Petroleum Engineering

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“A goal without a plan is just a wish.” — Antoine de Saint-Exupéry

“By failing to prepare, you are preparing to fail.” — Benjamin Franklin
Introduction

The Guide

This guide was created with one important thing in mind: We want you to be successful! This guide describes the curriculum, course descriptions, prerequisites, and the general requirements for graduation. It also contains information about technical electives, which give you the opportunity to shape your program further. With this Academic Advising Guide, you will become aware of the program policy, familiar with the procedures, and be able to plan your course of study.

You need this guide if you want to:

- meet with your advisor for advising
- plan your courses
- consider technical electives
- check some requirements
- check course descriptions and prerequisites
- take undergraduate research or internship
- take an MS Quick Start Program
- request exceptions
- find forms and petitions
- transfer a course from another university
- find other important information

Since the contents of this Advising Guide change with time, check the advising website regularly to obtain the latest updates. We will update the Advising Guide once every semester before the advising week. It is the responsibility of the student to know the latest updates on the program policies and curriculum.

Help Corner

1. Where can I find the information if I cannot find it on this guide?
   a. Check our website first at: http://www.uwyo.edu/petroleum/undergraduate/current-students/advising%20information/
   b. If you still cannot find the answer, please contact us.

2. Where can I obtain this guide (word file)?
   Download it at: http://www.uwyo.edu/petroleum/undergraduate/current-students/advising%20information/
Curriculum

The curriculum below is the suggested 4-year course of study. Each student may have a different course arrangement depending on their individual situation. When you plan your course of study:

- always check the prerequisites of courses;
- always check the semester in which courses are usually offered.

### PETROLEUM ENGINEERING CURRICULUM

(for students entering UW Fall 2015 or later)

<table>
<thead>
<tr>
<th>FALL</th>
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<tbody>
<tr>
<td><strong>Course Title</strong></td>
<td><strong>Credits</strong></td>
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<tr>
<td><strong>Year 1</strong></td>
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<td>1101 First Year Seminar (FYS)</td>
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<td>CHEM 1020 Gen Chem I (PN)</td>
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<td>ACT 23 or Concurrent MATH 1400 or 1405 or 1450</td>
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<td>GEOl 1100 Physical Geology (PN)</td>
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<td>MATH 2200 Calculus I (Q)</td>
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<td>PETE 1060 Intro Petro Engr Prob Solving</td>
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<td><strong>Year 3</strong></td>
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<td>PHYS 1220 Engr Physics II</td>
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<td>PETE 2060 Petroleum Engr Computing</td>
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<td>C in PETE 1060, D or better or concurrent in MATH 2310</td>
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<td>PETE 3100 Rock and Fluids Lab</td>
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<tr>
<td>C in PETE 2050</td>
<td></td>
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<td>PETE 3255 Basic Drilling Engineering</td>
<td>3</td>
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<tr>
<td>C in (PETE 2050, ES 2330)</td>
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<tr>
<td>PETE 3015 Multicomponent Thermo</td>
<td>3</td>
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<tr>
<td>ES 2310, concurrent in PETE 2060</td>
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<td><strong>15</strong></td>
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<td><strong>Year 4</strong></td>
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<td>PETE 4225 Well Test Analysis</td>
<td>3</td>
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<tr>
<td>C in PETE 3200</td>
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<td>PETE 4340 Petroleum Economics</td>
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<td>C in PETE 3200</td>
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### Prerequisite(s)

C or better is required for these courses.
Course Descriptions

For other course descriptions, please review the university course catalog: http://www.uwyo.edu/registrar/university_catalog/cape.html

1060. Introduction to Petroleum Engineering Problem Solving. 1. Covers elements of Petroleum Engineering calculations associated with typical computations in Drilling, Production, and Reservoir Engineering, Rock and Fluids properties, to simultaneously train the student on basic computing skills as well as basic language of Petroleum Engineering. The preferred computing tool is Matlab, which will be introduced through simple calculations on the computer. Notions of the petroleum engineering curriculum will also be provided through examples of the different subjects. Prerequisite: Math placement 5 or concurrent enrollment in MATH 2200. (Normally offered fall semester)

2050 [3000]. Fundamentals of Petroleum Engineering. 3. General introduction to petroleum engineering, including physical properties of reservoir rock, single phase fluid flow through porous media, surface forces, fluid saturation’s, drilling fundamentals, methods of production, completion technology and petroleum reservoir field data. Prerequisite: C or better in MATH 2205 and PETE 1060. (Normally offered spring semester)

2060. Introduction to Petroleum Engineering Computing. 3. Introduces Petroleum Engineering problems and principles, develops computational skills needed to solve them, and reinforces a computational tool that will be useful for other Petroleum Engineering classes. Prerequisites: grade of C or better in PETE 1060, and D or better or concurrent enrollment in MATH 2310. (Normally offered fall semester)

3015. Multicomponent Thermodynamics. 3.* Introduces mixture properties, such as chemical potentials, excess properties, partial molar properties, heats of mixing, fugacities, and practical tools for estimating them from solution theories and equations of state. These tools and concepts are applied to phase and chemical equilibria. Cross listed with CHE 3015. Prerequisite: ES 2310, concurrent enrollment in PETE 2060. (Normally offered fall semester)

3025. Transport Phenomena. 3. Introduces energy and mass transfer concepts and the development of mathematical models of physical phenomena, including convection, diffusion, conduction and radiation, applicable to the analysis and design of chemical processes. Cross listed with CHE 3025. Prerequisites: C or better in ES 2330 and CHE 2005. (Normally offered fall semester)

3030. Unit Operations. 3. Applies transport and equilibrium concepts and models to the analysis and design of unit operations, such as distillation, absorption, extraction, crystallization, membrane, and heat exchange processes. Cross listed with CHE 3030. Prerequisites: CHE 2005, 3015, and 3025.

