

REQUIREMENTS FOR THE BACHELOR OF SCIENCE/MASTER OF SCIENCE
MEWBORNE COLLEGE OF EARTH AND ENERGY
THE UNIVERSITY OF OKLAHOMA

Academic Year
For Students Entering the Oklahoma State System for Higher Education Summer 2022 through Spring 2023

General Requirements	
Minimum Total Credit Hours	154-160
Minimum Retention/Graduation Grade Point Averages:	
Overall - Combined and OU	3.00
Major - Combined and OU	3.00
Curriculum - Combined and OU	3.00

Program
Petroleum Engineering
A764/F765
Bachelor of Science/Master of Science

OU encourages students to complete at least 31 hours of applicable coursework each year to have the opportunity to graduate in 5 years.

GENERAL EDUCATION AND COLLEGE REQUIREMENTS

Courses for fulfillment of General Education and college requirements must be from the approved General Education course list at <http://www.ou.edu/content/gened/courses.html>. **Courses graded P/NP will not apply**

UNIVERSITY-WIDE GENERAL EDUCATION (MINIMUM 40 HOURS) AND COLLEGE REQUIREMENTS

At least three hours of Upper-Division General Education coursework must be completed **outside the major**.

Code	Title	Credit Hours
Core Area I: Symbolic and Oral Communication		
<i>English Composition (6 hours)</i>		
ENGL 1113	Principles of English Composition	3
ENGL 1213	Principles of English Composition	3
or EXPO 1213	Expository Writing	
<i>Language (0-10 hours)</i>		
(0-10 hours in the same language) Students who have not completed two years of the same language in high school are required to take two college courses in the same language		
Beginning Course		0-5
Beginning Course, continued		0-5
<i>Mathematics (minimum 3 hours)</i>		
MATH 1914	Differential and Integral Calculus I ¹	3-4
or MATH 1823	Calculus and Analytic Geometry I	
Core Area II: Natural Science (minimum 7 hours, 2 courses)		
CHEM 1315	General Chemistry (Science with Lab) ¹	5
or CHEM 1335	General Chemistry I: Signature Course	
PHYS 2514	General Physics for Engineering and Science Majors ¹	4
Core Area III: Social Science (6 hours)		
P SC 1113	American Federal Government	3
Choose one course from the General Education Social Science list		3
Core Area IV: Arts and Humanities - one must be Upper Division (3000-4000-level)		
<i>Artistic Forms (3 hours)</i>		
Choose one course from the General Education Artistic Forms list.		3
<i>Western Culture (6 hours)</i>		
HIST 1483	United States to 1865	3
or HIST 1493	United States, 1865 to the Present	
Choose one course from the General Education Western Culture list (Excluding HIST 1483 and HIST 1493)		3
<i>World Culture (3 hours)</i>		
Choose one course from the General Education World Culture list		3
Core Area V: First Year Experience (3 hours)		
Choose one course		3
Total Credit Hours		39-50

¹Mewborne College of Earth and Energy Sciences requirements that also satisfy University General Education requirements.

ADDITIONAL MEWBORNE COLLEGE OF EARTH & ENERGY REQUIREMENT

Code	Title	Credit Hours
PHYS 2524	General Physics for Engineering and Science Majors	4
Total Credit Hours		4

FREE ELECTIVES

Electives to bring total applicable hours to 154-160 including 40 upper-division hours.

THIS PROGRAM HAS CHANGES PENDING STATE REGENTS APPROVAL FOR 2022-23. THESE PENDING CHANGES ARE NOT REFLECTED HERE.
UNDERGRADUATE MAJOR REQUIREMENTS

ACCREDITED BY THE ENGINEERING ACCREDITATION COMMISSION OF ABET, [HTTP://WWW.ABET.ORG](http://www.abet.org)

A minimum grade of C is required for each course in the curriculum.

Students may enter the accelerated program based on the undergraduate degree pattern offered in the year they first enrolled in the Oklahoma State System of Higher Education or later.

Students must maintain a 3.0 GPA from the time of entering the accelerated program until graduation.

Students must take the GRE and apply for the MS program during the third year; minimum OU GPA and combined GPA of 3.0 is required. Students should submit an application to the School of Petroleum Engineering for the accelerated program during the fall semester of the Junior year. Students must also apply to the Graduate College during the spring semester of the Senior year to be admitted by that college to the MS program.

