7508 Histopathology Slide Conference (1) F Prereq.: DVM degree or equivalent and consent of instructor. May be taken for a maximum of 6 hrs. of credit when topics vary. Histopathological aspects of diseases in various animal species; direct student participation in morphological description and literature review.

7509 Surgical Pathology (1-2) V Prereq.: DVM degree or equivalent and CBS 7516. May be taken for a maximum of 6 hrs. credit when topics vary. Gross and microscopic examination of surgically resected specimens of diseased tissues from various animals; clinical case interpretation, histologic description, diagnosis, prognosis, and consultation techniques.

7513 Pathology of Neoplasia (2) V Prereq.: DVM degree or equivalent and CBS 7511, 7512. 1 hr. lecture; 3 hrs. lab. Comparative gross, microscopic, immunohistochemical, and pathogenetic study of naturally occurring neoplastic disease in animals. May be taken for a maximum of 3 hrs. of credit when topics vary.

7514 Laboratory Animal Pathology (2) V Prereq.: DVM degree or equivalent and consent of instructor. Macroscopic, microscopic, and pathogenetic study of the infectious, nutritional, degenerative, and toxic diseases that affect the commonly used species of laboratory rodents, rabbits, and primates.

7515 Veterinary Dermatopathology (2) V Prereq.: DVM degree or equivalent and CBS 7516. 1 hr. lecture; 2 hrs. lab. Histopathological evaluation of integumentary system, tissue response, and disease processes by design of species of veterinary importance.

7516 Advanced Diagnostic Pathology of Animals (1-2) V Prereq.: DVM degree or equivalent. May be taken for a maximum of 6 hrs. credit when topics vary. Necropsy of various animals submitted for postmortem examination: gross, light, and electron microscopic histopathology; correlation and synthesis of clinical information, anatomical finding, and other ancillary laboratory results, for an accurate determination of etiology and pathogenesis.

7525 Advanced Veterinary Clinical Pathology (1-2) V Prereq.: DVM degree or equivalent. May be taken for a maximum of 6 hrs. credit when topics vary. Diagnosis and pathogenesis of hematological and clinical chemistry changes in blood from various animal species; understanding the applicable instrumentation, and methodologies of assays and quality assurance; interpretation of cytological specimens (tissue and fluids) and correlation with clinical and histopathologic findings.

7530, 7531, 7532 Laboratory Animal Science I, II, III, (2, 2, 2) F,Su. Prereq.: DVM degree or equivalent and consent of instructor. Biology, husbandry, diseases, medical care, regulations, and experimental uses of the commonly used laboratory animal species; courses need not be taken in sequence.

PETROLEUM ENGINEERING • PETE

1010 Introduction to Petroleum Engineering (2) F Prereq.: MATH 1012. Scientific bases of petroleum geology and chemistry, exploration, drilling, production, reservoir engineering, and refining.

2031 Reservoir Rock Properties (3) F Prereq.: MATH 1525, GEOI 1001, and CBS 2101. Physical properties of reservoir rocks, relationship of saturation to production of oil and gas.

2032 Reservoir Fluid Properties (3) S Prereq.: credit or registration in CBS 2102. Physical and chemical properties of petroleum reservoir fluids related to production of oil and gas.

2034 Rock and Fluid Properties Laboratory (1) S Prereq.: credit in CBS 2001 and/or 2032, and registration in the other course. 3 hrs. lab.

2060 Computational Methods in Petroleum Engineering (2) F Prereq.: MATH 1552, 1 hr. lecture; 2 hrs. lab. Computer programming, program fundamentals, numerical methods, and petroleum engineering commercial software.

3002 Communicating Petroleum Engineering Technology (3) V Prereq.: ENGL 2000, junior standing in the College of Engineering, and permission of department. Communication skills: preparation and delivery of oral presentations, public speaking, group discussions, writing and management, and computer usage applied to petroleum engineering topics.

3025 Economic Aspects of Petroleum Production (3) F Prereq.: ECON 2030, PETE 2060, and credit or registration in IE 3302. Mineral ownership and leasing in Louisiana; production decline curve analysis; profitability analysis; risk analysis; and taxation of petroleum properties.

3036 Well Logging (3) F Prereq.: grade of “C” or better in PETE 2031, and CBS 2050 or CBS 2102 and credit or registration in IE 2200. Qualitative and quantitative formation evaluation by means of electric, acoustic, and radioactive well logs.

3037 Petroleum Field Operations (1) F Prereq.: permission of department; 3 hrs. lab. Field operations associated with production engineering; field equipment and operation; pneumatic and electronic safety systems; fluid flow measurements.

3053 Petroleum Engineering Aspects of Subsurface Geologic Structures (3) V Prereq.: PETE 3025 and/or 3036; senior status in geology. Engineering aspects of petroleum geology; interpretation of subsurface data; reservoir mapping; determination of formation properties.

3990 Independent Research (1-2) F,Su. Prereq.: May be taken for a maximum of 3 sem. hrs. of credit. Number of hours, outline of project, and subject matter to be explored must be approved by instructor stated at time of registration. Individual research or engineering studies with faculty supervision.

4045 Drilling Fluids (3) F Prereq.: PETE 4040, CBS 2260 and credit or registration in CBS 2400. Drilling process, including equipment and performance; well control; bit design; lubricity, circulation pressure, and optimum hydraulics of drilling fluids; oil well casing design and cementing techniques.