3100. Rock and Fluids Lab. 2.* Provides understanding of principles of rock and fluid properties and their measurement as part of conventional and special core analysis, as well as PVT characteristics of reservoir fluids. Students are expected to understand how to measure important rock and fluid properties using laboratory equipment, as part of reservoir characterization routines, formation damage evaluations and well log calibration protocols. Students are also expected to learn how to write succinct and organized reports. Prerequisite: C or better in PETE 2050. (Normally offered fall and spring semesters)

3200 [4010]. Reservoir Engineering. 3.* Examines use of material balance equation. Studies principles of fluid mechanics applied to single and multiphase flow of fluids in porous media and decline curve analysis. Prerequisite: C or better in PETE 2050. (Normally offered spring semester)

3255. Basic Drilling Engineering. 3.* Principles and practices of oil and gas well rotary drilling, including rock mechanics, drilling hydraulics, drilling fluids, and hold deviation. Drilling equipment analysis, casing design, and drilling fluid
properties. Application of modern computer-based analysis and design methods. **Prerequisites**: C or better in PETE 2050 and ES 2330. (Normally offered fall semester)

**3265. Drilling Fluids Laboratory. 3.*** Measurements of physical and chemical properties of drilling fluids. Includes experiments on mud rheological properties, mud weight, water loss, mud contaminants and their treatments. Includes processing and interpretation of data and writing technical reports of their work. **Prerequisites**: PETE 3255. (Normally offered fall and spring semesters)

**3715. Production Engineering. 3.*** Provides elements for design and analysis of surface production processes, including fluid separation, pumping and compression, measurement and treatment of production fluids, basic design of artificial lift system, and analysis and optimization of production systems. **Prerequisites**: C or better in PETE 2050, ES 2310, and ES 2330. (Normally offered spring semester)

**3725. Well Bore Operations. 3.*** Covers many facets of completion and intervention technology. The material progresses through each of the major design, diagnostic and intervention technologies, ending with effect of operations on surface facilities and finally plug and abandonment requirements. **Prerequisites**: C or better in ES 2410 and PETE 2050. (Normally offered spring semester)

**3900. Undergraduate Research in Petroleum Engineering1. 1-6 (Max. 6).** Students carry out research appropriate to undergraduates, under faculty supervision. May be taken more than once. Prerequisite: junior standing in petroleum engineering or consent of instructor.

**4000. Environment, Technology and Society1. 3.** Explores relationships among technology, the environment and society. Studies social and humanistic aspects of using current and future technology to understand and solve environmental problems. Cross listed with CHE 4000. Prerequisites: junior standing and completion of two university studies science courses (SB, SP, SE) or consent of instructor.


**4200. Natural Gas Engineering. 3.** Studies development of natural gas reservoirs for normal production and as storage fields. Includes back pressure tests, hydrates, pipeline problems, cycling and use of the material balance equation. Also processing of natural gas, including compression, expansion, refrigeration, separation, sour gas treating, sulfur recovery, LNG production and carbon dioxide separation. **Prerequisites**: PETE 2050. (Normally offered fall semester)

**4215. Rock Mechanics1. 3.** Covers rock mechanical properties, stress and strain in rock and rock masses, rock failure mechanisms, thermal-hydraulic-mechanical-chemical (THMC) coupling, and their applications to ground surface subsidence/uplift, borehole instability, and hydraulic fracturing. Dual listed with PETE 5215. **Prerequisites**: ES 2330 and 2410.
4225. Well Test Analysis. 3.* Aims to present the fundamental concepts of well test analysis. The mathematical formulations presented are a critical facet of the methodology used in the interpretation. The formation gathered from the interpretation will help analyze, improve, and forecast the potential of the well and the reservoir. **Prerequisite:** PETE 3200.

4250 [3250]. Drilling Engineering. 3. Principles and practices of rotary drilling, including rock mechanics, hydraulics, drilling fluids and hole deviation. Oil and gas drilling equipment models. Drilling fluid tests, casing design. **Prerequisite:** PETE 2050.

4320. Well Log Interpretation. 3.* Studies use of various types of open hole logs for quantitative evaluation of formations. **Prerequisites:** C in PETE 2050. (Normally offered spring semester)

4340. Petroleum Economics. 3.* Applies principles of economics to petroleum properties. Studies taxation, present worth, rate of return, payout and decisions under uncertainty. **Prerequisite:** PETE 3200. (Normally offered fall semester)

4736. Petroleum Engineering Design. 4.* [COM3] Design and development of petroleum reservoirs using principles and skills learned in the Petroleum Engineering program. Application of software for design and analysis of the drilling, reservoir and production of petroleum. **Prerequisite:** PETE 3200, 3255, 3715, and 3725, C in COM2. (Normally offered fall and spring semesters)

4850. Shale Reservoir Development1. 3. Provides an overview of the geoscience and engineering aspects involved in the exploration and development of shale reservoirs. Topics covered include Organic Geochemistry, Geomechanics, Petrophysics, Geophysics, Reservoir and Completion Engineering, and Drilling. The primary phases involved in obtaining hydrocarbon production from shale reservoirs are detailed. **Prerequisites:** GEOL 1100, PETE 2050, and PETE 3200.

4970. Internship in Petroleum Engineering1. 1-6 (Max. 6). Enables credit for students in appropriate engineering activities while serving as interns in an industrial, government, or other setting. **Prerequisites:** Must be involved in a petroleum engineering co-op/internship experience; consent of instructor.

4990. Topics in Petroleum Engineering1. 1-6 (Max. 6). Features topics not included in regularly offered classes. Section I is individual study. Other sections are group study by seminar or in class format. **Prerequisites:** PETE 2050 or concurrent enrollment.

*Course open to students in the major only.