Code	Title	Credit Hours
P E 2011	Introduction to Petroleum Engineering	1
P E 2113	Statics and Dynamics	3
P E 2213	Thermodynamics	3
P E 2153	Mechanics of Materials	3
P E 3022	Technical Communications	2
P E 3213	Reservoir Rock Properties	3
P E 3221	Rock Properties Laboratory	1
P E 3220	Petroleum Engineering Internship ¹	0
P E 3123	Petroleum Reservoir Fluids	3
P E 3223	Fluid Mechanics	3
P E 3313	Drilling I	3
P E 3712	Petroleum Economics	2
P E 3723	Numerical Methods for Engineering Computation	3
P E 3413	Production Engineering I	3
P E 3513	Reservoir Engineering I	3
P E 3813	Formation Evaluation with Well Logs	3
P E 4331	Drilling Engineering Laboratory	1
P E 4323	Drilling II	3
P E 4423	Production Engineering II	3
P E 4521	Reservoir Fluid Mechanics Laboratory	1
P E 4712	Petroleum Project Evaluation	2
P E 4533	Reservoir Engineering II	3
P E 4552	Data Analytics	2
P E 5553	Integrated Reservoir Management ²	3
Approved P E Graduate Elective ²		3
Total Credit Hours		60

¹An approved PE elective may be taken in place of P E 3220 for 1 to 3 credit hours.

²These 6 hours of coursework are applied to both the BS and MS degrees.

MAJOR SUPPORT REQUIREMENTS

Code	Title	Credit Hours
MATH 2924	Differential and Integral Calculus II ¹	4
MATH 2934	Differential and Integral Calculus III ¹	4
MATH 3113	Introduction to Ordinary Differential Equations	3
CHEM 1415	General Chemistry (Continued)	5
or CHEM 1435	General Chemistry II: Signature Course	
GEOL 1114	Physical Geology for Science and Engineering Majors	4
GEOL 3003	Structural Geology and Stratigraphy for Petroleum Engineers	3
GPHY 3423	Introductory Petroleum Geology and Geophysics	3
Total Credit Hours		26

¹The MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.

GRADUATE REQUIREMENTS

- Students may apply only 3 credit hours of S/U graded coursework (excluding thesis research) toward the M.S.

Code	Title	Credit Hours
P E 5980	Research for Master's Thesis ¹	6
Applied Math Course ²		3
Choose 15 hours of Approved Graduate Elective		15
Total Credit Hours		24

¹For non-Thesis option M.S. students P E 5980 will be replaced by 12 hours of graduate-level electives approved by the graduate liaison. The Thesis option M.S. requires publication or acceptance of a paper or conference proceeding with the student as first or second author in a topic relating to the student's thesis. The Graduate college will not authorize a student to defend until the graduate liaison has confirmed the student has met this requirement.

²Applied Math course - One course from the following list or approved by the department: MATH 4163, P E 5563, or P E 5990 (Topic: Petroleum Inverse Studies).

More information in the catalog: (<http://ou-public.courseleaf.com/mewbourne-earth-energy/mewbourne-petroleum-geological-engineering/petroleum-engineering-bachelor-science-petroleum-engineering-master-science/>).

SUGGESTED SEMESTER PLAN OF STUDY

ACCREDITED BY THE ENGINEERING ACCREDITATION COMMISSION OF ABET, [HTTP://WWW.ABET.ORG](http://www.abet.org)

In order to progress in your curriculum, and as a specific graduation requirement, a grade of C or better is required in each course in the curriculum. Students must successfully complete prerequisite courses (with a minimum C grade) before proceeding to the next course.

