%
C.....	70-79%
D.....	60-69%
F.....	0-59%

Course Topics, Calendar of Activities, Major Assignment Dates

Homework will be submitted on Wednesdays and returned on Fridays (10 homework assignments). Two exams will be given, which are not comprehensive. A relatively brief group project will be due two weeks prior to the end of the semester which allows the student to practice the steps required to implement change in how an organization works. The class will be recorded and recordings may be accessed by both distance learning and resident students. Resident students are expected to attend class, and late work will not be accepted without prior approval for the delay (<http://student-rules.tamu.edu/rule07>).

Significant Dates:

Exam #1	Week 8, March 23
Final	Week 14, May 06

Week 1	Syllabus, Introduction
Week 2	Natural Water Influx
Week 3	Natural Water Influx
Week 4	Microscopic Efficiency of Immiscible Displacement
Week 5	Microscopic Efficiency of Immiscible Displacement
Week 6	Microscopic Efficiency of Immiscible Displacement
Week 7	Macroscopic Displacement Efficiency of a Linear Waterflood
Week 8	Macroscopic Displacement Efficiency of a Linear Waterflood
Week 9	Macroscopic Displacement Efficiency of a Linear Waterflood
Week 10	Midterm Exam
Week 11	Immiscible Displacement in Two Dimensions-Areal
Week 12	Immiscible Displacement in Two Dimensions-Areal
Week 13	Vertical Displacement in Linear and Areal Models
Week 14	Vertical Displacement in Linear and Areal Models
Week 15	Waterflood Design
Week 16	Polymer-Augmented Waterflood- Foam Flooding

Americans with Disabilities Act (ADA)

The following ADA Policy Statement (part of the Policy on Individual Disabling Conditions) was submitted to the UCC by the Department of Student Life. The policy Statement was forwarded to the Faculty Senate for information.

The Americans with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit <http://disability.tamu.edu>.

Coursework Copyright Statement: (Texas A&M University Policy Statement)

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Academic Integrity

For additional information please visit: <http://aggiehonor.tamu.edu>

"An Aggie does not lie, cheat, or steal, or tolerate those who do."