1Elective courses may be offered in any semester.
Prerequisites

Prerequisites must be satisfied before you can take any courses. If you do not have the prerequisites for a certain course but you still want to take the class, you must submit a petition to waive the prerequisites. If your request to waive the prerequisite is granted, you can take the course. You could find the prerequisites of all courses in the Course Descriptions section or examine the following diagram:
Requirements and Policies

General Requirements

1. In order to receive a degree from the College, minimum GPA requirements must be met. First, the student must have at least a 2.0 cumulative GPA on all courses completed at UW. Secondly, the student must also have at least a 2.0 cumulative GPA on all engineering courses completed at UW. Note that transfer work and AP credit do not enter into the computation of a UW grade point average.
2. The required minimum number of upper division credits is 48.
3. To graduate from UW, a minimum of 30 credits of upper division courses must be taken from UW.
4. A grade of C or better in the following prerequisite courses is required:
   • All Engineering Science (ES) courses
   • All MATH courses that are prerequisites to ES courses
   • PETE 1060 Introduction to Petroleum Engineering Problem Solving
   • PETE 2050 Fundamentals of Petroleum Engineering
   • PETE 4736 Petroleum Engineering Design

University Studies Program (USP) Policies

1. Students must complete all required USP 2015 courses: First Year Seminar (FYS), Communication (COM1, COM2, and COM3), Human Culture (H), Physical & Natural World (PN), Quantitative Reasoning (Q), and US & Wyoming Constitutions (V) courses.
2. All three components of the freshmen USP (FYS, Q, and COM1) should be completed the first year, except if remedial math is required, but the other two components should not be delayed.
3. Current UW students with fewer than 60 earned hours may opt into USP 2015 by petition to replace USP 2003 program.
4. ENGL 1010, ESL 1210, and HP 1020 will count for the WA requirement under USP 2003 and the COM 1 requirement under USP 2015.
5. Students must earn a grade of C or better in their First-Year Seminar and Communication 1, 2, and 3 courses. A grade of “D” will suffice for courses in the other categories.
6. Students who have earned more than 30 post-high school credit hours are exempt from taking a FYS course by emailing the Office of the Registrar (registrar@uwyo.edu) and indicating the number of credits that you have transferred to UW plus proof of high school graduation. Exemptions may also be granted by petition for students who have spent a successful year in residence at another college or university even if they have not quite earned 30 credits. Download the petition form at http://www.uwyo.edu/registrar/students/forms_and_petitions.html.

Second Bachelor’s degree

For students seeking a second bachelor’s degree who obtained the first degree at an accredited institution, the following guidelines must be followed:

1. Students have to complete a minimum of 30 additional credits at UW, 12 of which must be upper division.
2. Students have to meet the program requirements.
3. Students do not have to meet the USP requirements except the U.S./Wyoming Constitution course (V) and Communication 3 (COM3).
4. Students may meet the V requirement in one of three ways:
   • Completion of a UW V course;
   • Completion of a course that has been articulated with UW; or
• Completion of a U.S. Constitution course and a passing grade on the WY Challenge exam administered by the Political Science department (http://www.uwyo.edu/pols/challenge-exam/).

Transfer students

1. Community college students who earn an AA, AS, or AB degree during the spring of 2015 or after will receive a waiver for all USP 2015 requirements except the U.S./Wyoming Constitution course and Communication 3.
2. Community college students who have not earned an AA, AS, or AB degree will have to fulfill all USP 2015 requirements.
3. Students who have earned more than 30 post-high school credit hours are exempt from taking a FYS by emailing the Office of the Registrar and providing proof of high school graduation. Exemptions may also be granted by petition for students who have spent a successful year in residence at another college or university even if they have not quite earned 30 credits. Download the petition form at http://www.uwyo.edu/registrar/students/forms_and_petitions.html.
4. Transfer students may meet the V requirement in one of three ways:
   • Completion of a UW V course;
   • Completion of a course that has been articulated with UW; or
   • Completion of a U.S. Constitution course and a passing grade on the WY Challenge exam administered by the Political Science department (http://www.uwyo.edu/pols/challenge-exam/).
5. Transfer students can meet the COM 2 requirement in several ways:
   • Completion of a UW COM 2 course;
   • Completion of a COM 2 course that has been articulated with UW;
   • Completion of a COM 2-type course that has been nominated for USP inclusion by a community college (articulation paperwork will be necessary);
   • Completion of an intermediate composition course and a public speaking course;
   • Completion of either an intermediate composition course and a passing score on the public speaking exam administered by the Communication & Journalism Department or completion of a public speaking course and successful petition for advanced writing status at UW.

Transfer Credit Limit*

1. To graduate with a degree in Petroleum Engineering from UW, students must successfully complete a minimum of 20 hours of required PETE courses from the University of Wyoming.
2. For transfer students, once a student has transferred to Petroleum Engineering, she/he may take no more than 9 additional transfer credits at other institutions.
3. For non-transfer students, students may take no more than 18 transfer credits at other institutions.

*This new transfer credit policy begins in the 2017/2018 academic year.

Academic Suspension

Students who have been academically suspended from UW twice are no longer eligible to enroll in the Petroleum Engineering program and will be formally dismissed from the program.

Repeating a Course

Students who fail a PETE class three times can no longer enroll in that class.
Satisfactory (S)/Unsatisfactory (U) Grade

Students may not take a course for S/U credit to satisfy any requirement for a degree from the College of Engineering and Applied Science, unless the course is offered for S/U credit only.

Online Courses

Students are not encouraged to take online PETE courses at other institutions. However, if a student would like to take an online PETE course, this must be approved by the department prior to enrolling in the class. A curriculum adjustment form must be completed and submitted for approval. If the request is approved, then an online PETE course may be taken by student and the grade/credits transferred to UW.
Technical Electives

The technical electives in the Petroleum Engineering curriculum can be used to take a concentration or a minor. The number of credits of upper-division courses must be satisfied, therefore, 13 elective credits of must be 3000-level or higher. Technical electives must be selected with your advisor’s approval.

Concentrations

The Department of Petroleum Engineering has established concentrations that could shape your interest further or acquire some useful transferable skills. A concentration is not a minor and will not be stated on your diploma but you add it on your resume. If you choose a concentration, it should be declared by filling out the Program Change Form (see Page 27).