4046 Well Design-Production (3) S Prereq.: PETE 4045, CBS 2400 or ME 3133, and CBS 3400. Analysis and design of well production systems; rod pumping, gas lift.

4505 Reserve Estimation and Reservoir Management (3) V Prereq.: PETE 3025, 3035, and IE 3302. Quantitative study and behavior prediction of volumetric and water-drive reservoir systems, and digital evaluation methods.

4566 Numerical Simulation of Improved Recovery Processes (3) S Prereq.: MATH 2065, and PETE 4050 and 4056; use of mathematical models for oil and gas reservoir performance and design enhanced recovery processes.

4567 Reservoir Mechanics Laboratory (2) S Prereq.: PETE 4051, 3 hrs. lab. Simulation of reservoirs with physical models; fluid flow in porous media.

4570 Drilling Fluids Laboratory (1) F Prereq.: credit or registration in PETE 4045. 3 hrs. lab. Accompanies PETE 4050.

4600 Prevention of Oil and Gas Well Blowouts (1) S Prereq.: CBS 2260. 3 hrs. lab. Causes and detection of well kicks and the proper handling of these kicks to prevent uncontrolled flow (blowout) from the well; methods and techniques currently used in the oil and gas industry.


4605 Surface Handling of Produced Fluids (3) V Prereq.: PETE 2032 and 2034. Operating principles and design criteria for equipment used in field processing of oil and gas, e.g. lean oil gas plants, gas dehydration units, gas sweetening units, cryogenic gasoline plants, separator pressure, condensate plants, and various phases mixture.

4701 Drilling and Production Field School (4) S Prereq.: PETE 4057 and 4085. Field school on offshore platform engineering; oil and gas reservoir engineering; waterflooding fundamentals.

4705 Reserve Estimation and Reservoir Management (3) V Prereq.: PETE 3025, 3035, and IE 3302. Quantitative study and behavior prediction of volumetric and water-drive reservoir systems, and digital evaluation methods.

7211 Production System Analysis (3) V Prereq.: CBS 2260, ME 3333 and PETE 4046 or equivalent. Use of multiphase flow correlations to determine flow rates and pressure traverses in flowing oil wells, gas-condensate wells, gathering systems, and pipe lines; applications of correlations to the design of gas lift systems.

7212 Well Completion Design (3) V Prereq.: PETE 4046 or consent of instructor. Systems analysis for optimum performance by designing best combination of tubing, flow lines, choke sizes, perforation density, and separator pressure; inflow performance of reservoirs; well completion techniques; pressure and gas influx prediction and gas-reservoir performance.

7221 Drilling Data Acquisition and Processing (3) V Prereq.: PETE 4039, 4060, and 4086 or equivalent. Mud and gas flow surface drilling data acquisition and processing; downhole data acquisition with drilling stopped and while drilling, data processing; formation evaluation and data transmission.

7223 Drilling Data Acquisition and Processing (3) V Prereq.: PETE 4039, 4060 and 4085. Wireline sidewall core and fluid recovery; data analysis and completion techniques; thermodynamic properties of fluids; downhole production data acquisition and interpretation; cased hole formation evaluation.

7231 Nonthermal Methods of Enhanced Oil Recovery (3) V Theory and field practice related to miscible displacement processes and chemical and polymer flooding techniques.

7232 Thermal Methods of Oil Recovery (3) V Theory of heat transfer and heat generation applied to the performance prediction of oil recovery by such field processes as forward and reverse in situ combustion, continuous and cyclic hot fluid injection, and production well heating.

7241, 7242 Selected Topics in Advanced Petroleum Engineering (3,3) V May be repeated for credit when topic varies; a total of 12 sem. hrs. of credit may be earned in these two courses.

7256 Special Problems in Petroleum Engineering (1-6) F,S,Su. May be taken for a maximum of 6 sem. hrs. of credit. Individual study and research.

7280 Mathematical Simulation of Petroleum Reservoir Processes (3) V Prereq.: PETE 4056 or equivalent; and PETE 4050 and 4051. Development and application of mathematical models for predicting petroleum reservoir performance including two-phase fluid flow in three dimensions.

7285 Statistical Reservoir Modeling (3) Prereq.: permission of instructor. Theory and practice of modeling uncertainty; spatially variable rock properties for subsurface reservoirs; distributions, transforms, Baysian updating, variograms/correlograms, estimation and coestimation with various kring methods, conditional simulation.

7994 Seminar (1) All graduate students are expected to attend this course every semester. Only 1 sem. hr. of credit will be awarded towards the degree. Pass/Fail grading.

7995 Thesis Research (1-2 per sem.) S,Y,V grading.

9000 Dissertation Research (1-2 per sem.) S,Y,V grading.

PHILOSOPHY • PHIL

General education courses are marked with stars (*).

★ 1000 Introduction to Philosophy (3) Credit will not be given for both this course and PHIL 1001. Major works on classical and modern philosophy; nature of knowledge, relation of mind and body, right and good, existence of God, and freedom and determinism.

★ 1001 HONORS: Introduction to Philosophy (3) Same as PHIL 1000, with a special honors emphasis for qualified students. Credit will not be given for both this course and PHIL 1001.

★ 1021 Introduction to Logic (3) No special background