

The Mewbourne School of Petroleum and Geological Engineering

**2010-2011
Graduate Student Handbook**

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Welcome to the Mewbourne School of Petroleum and Geological Engineering!

The Departmental Office, located in the southwest corner of Sarkeys Energy Center, Room T301 (SEC T301), is open Monday through Friday from 8:00 A.M. to 5:00 P.M. The faculty and staff are here to assist students as they work toward their degrees. If a faculty or staff member is unavailable, information may be left in the appropriate mailbox located in SEC T305 (please ask the front office staff for assistance). New students are especially encouraged to introduce themselves to Dr. Yucel Akkutlu, Graduate Liaison — Petroleum & Geological Engineering, Dr. Suresh Sharma, Director, — Natural Gas Engineering and Management Program and to Shalli Young, the Graduate Programs Coordinator.

Graduate Liaisons:

The Petroleum & Geological Engineering Graduate Liaison, Professor Yucel Akkutlu, may be reached at 325-8141 or through the MPGE main office at 325-2921. His office is located in SEC, Room T311.

The Natural Gas Engineering and Management Program Director, Dr. Suresh Sharma, may be reached at 325-6819 or through the MPGE main office at 325-2921. His office is located in SEC, Room T211.

Graduate Programs Coordinator:

Shalli Young, the Graduate Programs Coordinator and Assistant to the Graduate Liaison, may be reached at 325-6821 or through the MPGE main office at 325-2921. Her office is located in SEC, Room T301. **Please notify the Graduate Programs Coordinator of any address, phone number or email address changes** to ensure that important information is properly distributed. Additionally, students are encouraged to check their OU email and mail folders daily for newly distributed information, messages and other mail.

MPGE Faculty and Staff:
Instructional Faculty

Dr. Younane Abousleiman

Dr. Ramadan Ahmed

Dr. Yucel Akkutlu

Dr. Jeff Callard

Dr. Faruk Civan

Dr. Deepak Devegowda
Graduate Liaison

Dr. Samuel Osisanya

Dr. Maysam Pournik

Dr. Chandra Rai,
Director

Dr. Jean-Claude Roegiers

Dr. Subhash Shah

Dr. Suresh Sharma,
**Director and Graduate Liaison to
the Natural Gas Program**

Dr. Ben Shiau

Dr. Richard Sigal

Dr. Carl Sondergeld

Mr. Bruce Tate
Drilling Simulator Instructor

Dr. Djebbar Tiab

Sonya Grant
Assistant to the Director

Francey Freeman
Undergraduate Student Coordinator

Shalli Young
Graduate Programs Coordinator

Mike Shaw
Research and Design Technologist

Michael Miller
Staff Assistant II

Grace Tsai
MPGE Website Developer

Assignment of Offices:

The Assistant to the Director and the Graduate Programs Coordinator assign offices on a semester basis. Students do not necessarily remain in the same office in subsequent semesters. Any questions regarding this policy should be directed to the student's supervisor. Only graduate students holding an assistantship will be assigned an office.

Keys:

All keys must be requested from the front desk. Each student requesting keys will be provided with a *History of Key Issuance* form that must be completed before the key(s) will be issued. Each key request will be processed as soon as possible; however, it may take several days to issue a key due to required signatures and limited Lock Shop hours. Please plan ahead and be patient. When the keys arrive, the student will be notified via email or by a memo in their mail folder.

If keys are lost, immediately notify the Departmental Coordinator or the Graduate Programs Coordinator!

Audio-Visual Equipment:

Students requiring a slide projector or box light/proxima for defense presentations may check one out from the front desk in SEC T301.

English Proficiency Examination:

International graduate assistants for whom English is a second language must demonstrate oral and written English proficiency beyond the TOEFL before they can be awarded assistantships involving any interaction in a teaching capacity. Proficiency can be demonstrated by passing the examinations administered by The English Assessment Program Office in the Graduate College (BH-210). Before registering for the oral and/or written English Proficiency Examination, the student must pay the appropriate fee at the Bursar's Office. All new Graduate Teaching Assistants are now required to complete the All-Teaching Assistant Training Program. This should have taken place prior to the first day of class. If this requirement applies to you and you have not completed the All-Teaching Assistant Training Program, please see the Graduate Programs Coordinator in SEC, T301 immediately.

All new MPGE international students requesting assistantships are encouraged to pass the proficiency examinations since an assistantship appointment may depend upon English proficiency certification.

Laboratory Equipment:

No piece of equipment is to be moved from a lab without the consent of the teaching/research assistant or faculty member responsible for the lab. If neither is available, Mike Shaw, the Research & Design Technologist (SEC C112) should be consulted. All equipment removed from a lab must be checked out on the log in the appropriate lab, which may be found on the clipboard by the entrance of each laboratory.

Mail/Messages:

The mail folders for graduate students are located in the MPGE workroom (SEC T305). **Personal mail should be addressed to the student's home.** Messages and other information will be placed in the mail folders. Mail folders should be checked daily since time sensitive materials are placed in them frequently. Notices of interest to graduate students that are not sent individually will be posted on the graduate student bulletin board located on the second floor, "T" corridor, (between corridors A & B).

Messages may also be sent through email. Please check email often as it may have a specific deadline. **NOTE: It is the policy of Graduate College and this office to send email messages to the student's OU email address. No other email address will be used.**

Photocopying/Printer Paper

Students are encouraged to use professional copying services for the purpose of making personal copies. Only graduate student assistants may use the copy equipment and all copies must be at the request of the student's supervisor.

Reimbursements

In the event that a student needs to be reimbursed for an expense, the student must retain all original receipts. Students **must** have authorization from either the Assistant to the Director or the Financial Associate, prior to making any purchase for which a reimbursement will be requested. If you have any questions regarding this policy, please see the Assistant to the Director.