Petroleum Engineering Curriculum allows for the following Elective Concentrations:

- Unconventional Reservoir
- Chemical Engineering
- Mechanical Engineering
- Graduate School Preparation
- Self-Directed

Unconventional Reservoir concentration

PETE 4215 Rock Mechanics (3 credits)
PETE 4850 Shale Reservoir Development (3 credits)
PETE 4990 Topics in Petroleum Engineering: Unconventional Reservoir (3 credits)
PETE 4990 Topics in Petroleum Engineering: Tight Gas Sands and Coal Bed Methane (3 credits)
PETE 3000+ (3 credits)

Chemical Engineering concentration

CHE 2005 Process Analysis (3 credits)
PETE 3025 Transport Phenomena (3 credits) or CHE 3026 Heat Transfer
PETE 3030 Unit Operations (3 credits) or CHE 3028 Mass Transfer
CHE 4060 Reaction Engineering (3 credits)
CHE 3070 Process Simulation and Economics (3 credits)
CHE 3000+ (3 credits)

Graduate School Preparation concentration

PETE 3900 Undergraduate Research (3 credits)
COSC 3340 Scientific Computing (3 credits) – it can be taken in the fall semester of senior year
MATH 4340 Numerical Methods for Ordinary and Partial Differential Equations (3 credits) – it can be taken in the spring semester of senior year.
PETE 4060 Flow Through Porous Media (3 credits) – it can be taken in the spring semester of senior year.
PETE 4310 Fundamentals of EOR (3 credits) – it can be taken in the spring semester of senior year.
MATH/PETE 3000+ (3 credits)

Mechanical Engineering concentration

ME 3040 Thermodynamics II (3 credits)
ME 3360 Fundamentals of Transport Phenomenon (3 credits)
ME 3450 Properties of Materials (3 credits)
ME 3170 Machine Design (3 credits)
ME Electives (3000+ or higher) (6 credits)

**Self-Directed concentration**

If you elect not to choose a concentration or minor, your technical electives must be approved by your advisor and must contain at least one GEOL and two PETE courses. This is referred to as the Self-Directed concentration.

The following electives policy must be followed for students who choose Self-Directed concentration:

- Electives must be upper level (3000+ level) science, technology, engineering, or mathematics (STEM) courses, or courses in the College of Business or College of Law (with a technical component). Lower division courses (1000/2000 level) may be allowed, particularly if they are prerequisites for higher level courses in an area in which the student has an appropriate educational objective. For a lower level course to be accepted, the student must have a clearly articulated argument for the course. Also remember that students must complete 48 upper-division hours.

- The following is a list (in alphabetical order) of disciplines in which appropriate courses may be found: Agriculture (all except Agriculture Economics and Family and Consumer Science), Agroecology/Entomology/Soil Science, Anthropology, Astronomy, Atmospheric Science, Biology/Life Science, Botany, Business (dealing with decision science), Chemistry, Computer Science, Earth Systems Science, Energy Resources, Engineering (all disciplines), Environment and Natural Resources, Geography, Geology and Geophysics, Law (dealing with technical issues), Mathematics, Molecular Biology, Physics, Statistics, and Zoology.

- Courses in the arts, culture, humanities, social sciences, government and the like (in general, those areas which are addressed in the University of Wyoming - University Studies Program) will not be accepted as electives.

The approved courses in the College of Business and College of Law for the Self-Directed concentration:

- IMGT 2400 Introduction to Information Management (3). This course is the prerequisite of IMGT 3400.
- IMGT 3400 Database Management Systems (3)
- IMGT 4020 Information Security (3). Cross listed with ACCT 4020.
- IMGT 4455 Systems Analysis and Design (3). Cross listed with MGT 4455.

- ECON 4320 Mathematical Economics (3)
- ECON 4350 Game Theory (3)
- ECON 4400 Environmental Economics (3)
- ECON 4410 Natural Resource Economics (3)
- ECON 4430 Energy Economics (3)

- FIN 3250 Corporate Finance (3)
- FIN 3310 Investment Management (3)
- FIN 3520 Financial Markets and Institutions (3)
- FIN 4250 Advanced Corporate Finance (3)
- FIN 4400 Empirical Finance (3)
- FIN 4710 Risk Management (3)
- DSCI 4240 Computer Applications in Decision Sciences (3)

- LAW 6660 Environmental Law (3)
- LAW 6725 Intellectual Property (3)
- LAW 6780 Mining Law (2)
- LAW 6790 Oil and Gas (3)
- LAW 6800 Public Lands (3)
- LAW 6860 Water Rights (3)
LAW 6865 Natural Resources Law (3)
LAW 6870 Water Pollution (3)
LAW 6875 Hazardous Waste and Water Pollution Law (3)

Note: If an approved course (one of the courses in the above list) requires a prerequisite course that is not an approved course, the prerequisite course, needs to be taken first, but it will not be counted toward your degree.

Minors

Elective courses can also be used to obtain a minor (Math, Geology, Economics, Management, and Business). If you want to obtain a minor, you have to officially declare the minor using the Program Change Form (Page 27). Students are referred to the respective departments for further information. The minor requirements are checked by the respective department, not Petroleum Engineering Department! The Petroleum Engineering Program still requires that the number of upper-division credits be satisfied (i.e., 13 credits of electives must be 3000+). If you decide to drop your minor, the requirements of the Self-Directed concentration will apply.

At the moment, we allow students to use the elective courses to obtain the following minors:

Math Minor
MATH 2250 Elementary Linear Algebra (3 credits)
MATH 2800 Mathematics Major Seminar (2 credits)
MATH 3205/3500/3340 (3 credits)
MATH 3000+ (6 credits)
Approved elective (3000+) (4 credits)

Geology Minor
GEOL 2000 Geochemical Cycles and the Earth System (4 credits)
GEOL 3400 Geological Hazards OR GEOL 3500 Global Change OR GEOL 3600 Earth and Mineral Resources (4 credits)
GEOL 3000+ (5 credits)
Approved elective (3000+) (5 credits)

Economics Minor
ECON 1010 Principles of Macroeconomics (3 credits)
ECON 1020 Principles of Microeconomics (3 credits)
ECON 3010 Intermediate Macroeconomics (3 credits)
ECON 3020 Intermediate Microeconomics (3 credits)
ECON 3000+ (3 credits)
ECON 4000+ (6 credits)

