

PGE 365 – Reservoir Engineering Laboratory Second Semester 2013-14

- Student Behavior:** The penalty for Academic dishonesty will be a grade of “F” for the course. Reading of magazines or newspapers in class is not allowed. Cell phones, beepers, PDAs, Laptops, MP3 players and other electronic devices are distracting and should be silenced during the entire class time (**MANDATORY**)
- Description:** **Part One: Core Lab**
Determination of physical properties of reservoir rocks, such as porosity, fluid saturation, gas and liquid permeability, electrical properties, wettability, capillary pressure etc.
Part Two: PVT LAB
Measurement of Fluid Properties-PVT Component, this would involve some weeks of studies in the PVT Laboratory looking at fluid properties like saturation pressure, GOR, formation volume factor, oil and gas viscosity.
- Prerequisite(s):** PGE 361 and PGE 362 (co-requisite)
- Assignment(s):** Use of MS-Word, MS-Excel and Power Point required for assignments
- Textbooks and References:**
Any Standard Reservoir Engineering Textbook
Djebbar Tiab and Erle C. Donaldson, “Petrophysics, Theory and Practice of Measuring Reservoir Rock and Fluid Transport Properties”, Second Edition, Elsevier, 2004
Amyx JW, Bass DM Jr., Whiting RL, “Petroleum Reservoir Engineering”, McGraw-Hill Classic Textbook Reissue Series, 1960
Laboratory and Equipment Manuals
- Class Times:** Laboratory: **Thursday: 3.00-5.50 PM; Room 1B-35**
ATTENDANCE IS MANDATORY, EXPERIMENTS MUST BE PERFORMED BEFORE YOU CAN WRITE AND SUBMIT A REPORT!
- Instructor:** Matthew Amao
Petroleum and Natural Gas Engineering Department, **Room 2B-77**
E-mail: aamao@ksu.edu.sa
- Office Hours:** Mondays and Wednesdays: 8:00am – 10:00 am OR BY APPOINTMENT
- Objectives:** To have Petroleum engineering students see, experience and physically measure properties of rocks and fluids. This knowledge will serve as a fundamental and foundational premise for subsequent courses in reservoir engineering, production and formation evaluation. Also, ability to write and communicate laboratory technical reports will be honed and evaluated on a weekly basis.
- Topics:** Laboratory Environment and Laboratory Safety
Core Cutting and Lithology Identification
Core Cleaning and Fluid Saturation Experiments
Porosity Experiments

Liquid Permeability
 Gas Permeability
 Electrical Resistivity
 Saturation by Retort Method
 Wettability and Interfacial Tension (IFT)
 Capillary Pressure
 PVT Laboratory Experiments

Grading:

Final grade: **CW + CF = 100%**,
 Where CW is Coursework = **60%** (see breakdown in the table below) and
 CF is Comprehensive Finals = **40%**

Component	Grade Percentage (%)
Attendance	5
Quiz	5
Reports	30
Mid-Term Test	20
Total Course Work (CW)	60
Final Examination (CF)	40
Total	100

95-100=A+,
 90-94.99=A,
 85-89.99=B+,
 80-84.99=B,
 75-79.99=C+,
 70-74.99=C,
 65-69.99=D+,
 60-64.99=D,
 59.99-0.0=F
