

HANDBOOK OF THE GRADUATE PROGRAM

REQUIREMENTS, POLICIES, AND PROCEDURES

SCHOOL OF POLYMERS AND HIGH PERFORMANCE MATERIALS



THE UNIVERSITY OF
SOUTHERN
MISSISSIPPI®

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Shelby Freland Thames Polymer Science Research Center



www.usm.edu/polymer

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This handbook complies with the USM academic policies as stated in the Graduate Bulletin (20010-11). In the event of any inconsistency, the policies approved by the Graduate Council and the University will take precedence. This handbook was last updated in August 2006. The policies and requirements in this handbook are subject to change, pending full faculty vote of approval.

Introduction

The principal function of a university is to educate by creating an atmosphere that stimulates and supports the growth and communication of ideas. Scientific research departments should ideally have the dual mission of:

- sharpening the thinking processes, the practical skills and the creativity of students, and
- relentlessly probing the unknown from a position of knowledge at the frontiers of science in order to meet the technological needs of a modern industrial society.

In the Polymer Science Research Center at the University of Southern Mississippi we take this mission seriously. We endeavor to produce top-quality polymer scientists; therefore, in order to meet this goal, we are obliged to conduct first-rate, world-class scientific research.

The goal of the graduate program is to educate incoming students in the theory and practice of polymer science. As a student in our program you will be introduced to the unknown factors in the frontiers of polymer science. You will learn how to approach and execute a research program to further understanding and develop skills necessary to conduct independent studies. In the process you will receive valuable training for a future career in academia, commerce or industry, particularly in industries that manufacture, process, develop, and use polymeric materials.

The thrust of our program is to educate by active participation. Students engage in their research under the guidance and supervision of a faculty member. The current state of polymer science is revealed to students through formal courses, seminars, colloquia, independent reading and daily interactions.

The environment is exciting and stimulating - the variety and vigor of the wide-ranging research areas provide an impetus for achievement.

The PSRC Environment

The Shelby F. Thames Polymer Science Research Center (PSRC) is a smoke-free and drug-free workplace: no smoking or tobacco use is allowed in the PSRC, and drugs of any kind (including alcohol) are explicitly forbidden from being present or used on the USM campus and in the PSRC.

We are pleased to make available to you carrels in which to work and study during your first year of graduate study. We believe you will find them to be a positive part of your academic environment. Please abide by the following rules concerning the use of the graduate study area.

- **Please do not tape or tack anything to the walls or desks.**
- **Please keep the area clean.** This is especially important in the coffee/snack area. If spills do happen, notify Beverly McNeese in the main office immediately, so arrangements for cleaning can be made before permanent damage sets in.

You will be required to clear your personal items out of your carrel and the graduate study area following your completion of the written comprehensive exams, as you move into your respective research labs.

Graduate Program Requirements

- I. ENTRANCE EXAMINATIONS.** (M.S. and Ph.D. Students) Due to the diversity of student backgrounds, the Department requires all entering graduate students to take examinations covering undergraduate organic and physical chemistry, and calculus. The tests are designed for background assessment and administered one week before classes begin. Undergraduate remedial coursework may be assigned in any area found to be deficient. A minimum grade of B is expected in all undergraduate remedial coursework.
- II. GRADUATE DEGREE REQUIREMENTS.** See the Graduate Bulletin sections on General Degree Requirements for Master's Degree Requirements and Doctoral Degree Requirements. Note that the specific academic requirements (outlined in this PSC Handbook) of the Department of Polymer Science are, in certain aspects, more detailed and/or restrictive than those listed in the General Academic Requirements section of the Graduate Bulletin. For answers to specific questions regarding these requirements, please consult the PSC departmental graduate advisor.

The Departmental Graduate Advisor for 1st year students supported by departmental TA assignments: For the **first two semesters** of graduate work (i.e., before the student has selected a research advisor), your academic advisor will be the departmental staff lead by the Assistant Director.

Graduate Advisor for 1st year students supported by research assistantships: For the **first two semesters** of graduate work, your academic advisor will officially be your research advisor. However, for issues concerning the specific program requirements, please consult the departmental advisor.

