

# ***THE UNIVERSITY OF NEW MEXICO***

**Department of  
Civil Engineering**



**MANUAL FOR  
GRADUATE STUDIES**

**2005 - 2006**

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Civil Engineering Teaching Faculty

**IMPORTANT NOTE**  
**Please check our web site frequently for updates**  
**to the information contained in this manual:**  
<http://www.unm.edu/~civil.>

## 1. INTRODUCTION

This booklet outlines the requirements and procedures for the Master of Science (M.S), Master's in Construction Management (MCM), and Doctor of Philosophy (Ph.D.) degrees in Civil Engineering and serves as a reference for graduate students.

The Department, the School of Engineering, and the University specify the requirements for the degrees. Students should carefully study the University of New Mexico Graduate Bulletin applicable at the time of their admission to become familiar with both general and specific requirements. University requirements are described on pages 55 - 81 of the 2005-2006 Catalog, School of Engineering requirements are on pages 377-382, and the Civil Engineering graduate degree requirements start on page 394.

The requirements and regulations in this manual are in effect at the time of printing. The Office of Graduate Studies and the CE Department may change requirements. Such changes will become effective at a time determined by the Department.

The student's degree requirements are fixed when the Program of Studies/Application for Candidacy Forms are completed and approved by the student's major advisor (M.S. or MCM) or Committee on Studies (Ph.D.), the Civil Engineering Director of Graduate Programs, and OGS.

This document summarizes most graduate degree requirements but does not necessarily specify all details of the official requirements that are maintained by the UNM Office of Graduate Studies. *It is the student's responsibility to be informed of and satisfy all requirements by keeping in close communication with the Coordinator of Program Advisement and the Director of CE Graduate Programs.*

## 2. ADMISSION

Application for graduate study at UNM is a "self-managed" process in which the applicant compiles the required materials and submits certain items to the Office of Graduate Studies or the Office of International Admissions and certain items to the department. Instructions and deadlines for the application process are available at the following web sites:

Domestic students: [http://www.unm.edu/grad/admissions/ogs\\_admissions.html](http://www.unm.edu/grad/admissions/ogs_admissions.html)

International students: [http://www.unm.edu/preview/na\\_intlgrad.htm](http://www.unm.edu/preview/na_intlgrad.htm)

The Director of Graduate Programs for the Department of Civil Engineering evaluates applicants to the Department and makes recommendations to the UNM Offices of Graduate Studies and International Admissions regarding admissions. Students with special circumstances such as marginal qualifications or unusual backgrounds can request that their applications be considered by the CE Department Graduate Committee. The CE Department does not offer "provisional", "probationary", or "conditional" admissions.

Admission is based on the student's previous academic performance, professional background and career objectives, Graduate Record Exam (GRE) General Test or Graduate Management Admission Test (GMAT) scores, English language skills, letters of recommendation, and compatibility between the applicant's interests and the Department's resources. Applicants must include a letter of intent summarizing their qualifications,

professional goals, and intended area of study. The letter may also include additional information relevant to the application.

The deadlines for application for admission to the graduate programs in the UNM Department of Civil Engineering are shown below.

Semester	Application Deadline	
	U.S. Students & Permanent Residents	International Students
Fall	July 15	March 1
Spring	November 10	August 1
Summer	April 29	January 1

The entrance requirements for new students are summarized below. Under some circumstances these requirements may be relaxed for applicants having significant relevant work experience or other exceptional credentials such as licensure as a professional engineer.

***Entrance Requirements – M.S. Program***

Grade Point Average (GPA): A minimum GPA of 3.0 (or equivalent) over the last two undergraduate years in science, math, and engineering courses.

GRE Exam Scores: A minimum combined score of 1000 on the verbal and quantitative sections is required.

Language Skills for International Students: International students must achieve a minimum score of 550 (written test) or 213 (computer test) on the Test of English as a Foreign Language (TOEFL) exam or a score of 7.0 on the International English Language Testing System (IELTS).

***Entrance Requirements – MCM Program***

Grade Point Average (GPA): An undergraduate baccalaureate degree with a minimum GPA of 3.0 (or equivalent) for courses in the major field of study over the last two undergraduate years.

Entrance Exam Scores:

GRE: A minimum combined score of 1000 on the verbal and quantitative sections is required  
OR

GMAT: A minimum score of 500 is required.

