

## PTE 589 Syllabus, 2018

Instructor: Professor Fred Aminzadeh, Petroleum Engineering Program

Office HED 310, Tel. (213) 821-4268, e-mail: faminzad@usc.edu

Classes, 11:00 am-1:40 p.m., Thursdays.

Office Hours, 9:00-10:00 a.m. Thursdays Any other time in the office- No appointment necessary

### THE COURSE INTENDS TO GIVE Students:

- An insight to the key elements of modern oil and gas fields equipped with smart oil field technologies.
- Working knowledge of data collection and analysis methods in different stages of the life of the fields.
- An introduction to different automation and visualization approaches for the efficient and safe operation
- A realistic feel for the operational requirements of an oil fields, by reviewing several existing fields and coming up with new ideas to introduce smart oil field technologies.

### Course Topics/ Schedule

- January 11 General overview and Course highlights
- January 18 Fundamentals of Oil and Gas Exploration & Production
- January 25 Introduction to Exploration Geophysics
- February 1 Reservoir Monitoring: 4D, permanent sensors, instrumented oil field
- February 8 Signal Processing with Emphasis on Oil and Gas Data
- February 15 Oil and Gas Visualization
- February 22 Oil Field Virtual Environment
- March 1 MID TERM
- March 8 Oil and Gas Well Sensors / Data Transmission
- March 15 SPRING BREAK
- March 22 Visualization Workstation and Immersive Visualization
- March 29 Geosteering, Real time Imaging,
- April 5 Digital Oil Field- Monitoring
- April 12 Examples of Intelligent Oil Fields
- April 19 Term Project Presentations 1
- April 26 Term Project Presentations 2
- May 3 STUDY WEEK
- May 10 FINAL EXAM