

# PENN STATE UNIVERSITY

Petroleum & Natural Gas Engineering  
115 Hosler Building  
University Park, PA 16802

Phone: (814) 865-6082  
Fax: (814) 863-1875

Dean: Dr. Eric J. Barron, College of Earth and Mineral Sciences  
Program Chair: Turgay Ertekin

## CONTACT INFORMATION

Office	Contact Name	Phone	E-mail
110 Hosler Bldg.	Phyllis Mosesman, Staff Assistant	(814) 865-3437	<a href="mailto:pam9@psu.edu">pam9@psu.edu</a>
110 Hosler Bldg.	Crystal Renaud, Staff Assistant	(814) 865-3437	<a href="mailto:cdr125@psu.edu">cdr125@psu.edu</a>
115 Hosler Bldg.	Turgay Ertekin, Program Chair	(814) 865-6082	<a href="mailto:eur@psu.edu">eur@psu.edu</a>
119 Hosler Bldg.	Robert W. Watson, Undergraduate Officer	(814) 865-0531	<a href="mailto:rww1@psu.edu">rww1@psu.edu</a>
122 Hosler Bldg.	Luis Ayala	(814) 865-8473	<a href="mailto:lfay@psu.edu">lfay@psu.edu</a>
151 Hosler Bldg.	Zuleima Karpyn, SPE Faculty Contact	(814) 863-2273	<a href="mailto:ztk101@psu.edu">ztk101@psu.edu</a>
152 Hosler Bldg.	Phillip M. Halleck	(814) 863-1701	<a href="mailto:pmh2@psu.edu">pmh2@psu.edu</a>
221 Walker Bldg.	Michael Adewumi, Graduate Officer	(814) 863-7598	<a href="mailto:m2a@psu.edu">m2a@psu.edu</a>
203 Hosler Bldg.	Abraham S. Grader	(814) 865-5813	<a href="mailto:asg2@psu.edu">asg2@psu.edu</a>
211 Hosler Bldg.	Daniel Lopus, SPE Student Chapter President	(814) 865-3437	<a href="mailto:dsl133@psu.edu">dsl133@psu.edu</a>

## DEGREE INFORMATION

### DEGREES OFFERED IN PETROLEUM ENGINEERING

Degree	Petroleum Hours	Total Hours	Curriculum Description
BS	37	128	<a href="http://www.pnge.psu.edu/undergradprog.htm">http://www.pnge.psu.edu/undergradprog.htm</a>
MS	Variable	30	<a href="http://www.pnge.psu.edu/grad.htm">http://www.pnge.psu.edu/grad.htm</a>
PhD	Variable	Minimum 45, after MS	<a href="http://www.pnge.psu.edu/grad.htm">http://www.pnge.psu.edu/grad.htm</a>
M.ENG*	Variable	33	<a href="http://www.worldcampus.psu.edu/pub/mogem/">http://www.worldcampus.psu.edu/pub/mogem/</a>

\* Master of Engineering in Oil and Gas Engineering Management

ACCREDITATION: Four-year basic level day program in petroleum engineering is accredited by EAC of ABET.

### CURRICULUM DESCRIPTION

Undergraduate degree: A comprehensive program integrating field operations, reservoir engineering, production, drilling, well testing theory and analysis, and economics. Computer applications are stressed in both theoretical and laboratory instructions.

Masters: Supervised study emphasizing multi-phase fluid flow dynamics in porous media, reservoir simulation, advanced reservoir engineering, enhanced oil recovery, unconventional gas recovery, multiphase flow in pipes, well completions and stimulation methods, underbalanced drilling technology and environmentally benign drilling and production techniques. Thesis projects emphasize both experimental and computational elements.

Please note that Master of Engineering in Oil and Gas Engineering Management is offered as an on-line program and is a separate academic degree granting program from Petroleum and Natural Gas Engineering.

Doctorate: In-depth work in current petroleum technology. Basic research in the areas of multi-phase fluid flow dynamics in porous media, numerical modeling, well-testing theory, enhanced oil recovery processes, multiphase flow in pipes, phase behavior, unconventional gas recovery, underbalanced drilling technology and environmentally benign drilling and production techniques. Thesis projects emphasize both experimental and computational elements.

### PROGRAM ADMISSION REQUIREMENTS

Undergraduate: Fifteen approved Carnegie Units including mathematics, English, science, and other courses. Admission is granted by a university-level committee.

Masters: Completion of undergraduate program with a cumulative GPA of 3.0 (minimum). Minimum GRE quantitative and verbal combined score of 1100 with quantitative GRE score of 700 (minimum). International students: TOEFL exam: 213 minimum (computer based test)

Doctorate: Restricted admission based upon critical review of prior academic performance. GRE and TOEFL requirements same as above.



## ENROLLMENT & DEGREES CONFERRED INFORMATION

Academic Year	Freshman	Sophomore	Junior	Senior	Undergraduates	B.S.	Master's	M.S.	Doctor's	Ph.D.
1995-96	8	8	10	11	37	9	12	4	8	1
1996-97	8	10	10	12	40	8	11	3	10	0
1997-98	8	8	8	7	31	7	10	4	10	1
1998-99	8	8	7	8	31	8	12	6	10	3
1999-00	8	8	7	8	31	7	13	6	9	3
2000-01	10	8	7	8	33	8	14	2	11	2
2001-02	11	8	11	6	36	7	16	6	8	4
2002-03	10	11	11	11	43	2	17	6	10	3
2003-04	12	12	12	13	49	5	23	5	8	2
2004-05	11	13	13	12	49	5	20	4	11	2
2005-06*	13	12	12	17	56	10	17	8	14	3

\*Projected

**Cumulative Bachelor Degrees Awarded: 1497**

**Cumulative Master's Degrees Awarded: 340**

**Cumulative Doctorate Degrees Awarded: 107**

## CURRICULUM ANALYSIS

### **MATHEMATICS**

Course Type	Hours Required
Calculus	12
Differential Equations	4

### **PHYSICS**

Course Type	Hours Required
Mechanics	4
Electricity & Magnetism	4
Fluid and Thermal Physics	2

### **CHEMISTRY**

Course Type	Hours Required
General Chemistry	6
Practicums	1

### **GENERAL ENGINEERING**

Course Type	Hours Required
Statics & Strength of Materials	5
Dynamics	3
Thermodynamics and Fluid Mechanics	5

### **HSS**

Course Type	Hours Required
Social Sciences	6*
Humanities	6**
Arts	6

\*Includes 3 hours of Economics.

\*\*Includes 3 hours of Ethics.

### **PETROLEUM ENGINEERING**

Course Type	Hours Required
Rock & Fluid Properties	4
Reservoir Engineering	10
Production Engineering	5.5
Drilling Engineering	5.5
Formation Evaluation	6
Engineering Economics	3
Capstone Design Project	3

### **GEOLOGY**

Course Type	Hours Required
Physical Geology	3
Petroleum Geology	3

### **COMMUNICATION**

Course Type	Hours Required
Rhetoric & Composition	3
Speech Communication***	3
Technical Writing	3

### **OTHER**

Course Type	Hours Required
Health and Physical Activity	3
Computer Science	3
Technical Electives	6

\*\*\*Freshman seminar substitution is permissible.