Management Minor
MGT 3210 Management & Organization (3 credits)
MGT 3410 Human Resource Management (3 credits)
MGT 3420 Org Behavior & Leadership (3 credits)
Choose three courses from the following: (9 credits)
MGT 3110 Business Ethics (3 credits)
MGT 4220 Talent Acquisition (3 credits)
MGT 4240 Performance & Compensation (3 credits)
MGT 4260 Training & Development (3 credits)
MGT 4340 Law for Managers (3 credits)
MGT 4360 Business Law for Entrepreneurs 3 credits)
MGT 4430 Organizational Design & Change (3 credits)
MGT 4500 Employee to Entrepreneur (3 credits)
MGT 4510 New Entrepreneurial Venture (3 credits)
MGT 4560 Entrepreneurial Venture (3 credits)
DSCI 3210 Intro to Operations & Supply Chain Management (3 credits)
DSCI 4260 Project Management (3 credits)

Business Minor

ACCT 1010 Principles of Accounting I (3 credits)
ACCT 1020 Principles of Accounting II (3 credits)
FIN 3250 Corporate Finance (3 credits)
MGT 1040 Legal Environment of Business (3 credits)
MGT 3110 Business Ethics (3 credits)
MGT 3210 Management and Organization (3 credits)
MKT 3210 Introduction to Marketing (3 credits)
STAT 2010, 2050, or 2070 Statistics (4 credits)
Choose one Upper Division Business Course (3 hours)

Chemistry Minor

CHEM 2230 Quantitative Analysis (4 credits)
CHEM 3000+ (4 credits)
Approved electives – 1 GEOL (4 credits) and 2 PETE courses (6 credits)
Degree Check

A Degree Check must be done before you graduate. This check is done by you, your advisor, department head, and college and university designees. We want to make sure that all of your degree requirements will be met.

1. To initiate this, you have to submit the advisor-approved degree check sheet, listing your grades of all courses already completed, to the department 3 semesters (or at least one calendar year) before your expected graduation date. This will provide enough time for any corrective actions, if needed.

2. On the degree check sheet, you need to indicate the semester in which you will be taking your remaining courses, along with intended technical electives and/or human culture electives.

3. The degree check sheet is not a binding contract. You still can change the elective/human culture courses you want to take, but you must inform your advisor in advance and your advisor will inform the college.

4. After your degree check sheet is reviewed, you will be notified if any corrective action is needed.

The Degree Check Sheet is also used for other purposes. You are required to update your degree check sheet before you meet with your advisor or before you submit a petition. The consideration of certain petitions will not be performed without the advisor-approved degree check sheet.

Download the Degree Check sheet at

http://www.uwyo.edu/petroleum/undergraduate/current-students/curriculum.html

It is important to note that this form must be typed (filled out on the computer) and readable.

The approval process of the degree check takes several weeks to complete. Therefore, it is important that students submit it at least 3 semesters before their expected graduation date.
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<tr>
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**APPROVED ELECTIVES**

At least 13 hrs must be 3000-level or higher

Minimum Required: 18
UW Required PETE Hours: 20
Maximum Transfer hours: 19

Total Transfer Hours: 0
TOTAL HOURS REMAINING: 128
# PETROLEUM ENGINEERING DEGREE CHECK (2015-2016)

**STUDENT**

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Minimum Required: 6

**MATH**

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Minimum Required: 15

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Minimum Required: 23

**US & WY Constitution and Human Culture**

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Minimum Required: 9

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Minimum Required: 3

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Minimum Required: 15

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Minimum Required: 39

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Minimum Required: 18

Total Hours: 128

**TOTAL HOURS REMAINING** = 128

Student Signature: Date
Advisor approval: Date
Department approval: Date
College approval: Date
The BS/MS Quick Start program in Petroleum Engineering is designed to present highly qualified UW students with the opportunity to begin graduate study while completing their Bachelor of Science (BS) degree in Petroleum Engineering. This program allows for early planning of the graduate portion of a student’s education and provides more flexibility in the number of required courses and the order in which they are taken. The more efficient and better-planned use of time should result in reduction of the time required for obtaining the Master of Science in Petroleum Engineering.

The Quick Start program contains two essential elements:

1. Qualified students may receive provisional admission to the Petroleum Engineering graduate program prior to completing the normal application process. This provisional admission will permit students to make their long-term educational plans earlier in their studies, thus providing enhanced opportunities for course selection and involvement in research.

2. Students in the program may apply up to six credit hours of 5000-level courses toward both the BS and MS degree programs. By completing successfully up to six credit hours of graduate classes during their senior year, these students will have demonstrated their ability to do graduate-level course work as undergraduates, easing their transition to the graduate program.

Admission

Application for admission to the Quick Start program may be made when the student enters the second semester of their junior year. Minimum requirements for admission to the joint program are:

1. A minimum cumulative GPA of 3.4
2. A minimum GPA of 3.4 in PETE courses
3. Three letters of recommendation (at least two must be from Petroleum Engineering faculty at UW)

Retention requirements

Prior to completion of all requirements for the BS degree, students in the Quick Start program must complete all requirements for admission to the Petroleum Engineering graduate program. However, the Graduate Records Examination (GRE) requirement may be waived. Failure to complete admission requirements will result in suspension from the program. A student in the Quick Start program must maintain a cumulative GPA of at least 3.4 in their undergraduate courses, 3.4 in their departmental courses and at least 3.0 in 5000-level courses in order to remain in good standing in the program. Failure to meet the GPA requirement places a student on probation for one semester. If the GPA requirement is not met after that semester, the student will be suspended from the program.

Plan of study

Students in the BS/MS Quick Start program must complete a Plan A or Plan B master program of study in consultation with a faculty advisor. The program of study must include all the courses to be taken from the senior year through the end of the MS program. This plan must be filed with the Petroleum Engineering Graduate Coordinator by the end of the first semester in which the student has been admitted into the program. Use the form on Page 19.
**Quick Start Program of Study**

---

**QUICKSTART PROGRAM OF STUDY**

*PLEASE PRINT AND READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.*

*THIS FORM MUST BE TYPED AND TRANSCRIPTS ATTACHED*

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**PROPOSED PROGRAM:**

A. Transfer work from other institutions - Up to 9 hours of graduate coursework can be transferred toward a master’s program. Official transcript must be on file or sent to the Graduate School upon completion. Must carry a letter grade of B or better. S/U or P/F grading not permitted.

