PETROLEUM ENGINEERING 661

Drilling Engineering

(3-0). Credit 3

Course Description: Introduction to drilling systems; wellbore hydraulics; casing design; identification and solution of drilling problems; well cementing; drilling of directional and horizontal wells; wellbore surveying; abnormal pore pressure; fracture gradients; well control; offshore drilling; underbalanced drilling.

Prerequisites: Approval of instructor


Selected Technical Papers.

Suggested Basis for Grading:
Homework Quiz A 20%
Quiz B 20%
Project 20%
Quiz C 20%

Grading Policy: >89.5 = A
79.5 – 89.4999 = B
69.5 – 79.4555 = C
59.5 – 69.4999 = C
<59.5 = F

Topics: The drilling rig, drilling fluids, rig selection, drilling problems 4
Wellbore hydraulics and design of circulation system 3
Casing design procedures; collapse, burst, tension 3
Abnormal pressure prediction, fracture gradients 5
Kick tolerance and well control 4
Primary and secondary cementing, cement plugs 4
Directional drilling, wellbore surveying techniques 3
Horizontal drilling, coiled tubing drilling 4
Offshore drilling, including dual-gradient drilling 6
Underbalanced drilling 6

Quizzes: (3 hours)
Total: 45 hours

Computer usage: Required for homework and project

**Academic Integrity Statement:** “An Aggie does not lie, cheat, or steal or tolerate those who do.” Collaboration on examinations and assignments is forbidden except when specifically authorized. Students violating this policy may be removed from the class roster and given a F in the course or other penalties as outlined in the *Texas A&M University Student Rules*. See [http://www.tamu.edu/aggiehonor](http://www.tamu.edu/aggiehonor)

**ADA Policy Statement:** The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall or call 845-1637.