Language Skills for International Students: International students must achieve a minimum score of 550 (written test) or 213 (computer test) on the Test of English as a Foreign Language (TOEFL) exam or a score of 7.0 on the International English Language Testing System (IELTS).

***Entrance Requirements – Ph.D. Program***

Generally admission to the Ph.D. program requires that the applicant has earned an

appropriate M.S. degree and has demonstrated a high potential for research. The minimum entrance requirements for the M.S. program are also applicable, including GRE scores. Exceptional students may pursue a Ph.D. without first earning an M.S. This is accomplished by enrolling in the M.S. program first, then changing to a Ph.D. program after the student has demonstrated outstanding potential for graduate studies and research.

Admission to the Ph.D. program requires a match between the student's research interests and current departmental research activities.

### ***Preparatory Course Work for MS Students without an Undergraduate Civil Engineering Degree***

Students without an undergraduate degree in Civil Engineering can be admitted to the graduate program MS degree program. However, they may be required to take some undergraduate courses to prepare them for graduate work in the department. Generally, these students fall into one of two categories:

#### Students with a Degree in Another Field of Engineering

These students can be admitted directly to the program, provided they satisfy all other admissions criteria. However, they may need to take some undergraduate courses that are prerequisites for graduate courses in their field of study. This course sequence must be determined on an individual basis and will depend on the student's background and intended program of study. The preparatory course sequence will be selected in consultation with the CE faculty in the student's intended area of study. A member of that group must write a memo identifying the course sequence to the CE Department's Director of Graduate Programs that will be placed in the student's file. The preparatory course sequence will ultimately be listed on the student's Program of Studies which is filed with the Office of Graduate Studies.

#### Students without an Undergraduate Engineering Degree

Students without an undergraduate engineering degree can be admitted to the program but must take a sequence of undergraduate classes with a cumulative GPA of 3.0 and no grade below a "C". This sequence of classes includes the following:

- Math through ordinary differential equations (3 semesters of calculus: Math 162, 163, and 264) and ordinary differential equations (Math 316)
- Statics – CE 202
- Dynamics – ME 306  
Engineering Mechanics – CE 304, may be substituted for CE 202 and ME 306
- Mechanics of Materials – CE 302
- Fluid Mechanics – CE 331
- Soil Mechanics – CE 360

Students intending to study in an area where this sequence of preparatory courses is not appropriate may substitute one preparatory course in engineering for one of the above courses. Permission to do so must be obtained through consultation with the CE faculty in the student's intended area of study. A member of that group will write a memo identifying the sequence to the CE Department Director of Graduate Programs that will be placed in the student's file.

Students without an undergraduate engineering degree will not be considered for admission and should not apply to the program until the semester in which they are taking their last preparatory class(es). However, in extraordinary circumstances, the student can submit a petition to the CE Department Graduate Committee requesting consideration of his/her application for early admission.

### ***Preparatory Course Work for MCM Students without an Undergraduate baccalaureate degree in Civil Engineering, Construction Engineering, or Construction Management***

All MCM students will be required to have minimum competencies in Math, Statistics, Engineering Economics, and Construction Fundamentals. Students without a baccalaureate degree in Civil Engineering, Construction Engineering, or Construction Management can be admitted to the program after taking a sequence of undergraduate classes with a cumulative GPA of 3.0 and no grade below a "C". This sequence of classes includes the following:

- Math through Elements of Calculus, Math 180
- Statistics – Stat 245
- Engineering Economy – CE 350
- Construction Contracting – CE 372

Students without the required preparatory classes will not be considered for admission and should not apply to the program until the semester in which they are taking their last preparatory class(es). However, in extraordinary circumstances, the student can submit a petition to the CE Department Graduate Committee requesting consideration of his/her application for early admission.

## **3. INFORMATION PERTINENT TO ALL GRADUATE DEGREES**

### **Incomplete Grades**

The grade of "I" may be given if circumstances prevent the student from completing a course. The "I" automatically becomes "F" if not removed by the ending date of the next semester, or within the next four semesters if the student does not re-enroll.