First year students are not allowed to withdraw from a registered class or otherwise modify their course schedule without express written permission from the Graduate Advisor as approved by the School Director. No changes in official assignments or graduate duties are allowed without the permission of the Graduate Advisor and School Director.

MASTER OF SCIENCE PROGRAM (M.S. in Polymer Science and Engineering)

Admission Requirements. Admission to the master's program is based upon previous academic performance and scores on the Graduate Record Examinations (GRE). Requirements include the following: a minimum grade point average of 2.75 or better on the last 60 hours of undergraduate work, three letters of recommendation and submission of scores on the GRE.

Program Requirements. Graduation is based upon:

- Satisfactory completion of a total of 54 hours (PSC 701, 702, 710, 711, [either 703 or 712], 720, 721, 730, and including research PSC 691) with an overall graduate GPA of 3.0 or higher.
- Six (6) credit hours of 698-Thesis must be completed before graduation. Students must be registered for at least three (3) hours of 698-Thesis during the semester/term in which he or she defends.

- Satisfactory* development of an original research project and completion of a master's thesis.
- Satisfactory* completion of the final comprehensive examination (i.e., the oral defense of the master's thesis).

**Satisfactory completion of these additional requirements is determined and approved by the student's advisory committee (see below).*

All graduate students must complete the safety course (PSC 510) within three semesters of enrollment. All graduate students must register for PSC 789 (Seminar) for one credit hour each semester they are enrolled, including the semester in which they graduate. IHL Board Policy states that the maximum number of hours a graduate student is allowed to take during the summer semester is 12 hours. The Department usually requires students to register for 13 hours during the Fall and Spring semesters.

Time Limitations. The student must complete the master's degree within six calendar years from the date of initial enrollment in the graduate program. Special petition to the Graduate School will be required to revalidate over-age credit hours (see the Graduate Bulletin for details). Unless unusual extenuating circumstances exist, the department/faculty will not grant financial support, via assistantships or fellowships, to a student who has **exceeded three years** in the M.S. program.

Holiday Policy. All first-year graduate students are expected to adhere to the holiday schedule set by the School's director and all other graduate students will adhere to their major professor's schedule.

DOCTOR OF PHILOSOPHY PROGRAM

(Ph.D. in Polymer Science and Engineering)

Admission Requirements. M.S. track students may be reclassified as Ph.D. track students. Demonstrated excellence is required in coursework and a passing grade in the comprehensive examinations before a master's-track student is officially reassigned to the doctoral program.

For applicants holding a master's degree in a closely related field, from an institution approved by a recognized accrediting agency, regular admission directly to the Ph.D. program may be granted upon approval of the PSC Graduate Admissions Committee. Admission of students with previous graduate coursework or master's degrees from other institutions will be considered on an individual basis.

Formal qualifications for the Ph.D. program require:

- No more than 2 grades lower than a **B** in the first 26 hours of core courses.
- A minimum GPA of 3.5 in at least 30 hours of graduate courses taken at USM, including the core courses and research.

- Passing all three sections of the written comprehensive examination.
- Passing an Oral Examination that follows the completion of a written Independent Research Proposal.

Upon successful completion of the above requirements, a master's-track student will be admitted (and reassigned) to the Ph.D. track in good standing. At this time, the Graduate School will be notified of this change in enrollment status by form from the Departmental Graduate Advisor. Ph.D. students who do not pass the written comprehensive examination will be moved to the master's degree track.

Specific Requirements for the Ph.D. Program. All Ph.D. students must complete the safety course (PSC 510) in their first year. All graduate students must register for PSC 789 (Seminar) for one credit hour each semester they are enrolled, or as advised by the Student Services Coordinator. IHL Board Policy states that the maximum number of hours a graduate student is allowed to take during the summer semester is 12 hours. The Department usually requires students to register for 13 hours during the Fall and Spring semesters.

The 27 hours of graduate core courses in the regular PSC curriculum (PSC 501; 701-702-703; 710-711-712; 720-721; 730-740) must be completed with no more than 2 grades lower than a **B** in the first 26 hours of core courses. Only one graduate level course may be retaken for GPA improvement and students must indicate in writing which course is being retaken for this purpose. Note that this grade improvement cannot be used to satisfy the Ph.D. track admissions requirement (see above).

