PETE 606
EOR Methods-Thermal Processes in Petroleum Engineering
Fall 2013

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Office Hours: Tuesday-Thursday 10:20 to 11:10
Class Schedule: MWF 10:20 to 11:10

Texts

- PETE 606 class notes
- Related technical papers

Grading Summary

Homework & Quizzes 40%
Mid-term Exams 30%
Final Exam 30%

Course Description

Fundamentals of thermal enhanced oil recovery methods in low API gravity oil reservoirs.
Course Outline

- Introduction
  - Unconventional Low API Gravity Oil Resources
    - Heavy Oil, Oil Shales, Tar Sands, Oil Sands
  - Thermal Enhanced Oil Recovery Processes
    - Current Thermal EOR Projects
    - History of Thermal EOR

- Heat transfer
  - Mechanisms of Heat Transfer
  - Thermodynamic Properties of Reservoir Fluids and Rocks
  - Heat Losses

- Hot-Water Drives

- Steam Injection
  - Steam Drives
  - Cyclic Steam Injection
  - Steam Assisted Gravity Drainage (SAGD)

- In-Situ Combustion
  - Dry Forward Combustion
  - Wet Combustion
  - Reverse Combustion

- Other Thermal Methods
  - Retort
  - Electrothermic Process

- Numerical and Analytical Modeling of Thermal EOR
  - Challenges
  - 1D, 2D, and 3D

Academic Integrity Statement and Policy

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