### **Withdrawal from a Course**

A student may withdraw from a course during the first six weeks of the semester or the first three weeks of the summer session without approval or any assessment of progress. If withdrawal is after the sixth week of the semester, a grade of WP will be assigned if work is satisfactory, or a grade of WF if the work is not satisfactory. Withdrawal after the twelfth week requires completing a "yellow card" with the signature of the Associate Dean of the School of Engineering.

### **Courses taken in Non-Degree Status**

Twelve hours of credit taken in non-degree status may be applied toward a graduate degree. The 300-or 400 level courses taken in non-degree status to be later applied toward a graduate degree must be identified as being taken for graduate credit at the time of enrollment as outlined by UNM policy.

### **Taking Undergraduate Courses for Graduate Credit**

Students may wish to take certain upper division (300 and 400 level) undergraduate courses outside the Civil Engineering department as a graduate student and use them

in their graduate degree program. Those undergraduate courses marked with \*\* in front of the course number, such as \*\*Math 345 - Elements of Mathematical Statistics and Probability Theory, are, according to the UNM catalog, "available for graduate credit except for graduate majors in the department".

That means that that particular course is ELIGIBLE to be used for graduate credit, but it is not an automatic eligibility just by your registering for the course.

To have a double-starred course count for graduate credit, the student must first have the approval of the Advisor that it is acceptable to use the course in his/her degree program. He/she must then obtain a "green" Graduate Credit Authorization (GCA) card from the Civil Engineering office, complete it with all the required signatures, and turn it in to the Registrar's Office. By signing this card, both the student and the instructor acknowledge that the student will be held accountable for graduate-level work and requirements. When approved, the letter G will appear next to the class on the student's transcript which shows that the course has been approved for graduate credit. GCA cards must be filed with the Registrar's Office by the last day of the fourth week of classes during the regular semester.

### **Transfer Credit**

Transfer credit for graduate-level course work taken at an accredited institution either in graduate or non-degree status and not applied to a previous degree is limited to 12 hours. In accordance with UNM policy, only courses with a grade of B or higher will be accepted for credit.

### **Credit/Non-Credit grades**

Other than CE Seminar (CE 691), no courses for degree credit may be taken on a CR/NC basis.

### **Grades of C, C+, and CR**

No more than 6 credit hours of course work in which a C (2.0), C+ (2.33), or CR was earned may be credited toward a graduate degree.

### **Incomplete/NR Grades**

Students may NOT graduate with any Incomplete or NR (no record) grades. These issues should be resolved as soon as they arise, to preserve the student's intended graduation semester.

### **Credit for Experiential Learning**

The Department grants no credit for experiential learning.

### **Grade Point Average**

Students failing to maintain a 3.0 GPA will be placed on academic probation in accordance with OGS policy. Students having a GPA of less than 3.0 are not permitted to take the Master's or Comprehensive Examination. If the CE588 project course is to be the grade, which raises the GPA to 3.0, the project presentation and Master's Examination must be separate events.

### **Specialization**

Students must identify an area of concentration authorized in the Graduate Bulletin. Each area has respective core and elective courses. (see Appendix)

### **Initial Advisement**

The student should select a major advisor in his/her area of concentration as early as possible. The student should meet with a major advisor before the initial registration and identify a program of studies for the first semester. Courses that do not receive prior approval of a major advisor may be disallowed.

### **Project/Thesis/Dissertation Proposal**

The student will prepare, with the advice of the major advisor, a written research proposal and present it for approval by his or her Committee-on-Studies. The Committee may request an oral presentation. The proposal must be submitted sufficiently early for the Committee's suggestions to be fully incorporated into the work. An appendix to this manual discusses proposal content.

### **Application for Candidacy/Program of Studies**

An Application for Candidacy/Program of Studies should be filed with the OGS during the semester after 12-16 hours of graduate work have been completed. The application must be filed by July 1 for fall graduation, October 1 for spring graduation, and March 1 for summer graduation. Changes in an approved program may be submitted after approval by the major advisor and the Director of Graduate Programs.

### **Departmental Notification of Intent to Graduate**

The student must inform the Director of Graduate Programs and the Coordinator of Program Advisement of his or her intent to complete all degree requirements by July 20 for fall graduation, December 5 for spring graduation, or May 2 for summer graduation. This notification **will not be accepted** until a Program of Studies or Application for Candidacy has been submitted to and *approved by* the Dean of the Office of Graduate Studies.