Safety/Hazardous Materials

Some labs require the use of hazardous materials. All handling and purchasing of hazardous materials must be coordinated through the Research & Design Technologist, Mike Shaw (C112). There is a first-aid kit in each laboratory for minor incidents.

Because safety programs only work if everyone in the department cooperates, each student, faculty and staff member is encouraged to look for ways to improve the working environment by submitting safety suggestions. To make a suggestion, obtain a MPGE Safety Improvement Program (SIP) form from the MPGE main office. Complete the form and leave it at the front desk.

Smoking Policy

Smoking is not allowed in any University building, including labs and private offices. These areas are the exception:

- Any "smoking allowed" housing or residence facility owned by the University
- Space leased from others; and
- Outdoor areas unless specifically designated as non-smoking areas

Telephone/Fax

Students are not authorized to use department telephones and fax for personal use. If you have an emergency situation requiring use of the telephone or fax, please see the Assistant to the Director, or, if she is not available, the MPGE staff in SEC T301.

Travel

Any student traveling on official University business at the request of an MPGE professor **must first obtain** a *Travel Authorization Form* from the Financial Associate or Departmental Coordinator (T301). If the travel is approved, each student will receive an expense worksheet that must be completed upon return. **Students may be reimbursed for authorized expenses only if the original receipts are attached to the expense worksheet.**

Typing

Students are responsible for their own typing.

Petition(s)

All petitions must be addressed to the Graduate Liaison. The Graduate Liaison may at his discretion approve or deny the petition. If denied, the student may then petition the Director of the School, who will bring the petition to the faculty meeting for discussion.

Parking

Parking permits must be obtained from the Parking and Transit Office, Robertson Hall.

GENERAL ANNOUNCEMENTS

1. All students are **strongly urged** to visit <http://gradweb.ou.edu> and familiarize themselves about Graduate College requirements and deadlines.
2. **It is highly recommended that first semester Master's students choose their thesis advisor and organize a thesis committee before the end of the first semester.** The Graduate Programs Coordinator must be provided with the names of the committee chairman and committee members to be placed in the student's official file.
3. It is **required of** incoming Doctoral students that they choose a committee chairman, file a report of the Advisory Conference, and schedule the Doctoral Qualifying Examination before the end of the first semester of enrollment. Any questions should be directed to the Graduate Liaison.
4. It is the responsibility of the student to give a copy of any and all documents sent to the Graduate College regarding the student's master's and doctoral program to the Graduate Programs Coordinator to be placed in the student's permanent file.

Students Expecting To Graduate This Semester

These students should make themselves aware of Graduate College deadlines for filing forms applicable to their degree programs. (listed at <http://gradweb.ou.edu>)

Limitations on Transfer Credit Applied Toward the Doctoral Degree

The number of transfer hours accepted for each student is determined on an individual basis at the advisory conference. However, **under no circumstances** will more than 44 transfer credit hours be applied toward a doctoral degree.

Student Admitted Conditionally

These students are required to satisfy the terms of conditional admission within the first academic semester of enrollment.

Transfer Credit

Graduate students wanting to take a course at another university, while in a degree seeking program at OU, **must get prior approval** from the Liaison by petition and approved by the Dean of Graduate College.

CURRENT REQUIREMENTS FOR MASTER'S OF SCIENCE DEGREE IN PETROLEUM ENGINEERING

I. THESIS OPTION (30 Credit Hours)

- (A) 9 Credit Hours of Petroleum Engineering Core Courses
 - PE 5353 – Advanced Drilling Engineering*
 - PE 5990 – Advanced Production Engineering*
 - PE 6573 – Advanced Reservoir Engineering*

- (B) 3 Credit Hours of Applied Mathematics
Complete one of the following courses or other approved applied math courses:
 - MATH 4163 – Introduction to Partial Differential Equations*
 - PE 5563 – Mathematical Simulation Models*
 - PE 5713 – Introduction to Geostatistics*
 - PE 5990 – Petroleum Inverse Problems*

- (C) 12 Credit Hours of approved electives including a maximum of 3 hours of special studies

- (D) 6 Credit Hours of *PE 5980 - Research for Master's Thesis*

- (E) Technical presentation at Graduate Seminar or a professional society meeting, or publication of a paper on the thesis topic.

II. NON-THESIS OPTION (36 Credit Hours)

- (A) Same as for Thesis Option above
- (B) Same as for Thesis Option above plus *MATH 4753 – Applied Statistical Methods*
- (C) 24 Credit Hours of approved electives including a maximum of 3 hours of special studies
- (D) Comprehensive Exam administered by the student's Graduate Committee
- (E) Not applicable

Students may apply only 3 credit hours of S/U graded courses (excluding thesis) toward a master's degree.

REQUIREMENTS FOR MASTER'S OF SCIENCE DEGREE IN GEOLOGICAL ENGINEERING

I. THESIS OPTION (30 Credit Hours)

- (A) 6 Credit Hours of PE/GE Courses
Complete any two courses from the following list:
 - GE 5143 - Fluid Flow in Porous Media*
 - GE 5243 - Introduction to Rock Mechanics*
 - GE 6263 - Advanced Rock Mechanics I*

- (B) 3 Credit Hours of Applied Mathematics
Complete one of the following courses or other approved applied math courses:
 - MATH 4163 - Introduction to Partial Differential Equations.*
 - ENGR 5723 - Engineering Analysis for Digital Computers*
 - PE 5563 - Math Simulation Models*
 - AME 5763 - Finite Element Methods*

- (C) 2 Credit Hours, or 1 Credit Hour each, of either of the following courses:
 - PE 5971 - Graduate Seminar*
 - GE 5990 - Special Studies*

- (D) 4 Credit Hours of *GE 5980 - Research for Master's Thesis*

- (E) 15 Credit Hours of approved electives with at least 9 credit hours in PGE

II. NON-THESIS OPTION (36 Credit Hours)

- (A) Same as for Thesis Option above
- (B) Same as for Thesis Option above
- (C) Same as for Thesis Option above
- (D) 22 Credit Hours of approved electives with at least 15 Credit Hours in PGE
- (E) Comprehensive Exam administered by the student's Graduate Committee

Students may apply only 3 credit hours of S/U graded courses (excluding thesis) toward a master's degree.

