

# PETROLEUM AND NATURAL GAS ENGINEERING, B.S.

**Begin Campus:** Any Penn State Campus

**End Campus:** University Park

## Suggested Academic Plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2024-25 academic year. To access previous years' suggested academic plans, please visit the archive (<https://bulletins.psu.edu/undergraduate/archive/>) to view the appropriate Undergraduate Bulletin edition.

### Petroleum and Natural Gas Engineering, B.S. at University Park Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

#### First Year

Fall	Credits	Spring	Credits
MATH 140 or 140G (GQ) <sup>†‡#††</sup>	4	MATH 141 or 141G (GQ) <sup>†‡#††</sup>	4
CHEM 110 (GN) <sup>*#†</sup>	3	ENGL 15, 30H, or ESL 15 (GWS) <sup>††</sup>	3
CHEM 111 (GN) <sup>†</sup>	1	CHEM 112 <sup>*</sup>	3
EMSC 100S (or CAS 100 by substitution) (GWS) <sup>††1</sup>	3	PHYS 211 (GN) <sup>*#†</sup>	4
ECON 102 (GS) <sup>†</sup>	3	General Education Knowledge Domain	3
General Education Knowledge Domain	3		
	<b>17</b>		<b>17</b>

#### Second Year

Fall	Credits	Spring	Credits
PHYS 212 (GN) <sup>*†</sup>	4	PNG 301	3
EMCH 210	5	MATH 220	2
MATH 251	4	MATH 231	2
EME 210 or CMPSC 201	3	EMCH 212	3
		GEOSC 1	3
		PHIL 103, 106, 107, or 233 (GH) <sup>†</sup>	3
	<b>16</b>		<b>16</b>

#### Third Year

Fall	Credits	Spring	Credits
PNG 405 <sup>*</sup>	3	PNG 450 <sup>*</sup>	3
PNG 406 <sup>*</sup>	1	PNG 451 <sup>*</sup>	1
EME 301 <sup>*</sup>	3	PNG 475 <sup>*</sup>	3
EME 303 <sup>*</sup>	3	GEOSC 454	3
PNG 440W (Writing across the curriculum)	3	PNG 410 <sup>*</sup>	3

ENGL 202C (GWS) <sup>††</sup>	3	Technical Elective from approved department list <sup>2</sup>	3
	<b>16</b>		<b>16</b>
<b>Fourth Year</b>			
<b>Fall</b>		<b>Credits Spring</b>	<b>Credits</b>
PNG 420	3	PNG 425	3
PNG 430	3	PNG 490	3
EME 460	3	Technical Elective from approved department list <sup>2</sup>	3
PNG 480	3	General Education Knowledge Domain	3
PNG 482	1	General Education Health and Wellness (GHW)	1.5
General Education Health and Wellness (GHW)	1.5	General Education Knowledge Domain	3
	<b>14.5</b>		<b>16.5</b>

#### Total Credits 129

- \* Course requires a grade of C or better for the major
- ‡ Course requires a grade of C or better for General Education
- # Course is an Entrance to Major requirement
- † Course satisfies General Education and degree requirement

#### University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

All incoming Schreyer Honors College first-year students at University Park will take ENGL 137H/CAS 137H in the fall semester and ENGL 138T/CAS 138T in the spring semester. These courses carry the GWS designation and satisfy a portion of that General Education requirement. If the student's program prescribes GWS these courses will replace both ENGL 15/ENGL 30H and CAS 100A/CAS 100B/CAS 100C. Each course is 3 credits.

<sup>1</sup> Students who begin their studies at non-UP locations and/or join the college after their first year should substitute CAS 100A, CAS 100B, or CAS 100C (GWS) for EMSC 100S (GWS). EMSC 100S Earth and Mineral Sciences First year Seminar (3) is a required course only for students who begin their studies at UP in the College of Earth and Mineral Sciences.

<sup>2</sup> Approved Technical Electives for the PNGE major can be found at the department web site: <http://www.eme.psu.edu/pnge/techelectives>. Students may use up to 6 credits of ROTC as technical electives.

#### Advising Notes:

Only students who are enrolled in EMSC or DUS are eligible to apply to PNGE.

Courses required for the major may be offered fall semester only, spring semester only, or both fall and spring semesters. Consult with your adviser and department to discuss your academic progress and course sequencing.

The PNGE program strongly recommends that students have summer internships, as many companies will only consider hiring PNGE graduates who have had at least one internship.

College and Department Notes: Pursuant to Senate Policy 83-80.5, the Petroleum and Natural Gas Engineering program at Penn State requires that at least 24 credits of course work within the department sponsoring the major be completed in residence at University Park under the instruction of College of Earth and Mineral Sciences faculty. External transfer credit requests should follow the Transfer Credit procedure at Penn State Admissions, which may involve evaluation of the external course by faculty for approval.

## Petroleum and Natural Gas Engineering, B.S. at Commonwealth Campuses

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

### First Year

Fall	Credits	Spring	Credits	Credits
MATH 140 (GQ) <sup>*†##</sup>	4	MATH 141 (GQ) <sup>*†##</sup>	4	4
CHEM 110 (GN) <sup>*##†</sup>	3	CHEM 112 <sup>*</sup>	3	3
CHEM 111 (GN) <sup>†</sup>	1	PHYS 211 (GN) <sup>*##†</sup>	4	4
ENGL 15, 30H, or ESL 15 (GWS) <sup>††</sup>	3	ECON 102 (GS) <sup>†</sup>	3	3
General Education Knowledge Domain	3	General Education Health and Wellness (GHW)	1.5	1.5
General Education Health and Wellness (GHW)	1.5			
	<b>15.5</b>		<b>15.5</b>	<b>15.5</b>

### Second Year

Fall	Credits	Spring	Credits	Credits
PHYS 212 (GN) <sup>*†</sup>	4	PNG 301 (take through DLC)	3	3
EMCH 211	3	EMCH 212	3	3
MATH 251	4	EMCH 213	3	3
CAS 100A, 100B, or 100C (GWS) <sup>††1</sup>	3	MATH 220	2	2
EME 210 or CMPSC 201 (If CMPSC 201 is not available at your campus, take CMPSC 121 instead)	3	MATH 231	2	2
		GEOSC 1	3	3
	<b>17</b>		<b>16</b>	<b>16</b>

### Third Year

Fall	Credits	Spring	Credits	Credits
PNG 405 <sup>*</sup>	3	PNG 450 <sup>*</sup>	3	3
PNG 406 <sup>*</sup>	1	PNG 451 <sup>*</sup>	1	1
PNG 440W (Writing across the curriculum)	3	PNG 475 <sup>*</sup>	3	3
EME 301 <sup>*</sup>	3	GEOSC 454	3	3
EME 303 <sup>*</sup>	3	PNG 410 <sup>*</sup>	3	3
ENGL 202C (GWS) <sup>††</sup>	3	Technical Elective from approved department list <sup>2</sup>	3	3
General Education Knowledge Domain	3			
	<b>19</b>		<b>16</b>	<b>16</b>

### Fourth Year

Fall	Credits	Spring	Credits	Credits
PNG 420	3	PNG 425	3	3
PNG 430	3	PNG 490	3	3
EME 460	3	PHIL 103, 106, 107, or 233 (GH) <sup>†</sup>	3	3

PNG 480	3 Technical Elective from approved department list <sup>2</sup>	3
PNG 482	1 General Education Knowledge Domain	3
	General Education Knowledge Domain	3
	<b>13</b>	<b>18</b>

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