### **Defense of Project/Thesis/Dissertation**

Two weeks before the presentation of the project/thesis/dissertation the student must:

- (a) Provide a final or near final copy of the project/thesis/dissertation to the Committee-on-Studies.
- (b) Notify the Department and OGS of the time and location of the defense by submitting an "Announcement of Exam" form no later than two weeks before your exam.
- (c) Provide the Department with an announcement suitable for posting.

The presentation shall summarize the project/thesis/dissertation work by the student and include an oral examination by the Committee-on-Studies. The examination may cover coursework as well as the research topic. The presentation is open to the public. The deliberation for final acceptance is open only to the Committee. Results of the examination must be reported to the OGS by November 15 for Fall graduation, April 15 for Spring graduation, or July 15 for Summer graduation.

## 4. MASTER OF SCIENCE

### **Master's Degree: Time to Completion of Degree Seven-Year Limit**

There is a seven-year limit on completion of all requirements for the Master's Degree, including transfer credit. Extensions to this time limit are granted by the Office of Graduate Studies only for the most unusual circumstances that are clearly beyond the student's control.

### **Seminar Requirement**

Students must complete 2 hours of Seminar, CE 691.

### **Program of Studies**

A major advisor, who must be a full-time Civil Engineering faculty member, shall guide the student's coursework. Approval of the program by the major advisor, the CE Director of Graduate Programs, and OGS is required.

### **Single Faculty Member Limit**

No more than half the graduate program's minimum required course work hours, exclusive of Thesis/Project, may be taken with a single faculty member.

### **Committee-on-Studies**

A Committee-on-Studies is formed at the time the student begins thesis or project research. The Committee must be composed of at least three members; at least two members must be full-time tenure or tenure-track Civil Engineering Faculty with graduate faculty approval. The major advisor chairs the Committee and must be a full-time, tenure or tenure-track CE faculty member with graduate faculty approval. The remainder of the Committee is selected in consultation between the major advisor and the student. Any non-tenured UNM faculty or any individual outside UNM must be approved for graduate instruction in our department to serve on a committee. Notification of Committee membership must be made in writing to the Director of Graduate Programs and must be approved by the Office of Graduate Studies. The Committee evaluates the project/thesis and judges the Master's Exam.

### **Degree Requirement Deadlines**

Except for courses in which you are currently enrolled, all degree requirements (including thesis & dissertation manuscripts, graduate exams, defenses, and incomplete grades) must be completed and related documentation received by OGS by the following deadlines:

Fall Graduation -- November 15

Spring Graduation -- April 15

Summer Graduation -- July 15

### **Plan I (Thesis Option)**

It is generally expected that students who are supported by the Department as a Teaching Assistant or Research Assistant will complete a Master of Science degree under the Plan I option.

1. 32 credit hour total.
2. A minimum of 24 hours of coursework.
3. 6 hours of CE 599 (Thesis).

4. A maximum 6 hours of Problems and Independent Study courses.
5. A minimum 9 hours of 500-level courses.
6. A maximum 12 hours taken in non-degree status.
7. 2 hours of CE 691 (Seminar).
8. General UNM limits, including course work from a single professor, and time of completion.
9. No credit is allowed for experiential learning.

### **Thesis Content**

Thesis work is generally of scientific nature rather than design or practice-oriented. The thesis should involve original work suitable for professional publication.

### **Thesis Format**

Information pertinent to preparation of a thesis is described in the UNM publication, "Thesis and Dissertation Manual". For information on thesis format please go to the web page <http://www.unm.edu/grad/manuscripts/manuscripts.html>.

### **Master's Examination**

The thesis presentation to the Committee constitutes the Master's Examination.

### **Thesis Submission**

Two unbound copies of the thesis, together with two copies of an abstract (300-500 words), all in correct form, are required. This must be approved by the Committee and must be submitted for the approval of OGS by the following deadlines if graduation is to occur:

Fall graduation - November 15  
Spring graduation - April 15  
Summer graduation - July 15

Two additional unbound copies must be submitted to the department.

