COURSE SYLLABUS
PNGE 734
ADVANCED RESERVOIR ENGINEERING

COURSE INTRODUCTION
- Credit Hours: 3
- Prerequisite Courses: PNGE 470
- Method of Instruction: Lecture
- Instructor: Kashy Aminian, Ph.D., Professor
- Class Meets: 1 Sessions/week, 150 minutes per Session
- COURSE DESCRIPTION: Modeling and simulation of heterogeneous reservoirs, predicting the performance of the heterogeneous reservoirs during primary, secondary, and enhanced recovery production.

LEARNER SUPPORT
- Instructor Office Location: 325C MRB
- Office Hours: 10-11:50 M-T-W-Th.
- Instructor Email: khaminian@mix.wvu.edu
- Phone: 304.293.3964
- Method of Making Appointment: Email

INSTRUCTIONAL MATERIALS
- REQUIRED INSTRUCTIONAL MATERIALS:
  Electronic copies of the course notes will be posted on eCampus.
- OPTIONAL INSTRUCTIONAL MATERIALS:

COURSE LEARNING OBJECTIVES
- To apply statistical and engineering methods for reservoir characterization.
- To apply analytical and numerical methods to analyze the reservoir performance.
- To apply modeling techniques for prediction and optimization of the primary and secondary recovery performance.

COURSE ACTIVITIES
1. Introduction to Reservoir Characterization
3. Multiphase Flow in the Reservoir
4. Reservoir Modeling and Simulation
5. Fluid Injection: Pressure Maintenance, Immiscible Displacement, and Miscible Displacement
6. Heterogeneous Reservoirs: Naturally Fractured and Multi Layered Reservoirs

ASSESSMENT
- Major Assignments/Assessments:
  Attendance, Homework, Projects, and Exams
Grading Criteria:
- Attendance is required in the class and the lab.
- Each absence in the class will result in 10% reduction in Attendance Grade.
- Homework must be prepared in MS-Word and/or Excel and be submitted online.
- Homework must be prepared by each student separately and must include Homework Number, Name, The Date, Solution Method, and the Results.
- Two Exams, Mid-term and the Final, will be given. Exam are open-book.

Weight of Course Points:
Attendance 10%, Homework 20%, Projects 40%, and Exams 30%

Expected Timeline:
One Homework each week (5 before the mid-term)
One project before the mid-term
Mid-term Exam: 7th week of Class

Response Time and Feedback Plan:
Homework Solutions Grade will be posted on eCampus within one week of the due date.
Project Grades will be posted on eCampus within 3 weeks of the due date.
The Mid-term Exam Grade will be posted on eCampus within one week of the exam.

Final Grading Scale: A>90, B: 75-89, C: 61-74, D: 50-60, F<50

Course and Institutional Policies
- Attendance Policy:
  Attendance is required in the class.
  Each absence in the class will result in 10% reduction in Attendance Score. Students who are absent from the class for any reason are responsible for all missed work.
  No makeup exam will be given for students who are absent during the exams.

- Late Assignment and Missed Exam Policy:
  The absence or missed work can be excused for medical reasons (document is necessary).
  Prior approval must be obtained for the absence or the missed work due to non-medical reasons.
  Makeup exam will be given for students with prior approval or for medical reasons.

- Institutional Policies: Students are responsible for reviewing Policies on:
  INCLUSIVITY, ACADEMIC INTEGRITY, INCOMPLETES, SALE OF COURSE MATERIALS, SEXUAL MISCONDUCT, ADVERSE WEATHER, STUDENT EVALUATION OF INSTRUCTION, AND DAYS OF SPECIAL CONCERN/RELIGIOUS HOLIDAY STATEMENTS.