REQUIREMENTS FOR MASTER'S OF SCIENCE DEGREE IN NATURAL GAS ENGINEERING & MANAGEMENT

I. THESIS OPTION (30 Credit Hours)

- (A) 18 Credit Hours of Required Courses:
 - PE 5603 – Introduction to Natural Gas Engineering and Management*
 - PE 5613 – Natural Gas Engineering*
 - PE 5623 – Natural Gas Processing*
 - ChE 5643 – Gas Utilization*
 - FIN 5322 – Derivatives Secur/Mkts*
 - FIN 5332 – Risk Management and Financial Engr.*
 - One other 2-credit finance course approved by Advisor
- (B) 6 Credit Hours of approved electives
- (C) 6 Credit Hours of *GE 5980 - Research for Master's Thesis*

Note: Deficiency courses do not count toward the 30 hours required for the degree. Electives must consist of a rational sequence approved by your advisor.

II. NON-THESIS OPTION (36 Credit Hours)

- (A) Same as for Thesis Option above
- (B) 18 Credit Hours of approved electives
- (C) Comprehensive Project Presentation and Comprehensive Exam

Note: Deficiency courses do not count toward the 36 hours. The comprehensive project is required, but does not count toward the 36 hours required for the degree. Electives must consist of a rational sequence approved by your advisor.

THESIS PROGRAM FOR MASTER'S CANDIDATES

No later than the semester in which you plan to start your thesis (check Graduate College deadline date), select a thesis topic in conjunction with your advisor. When completing your Candidacy Form you also must complete the *'Application for Approval of the Master's Thesis Topic and Committee Approval Form.'* This is on the Graduate College website under Policies and Procedures – Thesis Packet. Have it signed by all members of your thesis committee and the Graduate Liaison (the members of your committee must be members of the Graduate Faculty). This form must be turned in with your Candidacy Form.

NOTE: If any change in the membership of the thesis committee becomes necessary, a new 'Application for Approval of the Master's Thesis Topic and Committee Approval Form' must be completed – the member being replaced must state he/she agrees to go off the committee and sign (anywhere on the form – preferably the back) and the new member will sign in with the members. If there is a change, this form must be re-filed with the Graduate College at least 14-days prior to the defense.

Following the **initial** enrollment in 5980 (Research for Master's Thesis), which must be for a minimum of **two (2) hours**, each graduate student **must maintain continuous enrollment during each regular semester until requirements for the degree are completed or candidacy is discontinued.** The continuous enrollment rule does not apply to summer sessions unless a student is actively working on a thesis, seeking committee advice, wishes to utilize University facilities, or will graduate at the end of the summer session, or enrolled in a course.

Make sure you check deadline dates when you must submit an *Admission to Candidacy form* to the Graduate College Office. Only those courses needed to complete the **Program of Graduate Work** should be listed. (If additional courses are listed, they will be considered as part of the degree program.) Any change (addition/deletion) on the **Program of Graduate Work** must be submitted to the Graduate College **in writing** and signed by the Graduate Liaison in the student's department.

The **student** is **solely** responsible for contacting the Graduate Liaison and requesting that the addition/deletion to the program be authorized and forwarded to the Graduate College for approval. Failure to make the appropriate addition/deletion could delay a student's graduation.

All students graduating from the University of Oklahoma must fill out an *Application for Graduation form* and pay all fees and tuition charges before their degree can be officially conferred and a diploma issued. Application for Graduation is not included in the "Thesis/Dissertation Information" on the Graduate College website. It may be obtained from our staff or Graduate College. The candidate must also pay the cap and gown fee if going through the ceremony. Application deadlines are: fall - November 1; spring - March 1; summer - July 1.

Authority for Final Examination

The student is responsible for allowing every member of the examining committee ample time to read the thesis before the examination. Once the thesis is approved and a date established for the defense, the student must present a copy of the completed thesis (a **final typed** draft will be acceptable) to the Graduate College for review. The thesis must be presented at least ten (10) days before the beginning of the scheduled final examination period (five (5) days in the summer). The exact beginning date will be indicated in the front of the *Class Schedule Bulletin* for each semester. An *Authority for Final Examination* will be issued at

this time provided that an approved *Admission to Candidacy form* and *Application for Approval of the Master's Thesis Topic and Committee Approval Form* are on file.

Only one attempt is afforded the candidate in defending the thesis.

Within seventy-two (72) hours after the Final Examination/Thesis Defense, the chair of the committee will report its decision to the Graduate Dean. A unanimous vote at the defense of the thesis or final examination is expected; however, some dissenting reports are received. If one member dissents, the dissent is recognized as a minority report. If the committee consists of more than three members and two dissent, the Graduate Dean investigates and makes the final decision. If more than two members vote unsatisfactory the defense is judged to be a failure.

Depositing Thesis in Library

In addition to returning the results of the *Final Examination (Authority Form)*, the student must deliver **unbound, three original-signed final copies** of the thesis (on 100%, watermarked cotton paper) to the Graduate College. Once a final degree check is accomplished, the student will then be issued the *Application for Approval of the Master's Thesis Topic and Committee Approval Form* that will accompany the three copies of the thesis to Bizzell Library (Acquisitions, lower level 2). The Acquisitions Department is open from 8:00 AM - 4:30 PM Monday - Friday.

Once the thesis is checked for deposit and the library representative signs the Thesis Approval form, the student **must** return the signed form to the Graduate College.