Math through differential equations is recommended for Ph.D. students before graduation and may be met by taking MAT 515 and 517. Differential equations is not a pre-requisite for any course in the polymer science curriculum.

Ph.D. students must complete 54 hours (including core courses, research tools, research PSC 691/791, and at least two 800 level courses) with an overall graduate GPA of 3.0 or higher on 54 hours beyond the master's degree. For research credits, M.S. students should register for appropriate research hours until they have been admitted to the Ph.D. program. Ph.D. students should register for PSC 791. All of the above-required courses must be completed **before** the term in which the student defends.

Additional program requirements for graduation:

- Satisfactory* development and presentation of an original Research Prospectus in written and oral formats (see detailed requirements, below).
- Satisfactory* completion of a written Independent Research Proposal and Oral Examination (see detailed requirements, below).
- Between 9 and 15 credit hours of 898-Dissertation must be completed before graduation. Students must be registered for at least three (3) hours of 898-

Dissertation during the semester/term in which he or she defends.

- Satisfactory* completion of a final written Dissertation and Oral Defense.

**Satisfactory completion of these additional requirements is determined and approved by the student's advisory committee.*

Time Limitations. Courses taken above those required of the master's degree or its equivalent, which fit into the degree program but which are **six or more years old** at the time of admission to the advanced graduate program, may be counted toward meeting degree requirements (with special petition) when recommended by the Department Chair and approved by the Graduate Dean. **The comprehensive exam** (both written and oral components) must be completed within a period of **six years** after the student has been admitted to advanced graduate standing at the University of Southern Mississippi. *In the Department of Polymer Science, this means that the elapsed time between passing the written comprehensive examination and satisfactorily **completing (with signatures) the independent proposal/oral examination can not exceed 6 years.*** If a student fails to meet this deadline, the original written comprehensive examination will become **invalid** and must be retaken during the next regular examination cycle (at the end of the Spring term).

Unless unusual extenuating circumstances exist, the department/faculty will not grant financial support, via assistantships or fellowships, to a Ph.D. student who has **exceeded six years** in the Polymer Science graduate program.

Holiday Policy. All first-year graduate students are expected to adhere to the holiday schedule set by the School's director and all other graduate students will adhere to their major professor's schedule.

III. GRADING POLICIES. All letter grades given at the completion of a student's course work are subject to the specific grading policies of the individual faculty members. A "general" guideline for grading in the Department is as follows:

- a grade of **A** typically indicates that the student's work is of unusually high quality;
- a grade of **B** indicates that a student has demonstrated a generally solid understanding of the course material;
- a grade of **C** indicates that a student has demonstrated a poor understanding of the subject and has performed below that which is expected.;
- a grade below a **C** indicates that the student has serious deficiencies in the subject material. A grade of **D** or below will not apply toward a graduate degree, and may yield a status of *Academic Probation* (see below);
- Faculty members and instructors have the option to assign grades with the "+" and "-" system. These modifiers have significant impact on student GPA.
- Faculty members who have given incompletes (**I**) will receive a reminder of these incompletes in the middle of each semester. If an "**I**" has not been removed by the next semester (excluding summer term), it automatically becomes an **F**. Students are

prohibited from enrolling in any course for which the current grade is “**T**”. A grade of **E** (course in progress) is appropriate for thesis (PSC 698) or dissertation (PSC 898) until the coursework is completed, then a grade of **P** (Pass) or **F** (Fail) will be assigned.

IV. ACADEMIC PROBATION. Regularly admitted graduate students will be placed on a status of Academic Probation if:

- The student earns 2 **C**'s during the first semester of core course work, **or**
- The student earns 1 grade below a **C** during the first semester of core course work, **or**
- The student's **Overall GPA** falls below a **3.0**.

If a student is placed on Academic Probation, he/she is then required to remove this status by earning grades in the regular PSC curriculum that are sufficient to raise their **Overall GPA** to a **3.0** or higher. Failure to remove the status of academic probation, or if the student earns more than 3 grades of a **C** (or lower) in the core courses, will result in the student no longer be considered a candidate for a graduate degree in Polymer Science.