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course #</th>
<th>Course Title</th>
<th>Sem Hrs.</th>
<th>Grade</th>
<th>Institution</th>
<th>Date (Sem/Yr)</th>
<th>Comments</th>
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**TOTAL TRANSFER HOURS**

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**B. List the two dual credit hours taken during the senior year of the B5/MS program in lines number one and two below for a total of six (6) credit hours. Any other courses taken during the undergraduate program must be approved by the Graduate School and reserved for graduate credit. These hours will count toward the Rule of 12 and should be listed under Section B.**

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course #</th>
<th>Course Title</th>
<th>Sem Hrs.</th>
<th>Grade</th>
<th>Date (Sem/Yr)</th>
<th>Comments</th>
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Graduate courses taken at the University of Wyoming including courses student has taken, is taking, and will take as part of program of study. A combined total of 12 non-degree seeking hours (includes any reserved undergrad courses, transfer, and non-degree coursework) may be applied to the program of study. If more lines are needed, please continue on page 1.

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Course #</th>
<th>Course Title</th>
<th>Sem Hrs.</th>
<th>Grade</th>
<th>Date (Sem/Yr)</th>
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**TOTAL UW COURSE HOURS**

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**TOTAL COURSE HOURS ABB**

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Frequently Asked Questions

• How many credits should I take?
In consultation with your advisor, you should take the number of credits you are comfortable taking which will ensure your success in all of your courses. Be mindful of your other responsibilities and create a sound academic plan with the help of your advisor. The number of credits you take may vary from semester to semester. Note the recommended credits for each semester on the department curriculum for a student to complete the degree in 4 years.

• How do I view my Degree Evaluation?
To access your degree evaluation, from WyoWeb, you must log in to WyoRecords and select the tab for Student Records. A link for ‘Degree Evaluation’ will be listed under the Student Records tab. This link will take you to the audit of your requirements within Degree Works.

• All of my grades are not visible on my degree evaluation. How can I change this?
There is a possibility that all of your grades may not be updated in the system. You can visit the Office of the Registrar and inform them of missing grades in your degree evaluation or communicate this to the Coordinator, Student Advising in your department.

• I am about to graduate soon, what preparations are necessary?
It is important that your degree check sheet has been approved and you have taken the Fundamentals of Engineering (FE) exam. When your degree check sheet has been approved, you will receive an email from the college’s Center for Student Advising representative stating that it has been approved, along with the anticipated graduation date form which you would need to complete and information on the FE exam. You can find more information here: http://www.uwyo.edu/ceas/resources/studentservices/commencement.html

• Where can I find the degree check sheet?
You can find the department’s degree check sheet on the Petroleum Engineering webpage. On the left hand side of the page, under the brown Petroleum Engineering bar, click on Undergraduate Students, then Curriculum and choose the appropriate degree check sheet (whether Pre Fall 2015 or Fall 2015 or After). You are encouraged to download and save this sheet on your personal computer and update it each semester.

• When do I hand in my degree check sheet?
Your Degree Check Sheet should be handed in 3 semesters before your anticipated graduation date.

• How do I complete my degree check sheet?
Students are encouraged to complete their degree check sheet with their advisor. The degree check sheet is an excel document that automatically populates the Credit column when the grade for each course is entered in the Grade column. If a course grade was transferred, indicate this by putting a T in front of the letter grade. For instance TB, which stands for transfer grade B. After filling out the degree check sheet, print, sign and hand it in to the department’s Coordinator, Student Advising.

• I took a course at a previous institution that I think may be the same as a course here at UW but it is not in the transfer catalog. How can I determine if this course can be transferred?
In a case like this, students are required to submit the complete syllabus for the course. If the course is an engineering course, students need to fill out the college’s transfer evaluation form. This form along with the syllabus should be taken to the office of the Coordinator, Student Advising. It will then be given to the appropriate faculty member for
evaluation. If the course is a subject outside of the engineering college, for instance the Chemistry department, send the syllabus in to the Coordinator, Student Advising and it will be sent to the Office of the Registrar.

- What happens if my cumulative GPA goes below 2.0?

If your cumulative GPA falls below 2.0, you will be placed on academic probation at the end of the semester. You will be notified of this and encouraged to visit with your advisor to develop a plan to help you to improve in the following semester. If your semester GPA falls below 2.0 while on academic probation you will be suspended from the university.

- How do I get reinstated if I was placed on academic suspension?

A student placed on academic suspension can petition for reinstatement after sitting out for one full semester. He/she will need to visit the Office of the Registrar’s page, print the Petition for Academic Reinstatement form, complete it, and hand it in to the college.

- How do I go about changing my major?

You will need to complete the Program Change form. After it is signed by the Petroleum Engineering Department Head you will need to collect your folder from the office of the Coordinator, Student Advising and take both folder and form to your new department.

- How do I find my advisor?

The name of your advisor can be found from WyoWeb. You must log in to WyoRecords and select the tab for Student Records. Click on ‘Academic Profile’ and your advisor’s name will be listed. It will also be listed on your degree evaluation.

- Is advising restricted to advising week?

Advising is not restricted to advising week only. It is important that you get to know your advisor and feel comfortable checking in with him/her throughout the semester.

- How do I prepare for advising week?

It is very important that students are prepared for advising week to maximize the benefits.

1. Be aware of when advising week will take place each semester.

2. Know your advisor. Some students may have a different advisor than they did the previous semester. It is important that each student knows the name of his/her advisor and where to find him/her.

3. Check your email daily and read carefully any emails sent out by college and department staff and/or your advisor regarding advising week.

4. Ensure that you schedule a specific day and time to meet with your advisor. Each advisor will indicate how and when they would like their advisees to schedule an advising appointment.

5. Ensure that you collect a Course Request Form from the main office EN 4015 or the office of the Coordinator, Student Advising, EN 4019 before your advising appointment.

