Chemical Engineering 6187
Reservoir Characterization
Summer (Six-Week Course)

Time: ................................................................................................................................. 9 am – 12 p.m. or online
Location: ................................................................................................................................ ICC or online
Professor: ............................................................................................................................ Bill Keach, 801-857-7728 cell

Semester Objectives:
This course will focus on teaching the fundamentals of seismic interpretation techniques. It will be taught as a workshop with two hands-on projects: One in seismic interpretation, the other the building of a 3D reservoir model.

Main Concepts:
- Impact of seismic reflection on geology and the petroleum industry.
- What a seismic reflection is.
- 2D and 3D seismic datasets.
- Geologic implications.
- Interpretation of 2D and 3D seismic data.
- Constructing and contouring a time structure map from seismic.
  - Paper
  - Using interpretation software
- Interpretation and integration of well log data.
- Geostatistical methods
- Distribution of reservoir properties in a 3D model

Text and Reading:
Required:

Optional:
Interpretation of Three-Dimensional Seismic Data (Sixth Edition), AAPG Memoir 42 and SEG Investigations in Geophysics, No. 9. Alistair Brown (can be accessed online via the AAPG Datapages through the library)

Articles as selected/assigned.

Presentations (2) – as assigned during the semester:
Chemical Engineering 6187
Reservoir Characterization
Summer (Six-Week Course)

1) Each class member will be required to deliver ~10 minute summary of an article from your choice of the AAPG Explorer – Geophysical Corner or the SEG Leading Edge – Interpreter's Corner. Both are available online through the library.
2) Group presentation of your Final project at the end of the semester. ~25 minutes.

Tentative Grading:
25% Completion of seismic assignments – 2D time-structure map, class participation, discussions, software exercises, 3D interpretation (using GeoProbe)
25% Completion of geomodeling assignments – Class participation, discussions, software exercises, ~10 exercises, build a 3D reservoir model (using Decision Space Geoscience)
15% Tests and quizzes – There will be a quiz on each chapter.
10% Article presentation –
25% Final Presentation – Considering to make this a group exercise.