

Petroleum Engineering Approved Technical Electives

2016-18 through 2020-22 catalogs - revised

12 hours of technical electives are required for the PEN BS degree

3 hours of PGE electives are required for the GEH degree which must be taken from area I but can also include PGE 430, PGE 362, PGE 334 or PGE 337

To satisfy the technical elective requirements, at least two (2) and up to four (4) courses from section I can be taken, up to two (2) courses from section II can be taken, and only one (1) course from section III can be taken (no courses are REQUIRED from sections II and III)

SECTION I (at least 2 and up to 4 courses may be taken):

PGE 323M	Reservoir Engineering III (<i>Reservoir</i>)
PGE 364	Natural Gas Engineering (<i>Production, Reservoir</i>)
PGE 372	Advance Drilling & Well Completion (<i>Drilling, Production</i>)
PGE 376	<i>Special Problems in Petroleum/Geosystems Engineering (depends on research area) (always available)</i>
PGE 378	Applied Reservoir Characterization (<i>Reservoir, Formation Evaluation</i>)
PGE 379	Advances in Unconventional Shale Gas Resources (<i>Reservoir, Production</i>)
PGE 379	EOR of Carbonates (<i>Reservoir</i>)
PGE 379.3	Geothermal/Sustainable Energy
PGE 379.4	Carbon Capture and Storage (<i>Reservoir, Production</i>)
PGE 379.9	Subsurface Machine Learning (<i>Reservoir, Formation Evaluation</i>)
PGE 379.10	Artificial Lift (<i>Production</i>)
PGE 379.11	Facilities Management (<i>Production</i>)
PGE 379.12	Blowout Prevention and Control (<i>Drilling</i>)
PGE 379.13	Fundamentals of Enhanced Oil Recovery (<i>Reservoir</i>)
PGE 379.14	High Performance Computational Engineering
PGE 379.16	Hydraulic Fracture and Evaluation (<i>Drilling, Production, Reservoir</i>)
PGE 379.17	Applied Subsurface Geology (<i>Formation Evaluation, Reservoir</i>)
PGE 379.19	Advanced Well Construction (<i>Drilling</i>)
PGE 679HA	<i>Undergraduate Honors Thesis, must be in honors program (always available)</i>
PGE 679HB	<i>Undergraduate Honors Thesis, must be in honors program (always available)</i>

Some PGE graduate courses can be taken as technical electives. Students are required to have approval to take a graduate course for undergraduate credit. The application is found at <http://www.engr.utexas.edu/undergraduate/forms/graduatecourse>.

SECTION II (up to 2 courses may be taken): Courses not on this list must be preapproved

(courses in area 4 and 5 of the CSE Certificate Program are approved as are upper-division CS courses used in the Elements of Computing Certificate)

C E 370K	Environmental Sampling and Analysis
C E 374K	Hydrology (fall)
C E 374L	Groundwater Hydrology
COE 321K	Computational Methods for Structural Analysis
C S 323E	Elements of Scientific Computing
C S 367	Numerical Methods
E S 369N	Sustainability Issue in Energy
GEO 330K	Energy Exploration (available some springs)
GEO 346C	Introduction to Physical and Chemical Hydrology (spring)
GEO 376L	Field Methods in Groundwater Hydrology (summer)
GEO 376M	Chemical Hydrology (spring)
GEO 376S	Physical Hydrology (fall)
GEO 377K	Applied Karst Hydrology (spring)
GEO 420K	Introduction to field and Stratigraphic Methods (spring)
GEO 468	Geophysics for Geology Majors (spring)
GEO 476K	Groundwater Hydrology (fall)

M 340L	Matrices and Matrix Calculation (fall, spring, summer?)
M 341	Linear Algebra and Matrix Theory (fall, spring)
M 346	Applied Linear Algebra (fall, spring)
M 348	Scientific Computation in Numerical Analysis (fall, spring)
M 368K	Numerical Analysis (spring)
M 427L	Advanced Calculus for Applications II (fall, spring)
PGE 379.5	Oil, Gas and Mineral Law ¹
PGE 363	Petroleum Land Leasing Regulations & Practices ²
PGE 371	Energy Finance) ²

SECTION III (only 1 course may be taken): Courses not on this list must be preapproved

BGS 370.1	Energy, Technology & Policy (fall)
FIN 320F	Foundations of Finance (available summer, fall, spring)
IBF 320f	Foundations of International Business (available summer, fall, spring)
LEB 320F	Foundations of the Legal Environment of Business (available summer, fall, spring)
LEB 370	Oil and Gas Law (summer) ¹
MAN 320F	Foundations of Organization Behavior and Administration (available summer, fall, spring)
MAN 335	Operations Management
MAN 366L	Operations Research

Footnotes

1 Only one “Oil and Gas Law” topic course may be counted toward degree requirements.

2 Only one of PGE 363 or 371 may be counted toward degree requirements.