### **Plan II (Project or Coursework Only Option)**

1. 35-credit hour total.
2. A minimum of 33 hours of formal coursework, which may include up to 3 credits of MS Project (CE 588), and 2 credits of seminar (CE 691).
3. 0 or 3 hours of CE 588 (Master's Project).
4. A limit of 6 hours of Problems and Independent Study courses.
5. A minimum 12 hours of 500-level courses.
6. A maximum 12 hours taken in non-degree status.
7. 2 hours of CE 691 (Seminar).
8. General UNM limits, including coursework from a single professor, and time of completion.
9. No credit is allowed for experiential learning.

### **Project Option**

All of the above are required in addition to defending and turning in a project.

### **Course Only Option**

All of the above are required in addition to a Comprehensive exam after the completion of your coursework.

### **Project Content**

In general, projects are professionally oriented, emphasizing development in engineering practice and methods. Work done prior to enrolling at UNM is not acceptable. In some cases, professional work done while in graduate studies under both the supervision of an employer and the major advisor can be used for a project topic. Aspects such as literature review, innovative application and critical evaluation will generally be at a higher level than the requirements for the employment product.

### **Project Format**

The project shall be reported in written form in proper English. The report should contain all the elements of a thorough engineering report including: abstract, table of contents, lists of figures, list of tables, list of symbols, introduction, review of pertinent literature and of related recent investigations, description of project, presentation and discussion of results, conclusions, recommendations, and references. The format of a project report is established by the Committee-on-Studies.

### **Master's Examination**

The project presentation to the Committee constitutes the Master's Examination for those doing projects. A coursework-based comprehensive exam constitutes the Masters Examination for students not doing projects. The comprehensive examination will include both a written and oral component. A committee of at least four Civil Engineering faculty members will administer the comprehensive exam. If approved by the Director of Graduate Programs, up to two members of this committee may be faculty holding the rank of research professor or lecturer.

### **Project Submission**

Project reports must be distributed in final form to the Committee and to the Department before the end of the semester in which credit is to be received.

### **Required Enrollment**

All master's students must be enrolled for at least 1 graduate credit either in thesis (CE 599) for Plan I, or in project, problems (not to exceed 12 credit hours), or another graduate course for Plan II for the semester (including the summer session) in which they are completing degree requirements.

Plan I students must complete a minimum of 6 hours of thesis (CE 599) credit, and only 6 hours may be applied to the Program of Studies. Once initiated, continuous enrollment (fall and spring semesters) is required until the thesis is accepted by the Dean of Graduate Studies.

## **5. DOCTOR OF PHILOSOPHY**

### **Ph.D. Degree: Time to Completion of Degree Five-Year Limit**

Ph.D. candidates have five years to complete all degree requirements from the date they are formally advanced to candidacy by OGS. Any extensions of this time limit must be requested in writing. The student's Committee on Studies, the Director of Graduate Programs and OGS must support the request.

### **Course Work Requirements**

The Ph.D. degree requires a minimum of 48 credits of course work. Generally, an M.S. degree completed at another university counts for a maximum of 30 credits of course work. At least 24 credits must be taken at UNM and at least 18 credits must be completed after admission to the Ph.D. program in Civil Engineering. In addition, 18 credits must be earned at UNM in courses numbered 500 or above. Ph.D. students must complete the M.S. core course requirements established in their area of specialty.

**Seminar Requirement:** Students must take 4 hours of Seminar, CE 691.

### **Qualifying Examination**

Candidates must pass the Qualifying Examination before a Committee-on-Studies is formed. Candidates shall take the Qualifying Examination during their first or second semester as a Ph.D. student. Candidates may request an extension of this deadline for extenuating circumstances. The Director of Graduate Programs must approve such an extension. Students who do not take the Ph.D. Qualifying Examination within one year of starting the program may be disenrolled from the Department.

The Ph.D. Qualifying Examination will consist of both written and oral components and is intended to examine the student's preparedness for graduate work at the advanced level. Students will be required to take the Qualifying Examination in at least two of the three core areas of Civil Engineering (structures, geotechnical, and hydraulics/fluid mechanics). The third area will be that in which the student wishes to major. Students wishing to take the Qualifying Exam will notify the Director of Graduate Programs in writing of their intent to take the exam by September 15 or February 15. This memorandum will identify the student's preliminary selection of major advisor and will identify the areas in which the student wishes to be examined.