A student who's GPA falls below a 3.0 and are placed on probation by the Graduate School is subject to having their tuition waiver revoked during the probationary semester. In this event, the student will be required to pay their full tuition. Continuation of the students stipend will be at the discretion of the PSC faculty.

V. THE POLYMER SCIENCE SEMINAR SERIES (PSC 789). First year graduate students must attend PSC 789 (Seminar) as a requirement of receiving their stipends. First year students are expected to participate in the question and answer sessions during seminar.

All other graduate students must register for PSC 789 (Seminar) for one credit hour each semester they are enrolled, including the semester in which they graduate. The Polymer Science Seminar Series course includes both the regular student seminars held on Wednesday and Friday afternoons and the scheduled Wednesday afternoon Polymer Science Symposium Series. The Polymer Science Symposium Series offers external speakers from academia and industry and covers a wide range of topics on the frontiers of Polymer Science. The grades for this one-hour course are based on student participation in the question & answer sessions and on student attendance.

VI. THE GRADUATE ADVISOR SELECTION PROCESS. During the first year of coursework all 1st year students are encouraged to investigate the research interests of each of the graduate faculty. Since the field of Polymer Science is broad and multidisciplinary, the faculty feel that it is important that the student is not burdened with the choice of advisor before he/she encounters a detailed introduction to the field through the core curriculum. During this period, the faculty have also agreed to refrain from “hard-sell” recruiting tactics. In the spring semester of each year, the graduate faculty will present to the 1st year students an overview of their respective research interests and available projects. After all of the faculty have presented their research overviews, the students will be required to interview at least three faculty for the purpose of selecting an advisor with desirable research interests.

The students will then rank their three choices on a graduate advisor selection form and submit the form to the departmental chairman. During a subsequent faculty meeting, student selection will be finalized, and the students will be notified of the outcome.

Students are expected to complete their graduate research under the supervision of their selected advisor. However, in the event of extenuating circumstances a student may petition the School to change advisors. In this case, the following procedure must be followed:

1. The student must complete a “request change of advisors” form and submit it to the graduate advisor and the department chair. The department chair may bring the request to the next available faculty meeting.
2. If the change is approved, the student will be expected to write up all of the research that was completed with the original advisor.
3. The student, following the advice of the new advisor, will select a new committee.
4. The new advisor will schedule a new dissertation prospectus defense that the student will defend in accordance with the new project.

Policy for Mid-Term Students: Mid-term students (i.e., students that first entered the program in the Spring semester) are given the opportunity to delay their advisor selection until **November 1** in order to have sufficient time to fully interview all faculty. Mid-term students are also recommended to work in one of the PSRC research groups during their first summer term with the understanding that this employment in no way obligates the student to select that specific faculty member as their research advisor during their regular advisor selection process in November.

Policy for 1st Year Students on RAs: Obviously, 1st year students who entered the program on RA (i.e., supported from day 1 on a research grant managed by one of the PSC faculty) are exempt from this selection process. However, the RAs must attend all faculty presentations in order to be educated (with the other 1st years) about the different research programs in the department. Other policies concerning the required activities of the 1st year RAs are listed here.

- 1st year RAs are strongly encouraged to reside in the graduate study lounge (i.e., bullpen) during the first two academic (core) semesters.
- 1st year RAs are required to take the full load of core courses (i.e., the same load as that required of the 1st year students on departmental TAs) beginning with their entering semester.
- 1st year RAs are exempt from assignment with other departmental support or teaching activities.
- 1st year RAs are required to fulfill the research requirements as outlined by their research advisor during this 1st year period.
- 1st year RAs are required to take the comprehensive exams immediately following completion of their two core curriculum semesters (i.e, on the same schedule as their fellow TA classmates).