NOTE: A student must deposit the three final copies of the thesis in the library within sixty (60) days following successful defense of the thesis. If this is not done, the results of the first defense will be set aside and the student must present a new reading copy of the thesis, which has received preliminary approval of the major professor, to the Graduate College. When the thesis committee has accepted this new reading copy, the student can then enroll in 2 hrs. of thesis research and schedule the Thesis Defense. If all requirements for depositing the thesis have not been completed by the semester deadline, you will have to enroll for the next semester.

Deposit in Department

It is the responsibility of the student to provide the MPGE Department with one bound copy of the thesis for the Departmental Library; and an electronic copy (pdf format). **There are no exceptions to this rule.** Whenever possible, the bound thesis copy should be turned in to the Graduate Programs Coordinator at the same time the student turns in keys.

All requirements for graduation must be completed and appropriate paperwork on file in the Graduate College by the deadlines posted. This includes "T" grade changes. If **all** requirements are not completed by this date, graduation will be delayed. If you have any further questions, or need assistance, please contact the Graduate College, University of Oklahoma, 731 Elm Ave, Robertson Hall-Room 100, Norman, OK 73019, (405) 325-3811 or the department Graduate Liaison.

NON-THESIS PROGRAM FOR MASTERS CANDIDATES

Admission to Candidacy

A student who has done satisfactory graduate work and has maintained an overall grade point average of at least 3.00 on all resident graduate level courses and on all resident credit attempted may normally be admitted to candidacy for a master's degree as soon as the student has enrolled in sufficient hours for the degree. Only then can the student initiate the steps to schedule the comprehensive examination, and/or the thesis defense. **Make sure you check the deadline dates.**

Students who do not hold the master's degree in the same field, but who have passed the general examination for the doctoral degree, may be admitted to candidacy and awarded the appropriate master's degree provided they meet the following conditions:

1. Make a formal application for the master's degree
2. Meet all department/school requirements
3. Secure the recommendation of the major department/school

Graduate students working for a doctoral degree can **not** apply for a master's degree based on the passage of the General Examination **if** a thesis is required for all master's degrees in that program unit; in other words, those departments who do not have a non-thesis option master's degree. The Graduate College normally does not grant an additional master's degree in the same field from which an individual already holds a master's degree.

To apply for admission, a student must complete the Admission to Candidacy form that is provided by the Graduate College. The Graduate Liaison must sign the form to indicate approval of the course of study. The completed form should be returned to the Graduate College by the deadline given. At this time, a student will be given information for master's candidates-thesis programs and instructions-thesis or information for master's candidates-non-thesis programs.

Comprehensive Examination

A comprehensive examination is one of the requirements of a non-thesis program. The examination may either be oral or written or a combination of the two. It should cover all work offered for the degree (fields, not courses). The examining committee shall consist of at least three persons. All members of the committee must participate in the examination. **When the examination is scheduled, the Graduate College will issue the Authority for Comprehensive/Final Examination to the student.** The examination may not be held during the final examination period or when a suitable committee can not be assembled.

The back of the *Authority for Comprehensive/Final Examination form* is the Report on Comprehensive/Final Examination that is used to report the results of the comprehensive examination. All members of the committee must participate in the examination. It must be completed and signed by all the committee members.

REQUIREMENTS FOR THE DOCTORAL DEGREE

General Requirements for the Doctoral Degree

The doctoral applicant shall satisfy all requirements for the Ph.D. degree in engineering, including **ninety post-baccalaureate** credit hours of course work of which the dissertation is a part. Each candidate must meet the general requirements as specified in the Bulletin of the Graduate College, as well as all requirements as specified in the General Requirements for the Master's Degree in Petroleum & Geological Engineering.

A student should normally expect to spend the equivalent of three full academic years beyond the master's degree in study for the doctorate. As a general rule, either his/her bachelor's degree or master's degree (or both) will be in PE or GE. All such hours may, on recommendation of the student's Advisory Conference, be applied to his/her doctoral program. Exceptional applicants who have bachelor and master degrees in other engineering and science fields may be admitted to the MPGE Ph.D. Program. Course work deficiencies may be necessary (such as geology), depending upon the applicant's background. **Course work deficiencies will be determined by the Graduate Liaison and will not be counted as part of the student's Ph.D. program.**

A minimum of 36 and a maximum of 48 credit hours are allowed for dissertation work. Prior to graduation, the applicant must publish or have in press one refereed paper and make a presentation at a professional society meeting or give a department seminar.

Courses of study are individually structured to capitalize upon each student's background and to meet his/her specific needs and research interests.

Candidates for the doctoral degree in MPGE must satisfactorily complete the Qualifying Exam (if not waived) and General Examination. Graduate students may pursue the Ph.D. without having to complete the Master's Degree. **The student can request the Master's Degree once s/he passes the General Exam.**

Transfer Credit for Doctoral Programs

In determining the acceptability of transfer credit that may be applied to doctoral degree requirements, MPGE recognizes that master's degree programs range from 30 to 36 semester hours. Where applicable, a student may transfer up to 36 semester hours of master's degree program (or the equivalent) toward a doctoral degree, provided that all transfer credits were earned at an accredited institution, carried a grade of *A*, *B* or *S* (Satisfactory), and were approved by the Department and the Dean of the Graduate College.

A student may transfer up to 12 semester hours of post master's course work (but not more than a total of 44 semester hours) toward a doctoral degree program, provided that such transfer credit:

1. Represents valid graduate credit earned in graduate level courses at an accredited university;
2. Carries a grade of *A*, *B* or *S* (Satisfactory);
3. Is not more than five years old at the time of admission to the degree program;
4. Is applicable to the degree program; and
5. Is approved by the Graduate Liaison of MPGE and the Dean of the Graduate College.

In special cases, credit more than five years old may be transferred if recommended by the student's Doctoral Advisory Committee and approved by the Dean of the Graduate College. MPGE uses the results of the Ph.D. Qualifying Examination to determine the student's current knowledge and competency.

Transfer credit is considered neutral in the computation of the University of Oklahoma grade point average for the purpose of determining continued admissibility and graduation.

