

Department of Petroleum Engineering

PhD Programs

On-Campus

North Dakota is a Land of Opportunity! The Bakken formation in the Williston Basin is the second largest producer of oil in the U.S. The discovery of new shale plays as well as the use of advanced technologies to enhance production from existing shale formations has placed UND Petroleum Engineering in a strategic position to serve the future energy needs of the country from unconventional resources. Our program is proud of its high rate of success in graduate job placement and career development within the state and the country in petroleum related fields.

Discovery of new shale plays as well as optimizing the drilling, stimulation and production phases as part of the field development planning in unconventional plays requires utilizing advanced knowledge and technologies. The Department of Petroleum Engineering is fulfilling the immediate needs of the industry with hands-on, problem solving petroleum engineers through its dynamic application based undergraduate and Master degree programs.

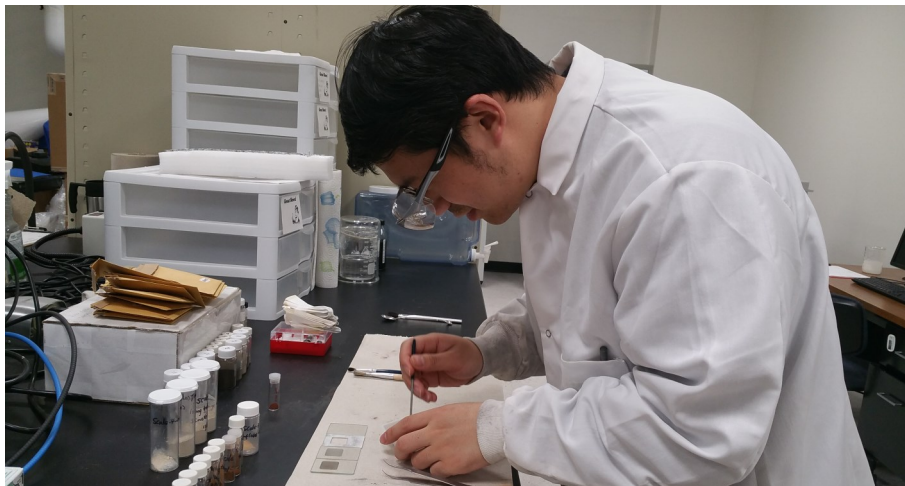
Our P.h.D program aims at graduating the highest quality students, who are innovative, critical thinkers who will work beyond conventional boundaries and are willing to use their strong science and engineering knowledge to unlock existing oil and gas problems and generate advanced technologies for future discovery, drilling and production of hydrocarbon reservoirs.



UND Petroleum Engineering is the only department of its kind in ND dedicated to be the leading research group in all aspects of unconventional plays from exploration to field development; production through abandonment stages.

Current areas of our research focus include:

- ◆ *Geomechanics, production and reservoir studies of Hydraulic fracturing;*
- ◆ *Studies on Re-fracturing for optimization of production from Unconventional Shales;*
- ◆ *Data driven modelling in Unconventional Reservoirs;*
- ◆ *Petrophysical and Geochemical analysis of Shale oil;*
- ◆ *Geophysics and Seismic analysis of Unconventional Reservoirs.*



UND Petroleum Engineering student analyzing a shale sample from the Bakken

Contact us:

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Admission Requirements

- ◆ A baccalaureate degree in a related discipline with a GPA of 3.3 or higher or a Master of Science degree in a related discipline with a GPA of 3.0.
- ◆ Satisfy the Graduate School's English Language Proficiency requirements as published in the Graduate Catalog.
- ◆ In addition to meeting the general provisions in the UND graduate catalog and the minimum requirements in items 1-2 above, candidates are assessed using a holistic process that considers Student's Record of Publications, GRE test scores (for students who are applying with a B.S. engineering degree from a non-ABET accredited program), transcripts of previous college work, relevant research and work experience, letters of recommendation, research interests, and English language skills. Students must specify a track on their admission form to facilitate this evaluation.
- ◆ Students admitted to an engineering M.S.P.E. program but meeting the minimum requirements in items 1-2 above, may after one calendar year, and upon the recommendation of his/her advisory committee, request to by-pass the master's degree and work directly toward the Ph.D. degree. The recommendation of the advisory committee shall be brought to a vote by the program graduate committee relevant to the degree track requested by the student. A minimum of one week before such a meeting, the program graduate committee shall be notified and provided with the student's updated file which shall consist of the materials used for application into the M.S.P.E. program, a transcript of all academic work completed at UND, and any additional materials the student wishes to have considered. If the recommendation is approved by the relevant graduate committee, the student will be given the qualifying exam. Passing this exam will advance the student to Approved Status in the Doctoral Program in Petroleum Engineering.

Degree Requirements

Students seeking the Doctor of Philosophy degree at the University of North Dakota must satisfy all general requirements set forth by the Graduate School as well as particular requirements set forth by the Petroleum Engineering Doctoral Program as listed below:

- ◆ Completion of 90 semester credits beyond the baccalaureate degree
- ◆ Maintenance of at least a 3.0 GPA for all classes completed as a graduate student.

Language Requirements

The University of North Dakota partners with ELS Educational Services to provide conditional admission for students who are academically qualified, but who do not meet our English Language proficiency requirements at the time of application to the university. We accept proof of completion of ELS Language Center's intensive English for Academic Purposes Level 112 as satisfying the requirements for English proficiency for degree programs at the undergraduate as well as graduate programs in the Department of Petroleum Engineering

Students who have met the university's academic requirements, but have not yet satisfied the English requirement, may apply for conditional admission based upon eventual completion of the required ELS Language Centers level. To learn

- ◆ Scholarly Tools: Proficiency in mathematics demonstrated by completing nine approved credits of mathematics intensive coursework (equivalent to UND 400-level or higher courses) with a grade of B or better which must include at least one course in numerical analysis. Scholarly tools courses taken for graduate credit after a student has enrolled in a graduate program at UND may be counted to fulfill requirements listed in Item 5 below.
- ◆ A maximum of 30 credit hours can be transferred from a master's program.
- ◆ A minimum of 30 credit hours must be doctoral research and dissertation.
- ◆ Exactly 3 credit hours of the PE Graduate Seminar must be taken.
- ◆ A minimum of 39 credit hours of coursework are required (up to 21 credit hours of coursework may be transferred from a master's program in fulfilling this requirement subject to the credit transfer limits described in the general section of this graduate catalog). The coursework shall include a minimum of 27 credit hours of Petroleum Engineering (or relevance courses with the consent of advisor) coursework selected from the approved list of courses. Equivalent graduate level coursework may be transferred from a master's program.
- ◆ Successful completion of a qualifying examination, taken no earlier than the end of their first year in residence and no later than the end of their second year of residence. To see the details of the qualifying examination please refer to the UND website or program catalogue.

Residence Requirements

Within the first two years of graduate work at UND, at least two consecutive semesters must be completed in residence. During residency, a student must be registered for at least nine credits in a semester, or be a graduate research or teaching assistant taking the appropriate credits to qualify as a full-time student. The remainder of the credits required for a degree can be completed in a manner to accommodate the student's fiscal, family, job related, and other constraints with the consent of the student's adviser. The program of study must be completed within the seven-year period normally allowed for graduate programs. Under special circumstances, the student in conjunction with his/her advisory committee and the Petroleum Engineering Graduate Committee, can petition the Dean of the Graduate School for variances in this policy.