CBM003 ADD/CHANGE FORM

1. Department: CHE ENG  College: ENGR
2. Person Submitting Form: Michael P. Harold  Telephone: 34307
3. Course Information on New/Revised course:
   - Instructional Area / Course Number / Long Course Title:
     PETR / 3362 / Reservoir Engineering I
   - Instructional Area / Course Number / Short Course Title (30 characters max.)
     PETR / 3362 / RESERVOIR ENGINEERING I
   - SCH: 3.00  Level: JR  CIP Code: 14.2501.00  Lect Hrs: 3  Lab Hrs: 0
4. Justification for adding/changing course: To meet core curriculum requirements
5. Was the proposed/revised course previously offered as a special topics course?  Yes  No
   If Yes, please complete:
   - Instructional Area / Course Number / Long Course Title: 
     / 
   - Content ID:  Start Date (yyy3): 
6. Authorized Degree Program(s): B.S. Petroleum Engineering
   - Does this course affect major/minor requirements in the College/Department?  Yes  No
   - Does this course affect major/minor requirements in other Colleges/Departments?  Yes  No
   - Are special fees attached to this course?  Yes  No
   - Can the course be repeated for credit?  Yes  No
7. Grade Option: Letter (A, B, C...)  Instruction Type: lecture ONLY  (Note: Lect/Lab info. must match item 3, above.)
8. If this form involves a change to an existing course, please obtain the following information from
   the course inventory: Instructional Area / Course Number / Long Course Title
   PETR / 5362 / Reservoir Engineering I
   - Start Date (yyy3): 2008  Content I.D.: 13077
9. Proposed Catalog Description: (If there are no prerequisites, type in "none").
   Cr: 3. (3-0). Prerequisites: PETR 1111, PETR 2311, PHYS 1321. Description (30 words max.): Rock
   and fluid properties, PVT behavior of crude oil and natural gas, fundamentals of fluid flow through porous
   media, reservoir energy
10. Dean's Signature:  Date: 3/6/08
    Print/Type Name: Joseph Tedesco, Dean
Must be attached to CBM003 form

<table>
<thead>
<tr>
<th>Course: PETR</th>
<th>3362</th>
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<tr>
<td>Subject Prefix</td>
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1. Course Title: Pressure Transient Testing  
   Print course inventory screen using RARCAS/CATM and attach.

2. Pre-requisite/Co-requisite: PETR 1111, PETR 2311, PHYS 1321.

3. Rational for Course Format: Standard university course structure

4. Rational for Course Content: Continuation of learning related to petroleum engineering

5. ABET Constituents consulted: Petroleum Engineering Advisory Board, Industry focus groups

6. State Course Outcomes: students learn the properties, behaviors, and fundamentals of rock and fluids as they relate to reservoir engineering

7. Course Performance after implementing format and content changes: ___

8. Is course required?  
   X Yes  
   ☐ No

9. Required course outline attached?  
   X Yes  
   ☐ No

10. Estimated student demand ___50____ per semester

11. Similar courses in other departments:  
    ☐ Yes  
    X No

   a. If yes, list course(s) ___

12. Is course part of a sequence?  
    ☐ Yes  
    X No

   a. If Yes, identify the sequence and comment on the relation to prior and subsequent courses: ___


Note: Special Fees: If special fees requested, Course Related Fee Request Form will be required.

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1 Department reports will be requested about the effects of your new course on your curriculum both 12 and 24 months after the effective date for this new course.
Course Description: Rock and fluid properties and interactions, PVT behavior of crude oil and natural gas, fundamentals of fluid flow through subsurface porous media, reservoir energy.

Prerequisites: PETR 1111, PETR 2311, PHYS 1321.

Textbooks:
- Robert O. Hubbell: *Basic & Applied Reservoir Engineering*
- Craft and Hawkins: *Applied Petroleum Reservoir Engineering*

Course Outline:

1. Introduction and Overview of Reservoir Engineering
2. Reservoir Rock Properties
3. Reservoir Fluid Properties
4. Volumetrics
5. Reservoir Flow Mechanics
   - 5.1 Drive Mechanisms
   - 5.2 Flow Regimes
   - 5.3 Darcy's Law
   - 5.4 Flow Geometry
   - 5.5 Incompressible & Compressible Flow
   - 5.6 Diffusivity Equation and the Point Source Solution
   - 5.7 Unsteady State Water Influx
6. Methods of Reserve Estimation
   - 6.1 Material Balance
   - 6.2 Decline Curve Analysis
7. Complete Volumetrics
   - 7.1 Recovery Estimation
   - 7.2 Geologic Mapping
   - 7.3 Bulk Rock Calculation
   - 7.4 Volume in Place
   - 7.5 Reserves
   - 7.6 Production Projection
8. Gas Condensate Reservoirs
   - 8.1 Production Processing
   - 8.2 Reservoir fluid Behavior
   - 8.3 Reserve Estimation
9. Transient Pressure Analysis
10. Reservoir Simulation Overview