3000 and 4000 Level Courses

PE students may apply no more than a total of 12 credit hours of 4000 level courses (excluding PE courses) toward the 90 credit hours required for Ph.D. degree. GE students may apply up to 15 credit hours of 4000 level courses (including at least 6 credit hours of PE) toward their course work. No 3000 level courses may be applied toward any MPGE graduate degree.

A student who has special course work needs which cannot be met within the limitations listed above may petition the Graduate Dean for an exception to the limitations. The petition must be submitted before the student completes 12 hours of graduate work in his/her program. It must contain a detailed justification for requesting the exception and must list all courses to be applied toward the graduate program. The Graduate Dean will make his/her decision based on the merits of the petition. This decision will not be considered as precedence for future petitions requesting an exception to the number of 4000 level courses that can be applied toward a graduate degree.

S/U Graded Courses

No more than 4 credit hours of the post-master course work for a doctoral degree (excluding dissertation) may be S/U graded courses.

Advisory Conference

The applicant shall request an Advisory Conference during his/her **first semester of enrollment**. The Advisory Conference will establish the applicant's plan of study. The membership of the Advisory Conference Committee will be selected with the intent that this Committee will become the Doctoral Advisory Committee for the student; or, where it is deemed desirable, the Advisory Conference Committee may suggest alternate faculty members for the Doctoral Advisory Committee. The *Report of the Advisory Conference* (see attached) will be forwarded to the Dean of the Graduate College via the Graduate Liaison.

The Doctoral Advisory Committee for Petroleum and Geological Engineering students shall consist of four members of MPGE at OU, and one other Graduate Faculty member at OU (other than MPGE).

A student who has enrolled in a master's degree program and is interested and has received encouragement from his/her faculty advisor to continue on in a doctoral program should apply for an Advisory Conference as he/she nears completion of the master's degree program. The student should have an Advisory Conference before enrolling for course work beyond the master's degree requirements since such course work must be approved by the Advisory Conference Committee. Enrollment without proper counseling and advising might require the student to take more course work than necessary for the intended doctoral program.

ADVISORY CONFERENCE CHECKLIST

1. The Advisory Conference **must** be held during the student's first semester of enrollment.
2. The Mewbourne School of Petroleum and Geological Engineering (MPGE) requires a **minimum** of 90 credit hours for a Ph.D. degree which is composed of: 1) 30 credit hours for Master's degree; 2) at least 12 credit hours of post-Master's coursework; and 3) 36 to 48 credit hours for dissertation research.
3. The student must have a Master's degree in Petroleum Engineering, Geological Engineering, or the equivalent, and/or must have satisfied all deficiencies. Exception to this rule is if the student selected to pursue the PhD without having completed the MS degree.
4. Prior to graduation, the student must publish or have in press one refereed paper pertaining to the dissertation research, and make presentation at a professional society meeting or give a department seminar.
5. The number of transfer hours accepted for each student is determined on an individual basis at the advisory conference. However, under no circumstances will more than 44 transfer credit hours be applied toward a doctoral degree.
6. A student may apply no more than 12 credit hours of 4000-level graduate coursework toward the 90 credit hours. 3000-level courses or lower are not acceptable.
7. A student with a Master's degree in Petroleum Engineering, Geological Engineering, or the equivalent is **required** to take the Ph.D. Qualifying Examination during the first or second semester of the Ph.D. program. A student is required to take the General Examination after completing all coursework. The examination must be completed within the same semester in which the written report was turned in to the Examining Committee.
8. The student should complete the "Report of the Advisory Conference" form in consultation with the research advisor (chairman of Doctoral Committee) who will assist in selecting the committee.
9. The Mewbourne School of Petroleum and Geological Engineering requires that at least four members of the Doctoral Committee (including the chairman) must be from MPGE.
10. Subsequent to the Conference, the Report will be amended as required and signed by all the members of the Committee. The Graduate Liaison will review and approve the report prior to it being sent to the Graduate College.
11. It is the responsibility of the student to give a copy of any and all documents sent to the Graduate College regarding the student's doctoral program to the Graduate Programs Coordinator to be placed in the student's permanent file.

Ph.D. Qualifying Examination:

The Qualifying Examination is a comprehensive examination over the student's major field of study. The intent of the examination is to determine whether the student has the necessary background to undertake a doctoral program; and, further, to reveal such deficiencies as may exist in his/her academic preparation for the doctoral program.

Rules and Procedures for the Ph.D. Qualifying Exam

A. Rules

1. The examination will be closed book and held during the week before Labor Day of each year. If the need arises, either a partial or complete examination may be offered in January.
2. Incoming PhD candidates need to take the examination prior to completion of third semester at OU.
3. The examination will consist of the four sections; two sections from Category 1 and two from either Category 2 or Category 3 depending on a student's major.
4. Student in consultation with his/her Advisory Committee will select two sections from Category 1 and two from either Category 2 or 3 on which he/she will be tested.
5. Student's Advisor will inform the Graduate Liaison of the selected sections.
6. Graduate Liaison will provide syllabus for the selected sections to the candidate.
7. The total time for the test will be eight hours; two hours for each section.
8. Each question will be graded on a 0 - 10 scale.
9. The criteria for passing the Ph.D. qualifying exam are:
 - a. If a student achieves a score greater than 6 in each of the four sections, the result is Unconditional Pass.
 - b. If a student receives an average score that is greater than or equal to 6 over all four sections but less than 6 in one or two sections, the result is Remedial Pass. The Graduate Committee proposes the remedial action for Faculty approval.
 - c. If neither of the above two conditions are met, the result is Unconditional Fail. The student must repeat the examination.