The Qualifying Examination will be scored as either pass or fail by the committee responsible for each examination. Candidates who fail during their first attempt at the Qualifying Examination must retake the Qualifying Examination when it is offered the following semester. If the student does not pass the second exam, the candidate will be disenrolled. At the end of the oral examination, the student's written examination will be placed in his/her file and maintained as a record of their performance.

## **Committee-on-Studies**

### **Membership**

The candidate should discuss his/her interests with several Civil Engineering faculty early in attendance at UNM. It is helpful, but not necessary, for an agreement to be reached with a Civil Engineering faculty member to serve as Committee-on-Studies chair before the Qualifying Examination is taken.

The Committee shall consist of at least four faculty members, of whom at least two, including the committee chair, must be full-time, tenure or tenure-track Civil Engineering faculty. The Chair is usually the student's major advisor. At least one of the Committee members must hold a tenure or tenure-track appointment outside the Department. The Committee should be formed the same semester the candidate passes the Qualifying Examination. The Committee-on-Studies must be approved by the CE Director of Graduate Programs and by the Dean of Graduate Studies.

All members of the Committee on Studies MUST be on the Approved List of Faculty for Graduate Instruction with the CE Department and Office of Graduate Studies, including those who are not tenured or tenure-track faculty at UNM. Prospective members who are not on this list MUST be approved before he/she can be listed on the committee. Check with the Coordinator of Program Advisement in the department as to the individual's status and as to the procedure that must be followed.

### **Application for Candidacy**

The Committee meets with the candidate to plan and approve the program of coursework, including make-up work as needed. All Committee members must be present at this meeting. The candidate will draft an Application for Candidacy Form and submit it to the Committee for approval. The full committee, the Director of CE Graduate Programs, and OGS must approve the Application for Candidacy Form. The signed and approved Application for Candidacy Form formally establishes the requirements that the student must complete in order to receive the Ph.D. degree.

### **Single Faculty Member Limit**

No more than 50% of the required course credits at UNM may be taken with a single faculty member. (Course work that has been completed for the master's degree is included in this limit).

### **Comprehensive Examination**

When the candidate has substantially completed the coursework indicated on the approved Application for Candidacy Form, the candidate will take the Comprehensive Exam. This exam, prepared by the Committee, will include both written and oral components and must satisfy the Committee that the candidate is prepared to begin research. All Committee members must be present at the Comprehensive Examination. The Committee may wish to hear the candidate's dissertation proposal as part of the Comprehensive Exam. At the end of the oral examination, the student's written examination will be placed in his/her file and maintained as a record of their performance.

### **Dissertation**

#### **Dissertation Committee**

In most cases, the Committee-on-Studies becomes the Dissertation Committee. Membership change requires approval by the Director of Graduate Programs. Selection and appointment of the Dissertation Committee is subject to the same requirements as the Committee-on-Studies.

### **Dissertation Content**

A dissertation must reflect original and significant scientific study meriting publication in a leading journal.

### **Dissertation Hours**

The Ph.D. requires a minimum of 18 hours of Dissertation (CE 699) credit. Dissertation enrollment may not begin before the semester in which the Comprehensive Examination is passed. Candidates who fail the Comprehensive Examination cannot register for dissertation again until the Comprehensive Examination is passed.

Enrollment for dissertation may be for 3, 6, 9, or 12 hours per semester, with 9 hours the maximum in summer session. The specific number of hours should reflect the amount of time the candidate is devoting to the dissertation and the demand placed on faculty members, laboratories, libraries, and other University resources. Three hours is appropriate when the candidate is working full-time off campus while continuing to make progress with the dissertation. Six hours represents a half-time commitment. Teaching and graduate assistants should generally enroll for 9 hours.

Continuous enrollment for dissertation is expected in subsequent semesters (exclusive of summer) after initial enrollment until the dissertation is accepted by OGS. This rule applies whether or not the candidate is enrolled for other credit hours. Candidates who fail to register for dissertation in any semester must pay the fee for each missed semester. In extraordinary circumstances, OGS may waive the requirement for continuous enrollment upon presentation of a written request from the major advisor and the Director of Graduate Programs. Candidates must be enrolled for the semester in which they complete degree requirements, including the summer session.

