

PETROLEUM GEOLOGY--COURSE SYLLABUS  
DR. MONTE MARSHALL  
SPRING, GENERIC

1) Concepts, Terms, and History of Petroleum and Energy Use in the US and the World

2) What is Petroleum?? (1)

3) Reservoir Rocks and their Fluids (1,5)

Porosity and Permeability  
Diagenesis and Secondary Porosity  
Chemistry of Petroleum

4) Drilling and Logging a Well (2)

5) The Subsurface Environment of Sedimentary Basins--  
Chemistry, Temperature, and Pressure (2)

6) Generation and Migration of Petroleum--  
Maturation and Expulsion of Oil and Gas from source rocks (3,4)

7) Traps and Seals (4,5)  
Structural and Stratigraphic Traps  
The Petroleum System, Plate Tectonics and Basin Formation-- Case Histories

Text: Petroleum Geoscience, by Gluyas and Swarbrick (Chapter(s) in Text)

Prerequisites: Physical Geology, Structural Geology, and College Physics and Chemistry are highly recommended.

Grading: Two Midterms ( about 25 % each), Final (about 35 %), Homework/Class Participation (about 15 %).

Course objectives: The objectives of this course are to teach you the importance of energy in our lives, the very significant role that fossil fuels like petroleum ( crude oil and natural gas) and coal have in supplying this energy, the environmental effects of producing, transporting, refining, using and burning these fuels, how petroleum is found and wells are drilled to produce it, what are the conditions in nature required for petroleum formation and trapping, the role that geologists and geophysicists have in petroleum exploration and production, and how market factors affect jobs for us in the energy industry. You will find what you learn in this class is very useful—whether you work for an oil company, are an environmental or hydro-geologist, or just want to be an informed geologist/citizen. To get the most out of this course, think critically in class, read the text, and do the homework assignments.

Office: GMCS, Office Hours: , other times by appointment.