Attachment 1: List of Topics for the PhD Qualifying Exam

Category 1: Common to both PE and GE students

- Fluid and Solid Mechanics
- Thermodynamics
- Petroleum Geology, Structural Geology, and Stratigraphy
- Applied Mathematics

Category 2: For Petroleum Engineering students

- Reservoir Rock and Fluid Properties
- Reservoir Evaluation and Engineering
- Drilling and Completion
- Production Engineering

Category 3: For Geological Engineering students

- Exploration Geophysics/Signal Processing
- Geomechanics/Poromechanics
- Reservoir Rock and Fluid Properties
- Geostatistics

General Examination

The candidate must initiate his/her General Examination within the period set at the time of the Advisory Conference. As the candidate nears completion of this course work, he/she should prepare for the General Examination. This examination must be completed before the Graduate College will formally admit an applicant to candidacy for the Doctoral Degree and, in every case, at least seven months before the degree is to be conferred.

The candidate must apply for the General Examination at least one month before it is to be held. The *Graduate College Application for the General Examination* for the doctoral degree (form provided by the Graduate College) shall be completed by the applicant in quadruplicate with the assistance of his/her Chairman, signed by the applicant as well as all members of his/her Doctoral Advisory Committee and submitted to the Graduate College.

The Doctoral Advisory Committee shall be responsible for preparing and conducting the General Examination which will consist of an oral defense of a written report or proposal which has been prepared by the student. The report or proposal must be either an original analysis and solution to a significant Petroleum/Geological engineering problem in some aspect of the student's field of specialization, or an in-depth proposal for research in a field of current scientific or technological importance.

The topic for report/proposal shall be provided to the candidate by the Doctoral Advisory committee Chairperson after obtaining input and written approval from other members of the Advisory committee.

The report of this examination shall be submitted to the Graduate College via the Chairman of the Examining Committee. One copy of the candidate's report plus any additional papers from the examination shall be filed with the Graduate Liaison.

If the decision of the majority of the Committee is that the student's performance is marginal but not failing, and the Examining Committee wishes the student to do further reading, course work, investigations, etc., the results of the examination will be held in abeyance by the Committee and sent to the Graduate Dean for approval. A reasonable time limit for this should be established (one full semester seems sufficient to permit the student to complete additional courses, etc.). The Graduate College must receive a report from the Committee at the conclusion of this time frame.

Only **one** re-examination is permitted.

Instructions for Preparing the General Examination Report

The applicant is assigned the task of completing an analysis and solution of a specified engineering program, and submitting an engineering report presenting his/her findings along with any specific recommendations which may have been requested. Such a report should provide detailed supporting information for his/her results. This may include, along with other sections, a brief review of pertinent literature, an analysis of the theory and engineering practices involved, a consideration of possible solutions, the justification for detailed calculations of his/her solution, and the presentation of the conclusions and recommendations.

The report is to be presented either in thesis form or in good technical report form. All figures and drawings are to represent good engineering practice. Where excessive calculations or tabular data are involved these should be included in an appendix. In addition, the original calculations are to be submitted as a separate appendix.

It is paramount that this report represent the original work of the student. All published literature and all other sources of information which are generally available to the public may be utilized. Unpublished proprietary information or classified information may not be used. Any special materials other than normally published literature which were obtained for use in this study must be submitted as appendices with the report.

The student should be prepared to defend his/her proposal in an oral examination before the Doctoral Advisory Committee. This oral examination may also include questions in all areas of the student's field of specialization.

The student is expected to devote about 100 hours to the preparation of this report. The period of the examination should not, and indeed must not, represent a time in which a student drops all other efforts. It is intended that an applicant should be able to complete this examination without significantly reducing his/her progress in the other areas of his/her graduate program.

Time Limit for Completion of Doctoral Degree

A doctoral candidate is normally expected to complete all the degree requirements within five years after having passed the General Examination. Extensions beyond one year require the approval of the Graduate Dean and MPGE's certification that the student's knowledge is current and appropriate to the degree to be awarded. The procedure to be used for this determination must be approved by the Graduate Dean.

Final Oral Examination

1. Dissertation Reading Copy

- a) The doctoral candidate should prepare and distribute reading copies of the dissertation to each doctoral committee member at least one month prior to the defense.
- b) At least five members of the committee must read and determine whether the dissertation demonstrates the student's ability to conduct original research and makes a significant contribution to the student's discipline.
- c) The committee may accept or reject the dissertation.
- d) If the committee rejects the dissertation, the student will have another opportunity to submit an acceptable dissertation to the committee.
- e) If the committee accepts the dissertation, it may require changes and corrections.
- f) When the reading copy has received preliminary approval by the major professor and the other members of the committee, it should be submitted to the Graduate College along with the completed Request for Authority for Defense of Dissertation.
- g) The reading copy should be submitted to the Graduate College at least two weeks prior to the defense. In addition, it should be submitted according to the deadlines printed in the front of the class schedule for each semester or summer session.
- h) The reading copy should be in an acceptable dissertation format and must include all figures and tables, numbered pages and a complete bibliography. It should not contain grammatical or spelling errors.
- i) Printed instructions for the preparation of the dissertation are available in the Graduate College and also are available on the World Wide Web at gradweb.ou.edu.
- j) The Graduate College will not review dissertation reading copies without the completed Request for Authority for Defense of Dissertation.
- k) The signature of the graduate liaison will not be interpreted as approval of the reading copy but will acknowledge that all academic unit requirements have been satisfied.

2. Dissertation Defense

A unanimous vote at the Defense of the Dissertation is expected. However, if dissenting votes are cast, the Graduate College will utilize the following procedure: if one member dissents, the dissent is recognized as a minority report; if two members dissent, the Graduate Dean investigates and his/her decision will be final; if more than two members vote **Unsatisfactory** (failure), the performance is judged to be a failure.

Only one attempt is granted the candidate in defending the dissertation. If the defense is determined to be unsatisfactory (failure), the decision is final and the defense cannot be repeated. Furthermore, the student will be automatically dropped from the rolls of the Graduate College and his/her candidacy for the doctoral degree will be automatically terminated. Nothing herein shall prohibit such a student from reapplying for admission to the Graduate College, and if re-admitted, pursuing a doctoral degree in some other major field so long as he/she satisfied all necessary requirements under the then applicable rules and regulations of the University of Oklahoma, its colleges and its departments.