### **Dissertation Format**

Information pertinent to preparation of a dissertation is described in the UNM publication, "Thesis and Dissertation Manual". The OGS Manuscript Coordinator arranges workshops on the "preparation of a dissertation." Call OGS for more information.

### **Dissertation Defense**

The Ph.D. Dissertation must be defended before the student's Dissertation Committee. The Dissertation Committee will consist of at least four members approved by the Dean of Graduate Studies:

- a. At least two members must hold regular, full-time faculty appointments in the Department of Civil Engineering.
- b. The dissertation director must hold a regular, full-time faculty appointment in the Department of Civil Engineering.
- c. The Committee must include at least one member who holds a regular, full-time faculty appointment outside the Department of Civil Engineering. This member may be from UNM or from another accredited institution.

For any individual on the committee who is outside the University, he/she MUST be on the Approved List of Faculty for Graduate Instruction with the CE Department. If he/she is not on that list, then the person MUST be approved before he/she can be listed on the committee. Check with the Coordinator of Program Advisement in the department as to the individual's status and as to the procedure that must be followed.

The student must notify the Civil Engineering Director of Graduate Programs at least two weeks before the dissertation defense is held and no later than November 1 and April 1 for students expecting to graduate in the fall and spring semesters, respectively. The student must provide each member of the Dissertation Committee with a complete copy of the dissertation in ample time for review prior to the examination. The student must provide the department with an announcement of the defense which includes an abstract of the dissertation that is suitable for posting on department bulletin boards.

The dissertation defense is open to the public and CE faculty and staff. Students are encouraged to attend. Students may also choose to invite their co-workers and family. The format for the Dissertation Defense will be developed by the Dissertation Committee. Generally the defense will consist of a formal presentation of the work described in the dissertation followed by questions from the audience. The committee will then convene in closed session to decide whether the work meets the standards appropriate for the Ph.D. degree.

### **Completion of the Dissertation Evaluation Form**

After the Dissertation Defense, the candidate must ensure that each Committee member completes the Dissertation Evaluation Form and forwards it to the Director of Graduate Programs.

### **Final Dissertation Approval**

The candidate must revise the Dissertation as instructed by the Committee. The Committee chair must confirm that the Dissertation is in final form, and OGS must approve the Dissertation for format.

### **Dissertation Submission**

Two unbound copies of the dissertation, each with an abstract of not more than 350 words and approved by at least three members of the Dissertation Committee, must be submitted for the approval of the Dean of Graduate Studies. The deadline dates for submission are:

November 15 for fall graduation  
April 15 for spring graduation  
July 15 for summer graduation

Two additional unbound copies must be submitted to the department.

## **APPENDIX**

### **Project/Thesis/Dissertation Proposal Instructions**

The proposal prepared by the student serves three purposes: to establish a formal statement of the problem; to identify the scope of the work and method of approach; and to inform the Committee members of the goal of the research. It is recognized that the scope, and possibly the methods, may change as the research progresses. The Committee should be kept informed of such changes.

The following outline is suggested:

1. Title Page

2. Introduction. This section should include motivation and purpose. Expected engineering value should be discussed.
3. Review
  - a. Literature Survey. This should be kept brief but should include the most pertinent references. It should contain only articles that directly contribute to the proposal.
  - b. Related investigations in progress. This should describe any known related investigations that are being conducted at the present.
  - c. Summary: This should summarize the present limitations and needs.
4. Proposed Investigation
  - a. Problem Statement. Discuss the problem to be investigated, including scope and range of parameters.
  - b. Theory.
  - c. Plans. Include the proposed approach, mathematical analysis to be undertaken, apparatus required (where applicable), and procedure.
  - d. Expected results.
  - e. Estimated cost of equipment, supplies, and technicians.
  - f. Sources of funding.
  - g. Estimated completion date.
5. References

In addition to this manual, please read thoroughly and refer to:

- the OGS website – [www.unm.edu/~grad](http://www.unm.edu/~grad)
- the UNM catalog - <http://www.unm.edu/~unmreg/catalog.htm>

**Course Requirements for:**

- (1) Construction Engineering
- (2) Environmental Engineering
- (3) Geotechnical Engineering
- (4) Hydraulic and Water Resources Engineering
- (5) Structural Engineering
- (6) Structural Mechanics
- (7) Transportation
- (8) Master's in Construction Management