6. Be mindful of the courses you are hoping to take in the upcoming semester and ensure that you have all the necessary prerequisites for each course.

7. Come to your appointment prepared with any questions or concerns that you may have. This week is a great opportunity to talk with your advisor about a possible minor, class options, internships etc.

8. If you have any questions about advising week, ask! The faculty and staff are here to help.
• I have an associate’s degree. Will I be exempt from any courses?

Yes. Students with an Associate of Arts degree (AA) or an Associate of Science degree (AS) will be exempt from all USP courses except the US & Wyoming Constitutions course and the COM3 requirement, which is completed during the senior year of the degree program.

• I have a previous bachelor’s degree and I am currently a second bachelor’s degree seeking student. Will I be able to be exempt from any courses?

Yes. Just like a student who has completed his/her Associate’s degree, students with a previous bachelor’s degree will be exempt from all USP courses except the US & Wyoming Constitutions course and the COM3 requirement, which is completed during the senior year of the degree program.
Forms and Petitions

All forms in the Forms and Petitions section can be downloaded or printed out by double-clicking the form or from the department’s website, http://www.uwyo.edu/petroleum/undergraduate/current-students/curriculum.html. You need to submit a form or petition when:

1. You want to take an **undergraduate research or internship**. You must submit the form shown on Page 24 and your written proposal **before** you will be approved to register for a course section in undergraduate research or internship. **No credits will be given when the undergraduate research or internship is done first without submitting the form and registering for the course.**

2. You want to **adjust your curriculum** because:
   a. you have taken a course/similar course at another institution, which might be a good substitute for an existing course in the Petroleum Engineering Curriculum at UW, or
   b. you have taken a similar course in another program at UW, which might be a good substitute for an existing course in the Petroleum Engineering Curriculum at UW, or
   c. you plan to take a similar course in another program at UW, but you are not certain if that particular course can be a substitute for your targeted course in the Petroleum Engineering Curriculum at UW.

   Submit your petition request using the form shown on Page 25.

3. You want to **transfer a course** that you have taken at another institution, or you plan to take a course at another institution but you are not certain if that particular course is transferrable to UW. Submit the Transfer Evaluation Form shown on Page 26. By doing this, if the transfer course is considered equivalent to an existing course at UW, the equivalency will be kept in the database. For future students from the same institution, the transfer of the same course will then be automatic.

4. You want to **change/add a major, minor or concentration**. Submit the form shown on Page 27.

5. You want to **request an exception**, such as adding/dropping a course or withdraw from a course after the deadline.

   Submit the form shown on Page 28.

6. You want to **take courses more than the maximum credit hour load** in one semester. Submit the petition form shown on Page 29.

7. You want to **request for a change of advisor**. Submit the form shown on Page 30.

For other forms, visit: [http://www.uwyo.edu/registrar/students/forms_and_petitions.html](http://www.uwyo.edu/registrar/students/forms_and_petitions.html)
Department of Petroleum Engineering – University of Wyoming

Undergraduate Research and Internship Form

Print Name: ________________________________
W#: ________________________________
Phone: ________________________________
E-mail: ________________________________

Faculty sponsor: ________________________________
Phone: ________________________________
E-mail: ________________________________

CHECK ONE:

_____ Sophomore
_____ Junior
_____ Senior

REGISTRATION FOR:

_____ Fall Year ______
_____ Spring
_____ Summer

CHECK ONE:

_____ PETE 3900 Undergraduate Research
_____ PETE 4970 Internship in Petroleum Engineering

Proposed Number of Credits: _______

• A maximum of 3 credits may be earned in any one semester.
• A maximum of 6 credits may be earned for each of the two courses.
• Each credit hour should reflect 3 hours of work per week on the project.

The student should write a brief description of the project in this space (this portion should summarize a longer proposal approved by the Faculty Sponsor):

The signature below signifies that the Faculty Sponsor has reviewed a written proposal summarized above.

FACULTY SPONSOR SIGNATURE: ________________________________ DATE: ____________

STUDENT SIGNATURE: ________________________________ DATE: ____________
Curriculum Adjustment Petition (1 page – double click to download or print)

Department of Petroleum Engineering

Petition for Curriculum Adjustment

Student Name: _______________________________ W #: __________________

Class Status: FR SO JR SR SB GPA: _______ Expected Graduation Date: _______

I request that the following courses, from ____________________________
( Please Print - University Name

be approved in lieu of the UW required courses listed below.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Semester Taken</th>
<th>Grade Received</th>
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— for —

UW Required Course(s)

<table>
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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Semester Taken</th>
<th>Grade Received</th>
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Justification: (Attach a new sheet if more space is needed. Attach course syllabi, if needed. Incomplete information is cause for delay or denial of your request.)

Advisor ___________________________ Date ________________  □ Approved □ Denied

Undergraduate Program Director ___________________________ Date ________________  □ Approved □ Denied

Department Head ___________________________ Date ________________  □ Approved □ Denied

Dean of Engineering ___________________________ Date ________________  □ Approved □ Denied
University of Wyoming  Transfer Evaluation Form – College of Engineering and Applied Science  Office of the Registrar

Student Name: __________________________  "W" ID #: __________________
Phone number: __________________________  Major: __________________________

Directions:
1. List planned course(s) to be taken and additional courses to be considered. Be as specific as possible.
2. Attach any course documentation available.
3. Completed requests with student and advisor signatures must be returned to the Office of the Registrar.

SCHOOL NAME: __________________________  LOCATION/CAMPUS: ____________

SHADED AREA IN TABLE to be filled out by University Personnel Only.

<table>
<thead>
<tr>
<th>TRANSFER INSTITUTION</th>
<th>TRANSFER RECOMMENDATION</th>
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<tbody>
<tr>
<td>DEPT/PREFIX</td>
<td>COURSE NUMBER</td>
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<tr>
<td>____________________</td>
<td>____________________</td>
</tr>
</tbody>
</table>

Provide printed name and signature below
Student: __________________________  Date: ________
Student's advisor: __________________________  Date: ________
Department Head for evaluated course(s): __________________________  Date: ________
CEAS Associate Dean for Academic Programs: __________________________  Date: ________

Notes:
•  This form should not be used for one time transfers. Instead, use department curriculum adjustment form.
•  Signing this form indicates transfer is valid for other students. Transfer will be added to Wyoming Transfer Catalog.

