

UNIVERSITY OF SOUTHERN CALIFORNIA

PETROLEUM ENGINEERING PROGRAM
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DEPARTMENT WEBSITE: <http://www.usc.edu/dept/che/>

DEAN: C. L. Max Nikias, Ph.D
DIRECTOR : Iraj Ershaghi, Ph.D.

CONTACT INFORMATION

Office	Contact Name	Phone	E-mail
Director	Iraj Ershaghi	(213) 740-0321	ershaghi@usc.edu
Petroleum Engineering Program	Maria Valenzuela	(213) 740-0322	peteng@usc.edu

DEGREE INFORMATION

DEGREES OFFERED IN PETROLEUM ENGINEERING

Degree	Petroleum Hours	Total Hours	Curriculum Description
Petroleum Engineering Emphasis	16	132	http://www.usc.edu/dept/che/
Master of Science		27	http://www.usc.edu/dept/publications/cat2002/engineering/
Engineer		60	http://www.usc.edu/dept/publications/cat2002/engineering/
Doctor of Philosophy		60	http://www.usc.edu/dept/publications/cat2002/engineering/

ACCREDITATION

Accredited as an option in Chemical and Mechanical Engineering

CURRICULUM DESCRIPTION

Undergraduate Degree: in petroleum engineering is offered only as an option in chemical or mechanical engineering. The option courses include drilling and production, transport in porous media, formation evaluation, reservoir engineering, and economic evaluation.

Master's Level: Both thesis and non-thesis options course work includes a group of required core courses in advanced reservoir engineering including simulation drilling and formation evaluation. Other elective courses offered to provide areas of specialization.

Doctorate Level: Doctorate Degree requires 60 semester units beyond BS and must have strong independent research component as reflected in completion of approved thesis.

PROGRAM ADMISSION REQUIRMENTS

Undergraduate: evidence of intellectual promise from high school academic record and SAT or ACT tests. 14 units in academic subjects: normally including 3 units English; 3 to 4 units of mathematics, preferably through math analysis; 2 units social studies; 1 unit chemistry; and preferably 1 unit physics.

Master's: BS in petroleum engineering (or other engineering or science with assigned deficiencies) with academic record indicating ability to perform satisfactorily at graduate level. Minimum scores on Graduate Record Examination including advanced examination.

Doctorate: Same as MS except higher undergraduate GPA requirements and GRE scores. Must show aptitude for original scholarly research as indicated by required Ph.D. screening examination:

FACULTY INFORMATION

Name	Degree	Position	Major Field of Interest	E-mail	Phone
Iraj Ershaghi	Ph.D.	Professor/Director	Well/Testing/Fractured Reservoirs/Reservoir Characterization/Geostatistical Methods	ershaghi@usc.edu	(213) 740-0322
George V. Chilingar	Ph.D.	Professor	Carbonate Oil Reservoirs/ Clay/ Mineralogy/ Drilling Fluids/ EOR/ Formation Damage	gchiling@usc.edu	(213) 740-4383
Allan Spivak	Ph.D.	Professor/Lecturer	Reservoir Simulation	peteng@usc.edu	(213) 740-0322
Yanis C. Yortos	Ph.D.	Senior Associate Dean for Academic Affairs/Professor	Transport Processes in Porous Media/Thermal Oil Recovery	yortsos@usc.edu	(213) 740-0317
Elmer L. Dougherty	Ph.D.	Professor Emeritus	Energy Modeling/Petroleum Economics/Reservoir Simulation	peteng@usc.edu	(213) 740-0322
Lyman L. Handy	Ph.D.	Professor Emeritus	Thermal Oil Recovery/Fluid Flow Through Porous Media	peteng@usc.edu	(213) 740-0322
Robert Ehrlich	Ph.D.	Professor/Lecturer	EOR	peteng@usc.edu	(213) 740-0322
Eric Upchurch	M.S.	Lecturer	Drilling	peteng@usc.edu	(213) 740-0322
Victor Ziegler	Ph.D.	Lecturer	Petroleum Reservoir Engineering	peteng@usc.edu	(213) 740-0322
Jalal Torabzadeh	Ph.D.	Lecturer	Completion / Stimulation Formation Damage	peteng@usc.edu	(213) 740-0322

ENROLLMENT & DEGREES CONFERRED INFORMATION

Academic Year	Freshman	Sophomore	Junior	Senior	Undergraduates	B.S.	Master's	M.S.	Doctor's	Ph.D.
1992-93	2	4	2	5	13	5		9	3	3
1993-94	4	2	4	2	12	2		5	3	3
1994-95	2	2	10	4	20	4		10	4	3
1995-96	2	10	8	0	20			7		6
1996-97	0	3	2	2	7	2		6		0
1997-98	0		3	4	7	4		2		1
1998-99			3	3	6	3		3		2
1999-00				3	3	3		2		1
2000-01			3	2	5	2		7		1
2001-02				3	3	1		4	1	1
2002-03			3	3	5	2		9	1	1

Cumulative Bachelor Degrees Awarded: 843

Cumulative Master's Degrees Awarded: 568

Cumulative Doctorate Degrees Awarded: 81

MATHEMATICS

Course Type	Hours Required
Calculus	12
Differential Equations	4

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Calculus	12
Differential Equations	4

PHYSICS

Course Type	Hours Required
Mechanics/wave & sound	4
Thermodynamics, Electricity & Magnetism	4

CHEMISTRY

Course Type	Hours Required
General Chemistry	8
Physical Chemistry	4
Adv. Physical Chem. Or Adv. Organic	4
Organic Chemistry	4
Analytical Chemistry	4

HSS

Course Type	Hours Required
Humanities and Social Sciences	24

PETROLEUM ENGINEERING

Course Type	Hours Required
Reservoir	3
Molecular Transport Process	4
Intro to Transport in Porous Media	3
Formation Evaluation	3
Economics	3
Drilling	3

COMMUNICATION

Course Type	Hours Required
Expository Writing	4
Computer Programming	4
Chem. Process Design	3
Advance Writing	3
Computer Aided Plant Design	3

GENERAL ENGINEERING

Course Type	Hours Required
Engineering Thermodynamics	4
Engineering Economy	3
Chemical Engineering Materials	3
Process Dynamics/Control	4
Unit Operations	4
Chemical Engineering Lab	4
Chemical Process and Plant Design	3
Probability and Statistics	3
Process Separation	4

