

**PETE 203: DRILLING ENGINEERING
COURSE OUTLINE
SPRING SEMESTER 2004**

TOPIC	TEXT BOOK REFERENCE	DATE
1. ROTARY DRILLING RIGS <ul style="list-style-type: none"> - Types of Drilling Rigs - Rig Power System - Hoisting System - Rotating System - Circulating System - Well-Monitoring System - Well Control System 	1.1, 1.2, 1.4, 1.4.2 p(9), 1.4.3, 1.5, 1.6, 1.7, 1.8	February 15,17 22, 24
2. WELL CONTROL <ul style="list-style-type: none"> - Hydrostatic Pressure - Formation Pore Pressure - Buoyancy - Calculation of Kill Mud Weights - Fracture Resistance 	4.1, 4.2, 4.3, 4.3.1, 6.1, 4.5, 4.5.1 p.291	February 29, March 2 March 7 Review March 9 Test
3. DRILLING BITS <ul style="list-style-type: none"> - Types of Bits - Classification of Tricone Bits - Bit Selection and Evaluation - Selection of Bit Weight and Rotary Speed 	5.1.1, 5.1.2, 5.1.3, 5.1.4, 5.2, 5.3, 5.3.1, 5.3.2, 5.3.3, 5.6, 5.7, 5.8.3, 5.7.4	March 14 , 16 , 21 , 23
4. DRILLING STRING DESIGN <ul style="list-style-type: none"> - Drill Pipe - Drill Collars - Heavy Weight Drill Pipe - Drill String Design - Bottom Hole Assembly Design 	1.6, slides, 4.25a,	March 28 , 30 , April 4 April 6 Review April 11 Test
5. CEMENTING <ul style="list-style-type: none"> - Types of Cement - Properties of Cement - Cement Additives - Slurry Design - Subsurface Casing Equipment - Cement Placement 	3.1, 3.2, 3.3, 3.4, 3.4.1, 3.4.2, 3.4.3, 3.4.7, 3.4.9, 3.4.10, 3.4.11, 3.4.12, 3.4.13, 3.4.16, 3.4.18, 3.5, 3.5.1, 3.5.2, Slides	April 13, 18, 20 , 25 , 27 April 29 Field Trip May 2
6. CASING DESIGN <ul style="list-style-type: none"> - Casing Description - Casing Grades - Casing Connections - Casing Performance Properties - Types of Casing Strings - Selection of Setting Depths - Selection of Casing Sizes - Selection of Weight, Grade and Coupling 	7.2, 7.3, 7.3.1, 7.3.2, 7.3.3, 7.4, 7.4.1, 7.4.2, 7.4.3, 7.4.3.1, 7.4.3.2	May 4 , 9 , 11 16 , 18
7. DRILLING HYDRAULICS <ul style="list-style-type: none"> - Newtonian Fluids - Bingham Plastic Fluids - Optimization of Bit Hydraulics 	4.8.1, 4.8.3, p. 155, 4.7, 4.13.2, 4.13.5, Ex 4.32	May 23 , 25 Review