3. Deposit of Dissertation in the University Library

Within 60 days following the Final Examination, the candidate shall deposit two 100% cotton copies and one electronic copy of the dissertation to the Graduate College and then to the Library. He/she shall also submit bound copies of his/her dissertation to the Graduate Liaison and to his/her major professor and an electronic copy (pdf format) to the Graduate Programs Coordinator.

Academic Appeals Procedure

A Graduate College Academic Appeals Board shall be appointed and given authority to hear all appeals involving the Qualifying Examination, Comprehensive Examinations, General Examinations, and other matters of controversy not specifically covered under the Student Code. Such an appeal must be filed in writing and given to the Graduate Dean within ninety days from the time of action from which the dispute arose. In accordance with Title 16, 1.2 of the Student Code, this Board is authorized to hear appeals involving theses and dissertations. A graduate student with a grievance should immediately contact the Graduate College to obtain more details on the appeal procedure.

Graduation

All students graduating from the University of Oklahoma must fill out an Application for Graduation form and pay all fee and tuition charges before their degree can be officially conferred and a diploma issued. Application for Graduation can be picked up at Graduate College or the department office. The candidate must also pay the cap and gown fee. Fee deadlines are: Fall - November 1; Spring - March 1; Summer - July 1. NOTE: There is no graduation fee. ALL Doctoral candidates must pay a \$54.00 microfilming fee.

ADVISORY CONFERENCE CHECKLIST

1. The Advisory Conference **must** be held during the student's first semester of enrollment.
2. The Mewbourne School of Petroleum and Geological Engineering (MPGE) requires a **minimum** of 90 credit hours for a Ph.D. degree which is composed of: 1) 30 credit hours for Master's degree; 2) 12 to 24 credit hours of post-Master's coursework; and 3) 36 to 48 credit hours for dissertation research.
3. The student must have a Master's degree in a science or engineering field, and/or must have satisfied all deficiencies. Exception to this rule is if the student selected to pursue the PhD without having completed the MS degree.
4. At least two-thirds of the post-Master's coursework, i.e. 24 out of 36 credit hours, must be selected from Petroleum and Geological Engineering courses.
5. The number of transfer hours accepted for each student is determined on an individual basis at the advisory conference. However, under no circumstances will more than 44 transfer credit hours be applied toward a doctoral degree.
6. A student may apply no more than 12 credit hours of 4000-level graduate coursework toward the 90 credit hours. 3000-level courses or lower are not acceptable.
7. A student with a Master's degree in Petroleum Engineering, Geological Engineering, or the equivalent is **required** to take the Ph.D. Qualifying Examination during the first or second semester of the Ph.D. program.
8. A student is required to take the General Examination after completing all coursework. The examination must be completed within the same semester in which the written report was turned in to the Examining Committee.
9. The student should complete the "Report of the Advisory Conference" form in consultation with the research advisor (chairman of Doctoral Committee) who will assist in selecting the committee.
10. The Mewbourne School of Petroleum and Geological Engineering require that at least four members of the Doctoral Committee (including the chairman) must be from MPGE.
11. Subsequent to the Conference, the Report will be amended as required and signed by all the members of the Committee. The Graduate Liaison will review and approve the report prior to it being sent to the Graduate College.
12. It is the responsibility of the student to give a copy of any and all documents sent to the Graduate College regarding the student's doctoral program to the Graduate Programs Coordinator to be placed in the student's permanent file.

GENERAL EXAMINATION CHECKLIST

1. The student must have completed majority of the coursework.
2. The student must complete the "*Graduate College Application for the General Examination*", obtain all required signatures, and submit the form to the Graduate College **at the beginning** of the semester or summer session. A copy of the completed application must also be provided to the Graduate Programs Coordinator to be placed in the student's permanent file.
3. After the student notifies the doctoral committee chairman that the application has been submitted to the Graduate College, the chairman will then solicit questions from the doctoral committee members and give it to the student.
4. Once the question is given, the student has 30 days to respond by submission of a written report. A copy of the written report must be provided to each member of the doctoral committee. The entire general examination process must be completed within the same semester or the student may have to reapply and choose a new question at the beginning of the following semester.
5. In order to satisfy the time frame given, the chairman or a designee will direct the Graduate Programs Coordinator to schedule the oral portion of the examination no sooner than two weeks and no later than four weeks after the written report is submitted.
6. Oral portions of general examinations are not to be scheduled during exam week or between semesters.
7. The doctoral committee chairman shall submit the report (final outcome only) of the examination to the Graduate College and Graduate Liaison within 72 hours after the oral portion of the general examination.

Any exceptions to these procedures must be brought to the faculty for review.

INSTRUCTIONS FOR SCHEDULING GENERAL EXAMINATIONS (ORAL PORTION)

1. Two weeks after the written portion of your general examination has been submitted, verify with the faculty member who supplied your question that your response is satisfactory.
2. Once the faculty member tells you that your written response is satisfactory, request a scheduling calendar from the Graduate Programs Coordinator.
3. After deciding which week you wish to hold the oral portion of your examination, write the dates on the scheduling calendar and take it to each of your committee members. As them to mark out, while you wait, the times they are **not** available.
4. When all of your committee members have marked the scheduling calendar, select a two hour time slot when everyone is available, i.e. no one has marked out that time slot. If there is no time when everyone is available, return to the Graduate Programs Coordinator for a new scheduling calendar and select a new time period. Repeat #2 and #3 until you have determined a time slot when everyone is available.
5. Circle the selected time and return the scheduling calendar to the Graduate Programs Coordinator. You are responsible for reserving a room in which to hold the General Examination. Some of the most commonly used rooms are the MPGE Conference Room, T310; the RMI Conference Room, P110; and the Plaza Level Conference Rooms A through C.
6. Once the room has been determined, the Graduate Programs Coordinator will issue a memo to you and your committee members confirming the date, time and place of the oral portion of your general examination.