Year	FIRST SEMESTER		Hours	SECOND SEMESTER		Hours
FRESHMAN	ENGL 1113	Principles of English Composition (Core I)	3	ENGL 1213 or EXPO 1213	Principles of English Composition (Core I) or Expository Writing	3
	CHEM 1315	General Chemistry (Core II) ¹	5	CHEM 1415	General Chemistry (Continued) ¹	5
	MATH 1914	Differential and Integral Calculus I (Core I) ²	4	MATH 2924	Differential and Integral Calculus II ²	4
	HIST 1483 or HIST 1493	United States to 1865 (Core IV) or United States, 1865 to the Present	3	PHYS 2514	General Physics for Engineering and Science Majors (Core II)	4
		First Year Experience (Core V) ³	3	P E 2011	Introduction to Petroleum Engineering	1
	CREDIT HOURS		18	CREDIT HOURS		17
SOPHOMORE	MATH 2934	Differential and Integral Calculus III ²	4	P E 2213	Thermodynamics	3
	PHYS 2524	General Physics for Engineering and Science Majors	4	P E 2153	Mechanics of Materials	3
	GEOL 1114	Physical Geology for Science and Engineering Majors	4	P E 3022	Technical Communications	2
	P E 2113	Statics and Dynamics	3	P E 3213	Reservoir Rock Properties	3
				P E 3221	Rock Properties Laboratory	1
					Approved Elective: Artistic Forms (Core IV) ³	3
	CREDIT HOURS		15	CREDIT HOURS		15
	SUMMER					
	P E 3220	Petroleum Engineering Internship ⁴	0			
	CREDIT HOURS		0			
JUNIOR	MATH 3113	Introduction to Ordinary Differential Equations	3	GEOL 3003	Structural Geology and Stratigraphy for Petroleum Engineers	3
	P E 3123	Petroleum Reservoir Fluids	3	P E 3413	Production Engineering I	3
	P E 3223	Fluid Mechanics	3	P E 3513	Reservoir Engineering I	3
	P E 3313	Drilling I	3	P E 3813	Formation Evaluation with Well Logs	3
	P E 3712	Petroleum Economics	2	P E 4331	Drilling Engineering Laboratory	1
	P E 3723	Numerical Methods for Engineering Computation	3		Approved Elective: World Culture (Core IV) ³	3
	CREDIT HOURS		17	CREDIT HOURS		16
SENIOR	GPHY 3423	Introductory Petroleum Geology and Geophysics	3	P SC 1113	American Federal Government	3
	P E 4323	Drilling II	3	P E 4552	Data Analytics	2
	P E 4423	Production Engineering II	3	P E 5553	Integrated Reservoir Management ⁵	3
	P E 4521	Reservoir Fluid Mechanics Laboratory	1		P E Approved Graduate Elective ⁵	3
	P E 4712	Petroleum Project Evaluation	2		Approved Elective: Western Culture (Core IV) ³	3
	P E 4533	Reservoir Engineering II	3		Approved Graduate Elective	3
		Approved Elective: Social Science (Core III) ³	3			
		CREDIT HOURS		18	CREDIT HOURS	
	SUMMER					
	P E 5980	Research for Master's Thesis ⁶	2			
		Applied Math Course ⁷	3			
	CREDIT HOURS		5			
FIFTH YEAR	P E 5980	Research for Master's Thesis ⁶	2	P E 5980	Research for Master's Thesis ⁶	2
		Approved Graduate Elective	3		Approved Graduate Elective	3
		Approved Graduate Elective	3			
		Approved Graduate Elective	3			
	CREDIT HOURS		11	CREDIT HOURS		5

¹ CHEM 1315 and CHEM 1415 can be substituted with CHEM 1335 (Fall only) and CHEM 1435 (Spring only), respectively.

² The MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.

³ To be chosen from the University-Wide General Education Approved Course List. Three of these twelve hours must be upper-division (3000-4000). See list in the Class Schedule.

⁴ An approved PE elective may be taken in place of P E 3220 for 1 to 3 credit hours.

⁵ Courses applied to both BS and MS degrees.

⁶ For non-Thesis option M.S. students P E 5980 will be replaced by 12 hours of graduate-level electives approved by the graduate liaison. The Thesis option M.S. requires publication or acceptance of a paper or conference proceeding with the student as first or second author in a topic relating to the student's thesis. The Graduate college will not authorize a student to defend until the graduate liaison has confirmed the student has met this requirement.

⁷ Applied Math course - One course from the following list or approved by the department: MATH 4163, P E 5563, or P E 5990 (Topic: Petroleum Inverse Studies).

- Courses designated as Core I, II, III, IV, or V are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved lists.
- Two college-level courses in a single language are required; this may be satisfied by successful completion of 2 years in a single language in high school. Students who must take language at the University will have an additional 6-10 hours of coursework.
- Students may apply only 3 credit hours of S/U graded coursework (excluding thesis research) toward the M.S.