Comments:

Office of the Registrar: __________________________  Date: ________
School Code Assigned by Office of the Registrar: ________
University of Wyoming

Program Change Form

Effective Semester of Change: Spring □ Fall □ Summer □ 20___

Student’s Name: ___________________________ Student ‘W’: _________

Student’s Signature: ___________________________ Date: ________________

What would you like to do? (check all that apply – see 2nd page for additional term explanation)

☐ Add a major(s) ☐ Add a concentration(s) ☐ Add a Second Bachelor’s
☐ Remove a major(s) ☐ Remove a concentration(s) Change advisor
☐ Add a minor(s) ☐ Add a Dual degree Change campus
☐ Remove a minor(s) ☐ Add a Concurrent major Change degree
☐ Add a Certificate Program

Next, fill out the appropriate lines for the change(s) noted above.

My Current Program Information is...

Degree: □ B.A. □ B.S. Other: ________

Major(s): _____________________________

Minor(s): _____________________________

Concentration: _________________________

Certificate: ___________________________

Campus: ______________________________

Adviser(s): ____________________________

I’d like my Program Information to be...

Degree: □ B.A. □ B.S. Other: ________

Major(s): _____________________________

Minor(s): _____________________________

Concentration: _________________________

Certificate: ___________________________

Campus: ______________________________

Adviser(s): ____________________________

If you are declaring more than one major or degree, which is your primary? _____________________

Finally, get approval from all affected departments for the change(s) noted above; return to the Office of the Registrar.

☐ Approved ☐ Denied ___________________________ (Department Head or designee) Date

☐ Approved ☐ Denied ___________________________ (Department Head or designee) Date

☐ Approved ☐ Denied ___________________________ (Department Head or designee) Date

☐ Approved ☐ Denied ___________________________ (Department Head or designee) Date

OR 4/16

Posted __________ by __________
Exception Request Form

University of Wyoming
Exception Request

Office of the Registrar

This form is to be used to request exceptions to University Regulations that affect a student’s academic record at the University of Wyoming. Please be aware of the fact that there is no guarantee that your request will be approved. This form should not be used for requests pertaining to financial matters. (see reverse) A separate form is required for each request.

Student’s Name ___________________________ “W” Number ___________________________

Mailing Address ___________________________ Major ___________________________

Street ___________________________ Major ___________________________

City ___________________________ State ___________________________ Zip ___________________________

College ___________________________ Engineering ___________________________

Are you receiving Financial Aid? _____ Are you a member of SEO (Student Educational Opportunity)? _____

Are you a student athlete? _____ Are you a veteran? _____

Phone ___________________________ E-mail ___________________________ Degree: Bachelors ___________________________

++ Please read the directions and guidelines on the back prior to completing this request form. ++

Request for Action:  
☐ Add a course
☐ Drop a course
☐ Withdraw (after deadline)
☐ Change in number of credits for this course
☐ Other

Course Prefix: __________ Course Number/Section: __________ Credit Hours: __________

Course Title: __________ Term of Course(s): __________ Year __________

I am requesting the following exception to University Regulations based on the following extraordinary circumstances (Please be specific. Attach additional sheets/documentation if necessary):

Signature ___________________________ Date ___________________________

Recommend:

☐ GRANT
☐ DENY

Academic Adviser ___________________________ Date ___________________________

Instructor for Course Listed Above ___________________________ Date ___________________________

Department Head for Course Listed Above ___________________________ Date ___________________________

College Dean or Designee for Course Listed Above ___________________________ Date ___________________________

Comments: ___________________________

Granted ☐ Denied ☐ ___________________________ University Registrar ___________________________ Date ___________________________

Comments: ___________________________

January 2014 ___________________________ Date Posted to Banner ___________________________ By ___________________________
Overload Petition

University of Wyoming

Overload Petition

Name: _____
Local Address: _____
College: Engineering and Applied Science Major: _____
Student ‘W’ ID #: _____ Phone: _____ Email: _____

University policy requires students to petition for an overload when they, for a valid reason, desire to exceed the following specified maximum credit hour load:

Spring or fall semester:
• Undergraduates: 20 credit hours
• Graduates, without an assistantship: 16 credit hours
• Graduates, with an assistantship: 13 credit hours
• Graduates, with half-time assistantship: 15 credit hours

Summer:
• Undergraduates: 12 credit hours
• Graduates, without an assistantship: 8 credit hours
• Graduates, with an assistantship: 6 credit hours

Please check appropriate box:

☐ undergraduate
☐ graduate without an assistantship
☐ graduate with an assistantship

Requesting approval to register for a total of ___ hours for _________ term of 2015 (year)

Reason for request:

Student’s Signature _________________________________ Date ________________

Cumulative UW GPA _________ (as reported by adviser)

Approved Disapproved

☐ ☐ Adviser _________________________________ Date___________

☐ ☐ College Designee (see back) _________________________________ Date___________

Completed petitions with appropriate, required signatures must be submitted to the Office of the Registrar to complete action and for processing.

OR July 2015
REQUEST FOR CHANGE OF ADVISOR

Name ____________________________  Class Standing (circle one) FR SO JR SR SB
Cumulative GPA ____________________
W Number __________________________  Exp. Graduation Date ______________

I am requesting to change my academic advisor:

Current advisor: _____________________  Semester Assigned ______
Requested advisor: ___________________

Reason for request:

Student: ____________________________  Date: __________
Current Advisor: ___________________  Date: __________  □ Approve  □ Deny
Requested Advisor: ___________________  Date: __________  □ Approve  □ Deny
Department Head: ____________________  Date: __________  □ Approve  □ Deny

Departmental Use Only:
Received by: ________________________  Date Entered in Banner: __________

Original forms will be filed in the student’s official advising file

Rev. 2/17