CHECKLIST FOR THESIS/DISSERTATION

Preliminary Pages

1. The title of the thesis/dissertation should be concise and descriptive.
2. The Abstract should concisely describe the problem, methodology used, and results obtained.
3. There should be a Table of Contents with the same Chapter and Section terminology as in the body.
4. There should be a Nomenclature, listing all symbols used in alphabetical order, ordinary letters first, followed by Greek letters.
5. If there are any figures, there should be a List of Figures.
6. If there are any tables, there should be a List of Tables.

7. The preliminary pages should be numbered with lower-case Roman numerals.

Body

1. The first page of Chapter I is numbered as page 1.
2. Normally Chapter I consists of an Introduction and a survey of the literature on the subject.
3. The last chapter should list the conclusions and possibly suggestions for further research.

References and/or Bibliography

1. Following the last chapter, there should be a list of references. Note: all references must be actually referenced in either the body or the appendices. PGE students should use the format required by SPE.
2. Any general books or articles not specifically referenced may be listed in a Bibliography.

Appendices

Appendices are usually lettered A, B, C, etc., and may be used to list raw experimental data, detailed derivations, computer listings, etc. The purpose of the appendices is to avoid cluttering the body with too much detail.

Common Grammatical Pitfalls

1. In describing the findings of previous investigators, always use the past tense. Example: "Jones used", not "Jones uses".
2. The words "criteria", "data", "media", and "phenomena" are the plural forms of "criterion", "datum", "medium", and "phenomenon". Thus, say "data are gathered", not "data is gathered".
3. Do not use slang or slang spellings. Thus, use "although" instead of "though"; "through" instead of "thru".
4. Be especially careful to avoid **dangling participles**.
5. Small numbers should be spelled out when used in sentences. Example: say "ten specimens" instead of "10 specimens".
6. Refer to figures as follows; "Fig. 1" or "Figure 1", not "figure (1)". Likewise, refer to "Table 1".
7. Refer to equations as follows: "equation (1)" or "eq. (1)", or "Equation (1)" or "eq. (1)". If plural, write "Equations (1)" or "Eqs. (1)".
8. Avoid all use of the singular personal pronoun ("I"). Avoid excessive use of the plural personal pronoun ("we").
9. All drawings should have a figure number and title.

10. Be careful to use "principle" and "principal" correctly. Although there are physical principles, there are principal stresses.
11. Spell out feet (or ft.) and inches (or in.) rather than using 10'-6". In fact, most technical societies now require the use of SI units, with English in parentheses. Of course, this whole problem can be avoided by the use of dimensionless quantities.
12. Be consistent throughout in the format for reference citations and references. It is highly recommended that you use the format required by SPE.

INSTRUCTIONS FOR SCHEDULING THESIS/DISSERTATION DEFENSE

1. No sooner than two weeks after the date you turn in your written thesis/dissertation, verify with your chairman that your response is satisfactory.
2. Once your chairman tells you that your thesis/dissertation is satisfactory, request a scheduling calendar from the Graduate Programs Coordinator. (Graduate College as well as the MPGE department must have a **two** week notice prior to your defense).
3. After deciding which week you wish to hold your thesis/dissertation defense, write the dates on the scheduling calendar and take it to each of your committee members. Ask them to mark out, while you wait, the time when they are **not** available.
4. When all of your committee members have marked the scheduling calendar, select a two-hour time slot when everyone is available, i.e. no one has marked out that time slot. If there is no time when everyone is available, return to the Graduate Programs Coordinator for a new scheduling calendar and select a new time period. Repeat #2 and #3 until you have determined a time slot when everyone is available.
5. Circle the selected time and return the scheduling calendar to the Graduate Programs Coordinator. You are responsible for reserving a room in which to hold the General Examination. Some of the most commonly used rooms are the MPGE Conference Room, T310 and the Plaza Level Conference Rooms A through C.
6. Once the room has been determined, the Graduate Programs Coordinator will issue a memo to you and your committee members confirming the date, time and place of your thesis/dissertation defense.
7. You are responsible for getting all necessary signatures on your Thesis/Dissertation Signature Pages and seeing that all copies are in order and are in the Library on time. Also, remember you must provide the Graduate Programs Coordinator with a bound copy of your thesis/dissertation.

Useful Telephone Numbers

Admissions Office	325-2251
Affirmative Action Office	325-3546
Ambulance Service	360-1232
Athletic Department Ticket Office	325-2424
Bursar's Office	325-3121
Career Counseling Center	325-2911
Career Services	325-1974
CART	325-2278
Computing and Telecommunications	325-3287
Crisis Line	325-6963
Disability Services	325-3163
English Assessment Program	325-1838
Goddard Health Center	325-4611
Graduate Student Insurance	325-4611
Graduate Student Senate	325-4041
Graduate College	325-3811
Housing Programs	325-2511
Huston Huffman Center	325-3053
International Student Services	325-4006
Job Information Line	325-4343
Lloyd Noble Center Ticket Office	325-3838
Lost and Found:	
Department of Public Safety	325-2864
Oklahoma Memorial Union	325-2121
Minority Student Services	325-3163
Non-traditional Student Services	325-3163
Norman Fire Department	321-8696
Norman Police Department	321-1600
Norman Regional Hospital	307-1000
Office of Disabled Student Services	325-3163
Office of Financial Aid	325-4521
OU Police Department (business)	325-2864

OU Police Department (emergency) 911

Parking and Transportation	325-3311
Registrar	325-2252
Sexual Harassment Complaints	325-3546
Student Affairs	325-3161
Technology Information Center	325-INFO
Tutoring Service	325-6873
University Information	325-0311
University Book Exchange	325-3511
Veterans' Student Services	325-3163