- VII. THE WRITTEN COMPREHENSIVE EXAMINATIONS.** (Ph.D. track) After satisfactory completion of the 27-hour core curriculum, students wishing to pursue the Ph.D. track are required to take the written comprehensive examination. The written comprehensive examination is offered *twice a year* at the end of the spring term but before the summer term, and during the break period between the Fall and Spring semesters. The Department requires a three-section examination, each section consisting of three exams and occupying one day, in the areas of organic, physical, and practical polymer science. While coursework forms the basis for this exam, questions may also cover seminar topics as well as recent literature in polymer science. Students must pass all three sections of the comprehensive exam in order to be considered for admission to or to continue in the Ph.D. program. A student passes a section if they pass two out of three tests making up that section. A double blind number system will be used for the comprehensive examination to help ensure confidentiality. If a student fails any section of the examination, the student must retake and pass that section of the comp during the next regularly scheduled examination period. A student may only retake the exam or a section of the exam **one** time. When the exams are passed, a “*Results of Comprehensive and/or Qualifying Exams Form*” is sent to the Graduate School by the Department stating that the **written** portion of the Doctoral Comprehensive Exam requirement has been satisfied. *Note that the Graduate School requires both a written and oral component to the Comprehensive Examination. Both components are satisfied only after the student passes the Oral Examination (following the Independent Proposal Defense, see below).* If a student fails the written comprehensive exam after the **one retake attempt**, then that student will be considered on the Master’s track only.
- VIII. THE GRADUATE ADVISORY COMMITTEE.** (M.S. and Ph.D.) After consultation with their advisor, all students are required to interview other faculty members for the purpose of determining their willingness to serve as active participants on their Graduate Committee. Committee assignments must be approved by the graduate advisor. Upon mutual agreement, a *Graduate Advisory Committee Request Form* is signed by the committee members and the School Director, then submitted to the Dean of the Graduate School. The M.S. Committee consists of at least three members while the Ph.D. Committee consists of at least five members, including the Committee Chair (research advisor). This Committee must be appointed early in the student’s program (well before the presentation of the Research Prospectus). It is expected that each student’s committee should be established within six weeks of the student passing the written component of the comprehensive examinations. For the Ph.D. committee, a minimum of four members of the committee must be regular tenured/tenure track faculty from the School of Polymers and High Performance Materials. One or more committee members may be chosen from the PSC research faculty, and students are also encouraged to seek one or more members from other departments. One member may be from another school or industry, but only as approved through the School of Polymers and High Performance Materials faculty, Graduate School, and the University Graduate Council (necessary paperwork is available through the Graduate School).
- IX. THE DISSERTATION PROSPECTUS.** (Ph.D.) Within **12 months** after successfully

completing the written component of the comprehensive examination, the student is required to prepare a concise, yet detailed, written dissertation prospectus (typically 10-15 double-spaced, typewritten pages), which includes an annotated Bibliography and must be approved by the student's committee. The prospectus should summarize a detailed outline of research objectives for the dissertation project, and include the student's work accomplished to date. Since this formal requirement falls early in the student's graduate program, it is expected that a significant portion of the prospectus will include a detailed literature review of the chosen research area. The written document must be presented to each of the student's committee members at least **two weeks** prior to the previously selected, oral presentation date. Failure to meet this deadline may result in a grade of 'F' for the research prospectus examination. After the formal presentation to the department and committee approval, a form is sent from the student's major professor to the Graduate School stating that the dissertation prospectus requirement of the Ph.D program has been satisfied. *If the committee recommends corrections or modifications to the written document, the revisions must be completed and approved by the committee **by the end of the Fall or Spring term** following the semester in which the oral presentation was conducted. Failure to complete the necessary corrections or modifications within these defined time limits will result in a seminar grade of 'F' for the semester in which the deadline occurs and for each successive semester in which the completed document, signed by the committee, is not submitted to the School's Student Services Coordinator.*

As part of the committee approval, the student's proficiency in written and spoken English will be evaluated. If the student does not demonstrate adequate English language proficiency, the student may be required to take remedial courses (to be determined by the committee) to improve English language skills.

X. THE INDEPENDENT PROPOSAL PRESENTATION AND ORAL EXAMINATION. (Ph.D.) Within **12 months** after successfully completing the prospectus examination, each doctoral student must submit an independently conceived and developed written proposal **not to exceed** 25 double-spaced pages of text dealing with an original proposition **unrelated** to their dissertation research. Students must submit one copy of the written proposal to each committee member at least **two (2) weeks** prior to the scheduled oral presentation. A title should be posted to all PSC faculty and students **one (1) week** prior to the scheduled oral presentation. For the oral examination, the student must not only be prepared to defend the written proposal, but should also be prepared to answer questions on coursework, seminars, and literature in polymer science and related areas. Following the oral presentation of the proposal and the oral examination administered by the committee, the student will be informed of the outcome in the form of **Pass, Conditional Pass, or Fail**. A **Pass** indicates that the committee fully approves the written document, oral presentation, and the oral examination. A **Conditional Pass** typically indicates that the committee requires modifications to the written document. A **Fail** typically indicates that the student demonstrated serious fundamental deficiencies in the proposed idea, or serious deficiencies in the oral presentation and/or examination. Recommendations by the committee, following a **Fail** on this requirement, may include:

- A total rewrite of the proposal based on the original concept,

- A total rewrite of the proposal based on a new topic,
- A total rewrite of a new proposal with another scheduled oral presentation,
- A second oral examination at a later date, or
- Disqualification of the student for admission to (or continuation in) the Ph.D. program.

If the committee recommends corrections or modifications to the written document (i.e., with a **Conditional Pass**), the revisions **must be completed**, with committee approval, **by the end** of the Fall or Spring term following the semester in which the oral presentation was conducted. Failure to meet this deadline will result in a grade change to **Fail**, subject to the recommendations listed above.

If the committee recommends a total rewrite and/or a second oral examination (i.e., with a **Fail**), the student is granted **one** attempt to pass a retake of the oral comprehensive exam, with committee approval, **by the end** of the Fall or Spring term following the semester in which the original oral presentation was conducted. Failure to satisfactorily pass this retake of the oral comprehensive examination will result in an automatic disqualification of the student for admission to (or continuation in) the Ph.D. program.

Following a satisfactory completion of the independent research proposal and oral examination, a form will be sent from the School of Polymers to the Graduate School, stating that the student has completed all requirements of the Comprehensive Examination.

INDEPENDENT RESEARCH PROPOSAL GUIDELINES

The following guidelines were taken in part from those used by the National Science Foundation for writing proposals and should be used to assist students in preparing research proposals for PSC Ph.D. degree requirements.

A. The Proposal Format

The scientific text of the proposal should be attached to an introductory page with title and signature spaces. Please observe the following guidelines in preparing the proposal.

1. The first section of the Proposed Research should be an ABSTRACT of no more than one double-spaced typewritten page. The abstract should present the rationale of the research, its scientific objective, and an estimate of the significance to the field of research if the objective is reached. Please see more detailed abstract guidelines in *para.* 4(i) below
2. The body of the proposal should enlarge upon the salient points presented in the Abstract. In addition, it should provide a **brief** survey of pertinent literature, a section on the plan of attack on the problem, and any non-scientific matters which

require explanation, for example, plans for access to specialized equipment, justification for special budgetary requests, etc. Please see more details about the project description in *para 4* (iii) below.

3. **Proposal Pagination Instructions**

The proposal must be paginated, beginning with the abstract as page 1 and ending with the references as the last page.

4. **Proposal Margin and Spacing Requirements**

The proposal must be clear, readily legible, and conform to the following requirements:

a. Use of only the approved typefaces identified below, a black font color, and a font size of 10 points or larger must be used:

- For Windows users: Arial, Helvetica, Palatino Linotype, Georgia, or Times New Roman
- For Macintosh users: Arial, Helvetica, Palatino, Georgia or Times New Roman

A Symbol font may be used to insert Greek letters or special characters, however, the font size requirement still applies;

b. No more than 4 lines within a vertical space of 1 inch; and

c. Margins, in all directions, must be at least an inch.

3. Page Formatting

The proposer must use only a standard, single-column format for the text. Avoid using a two-column format since it can cause difficulties when reviewing the document.

The guidelines specified above establish the minimum type size requirements; however, PIs are advised that readability is of paramount importance and should take precedence in selection of an appropriate font for use in the proposal. Small type size makes it difficult for reviewers to read the proposal; consequently, the use of small type not in compliance with the above guidelines may be grounds for the return of the proposal without review.

4. Proposal Contents

- i. Project Summary*

The proposal must contain a summary of the proposed activity suitable for publication, not more than one page in length. It should not be an abstract of the proposal, but rather a self-contained description of the activity that would result if the proposal were funded. The summary should be written in the third person and include a statement of objectives and methods to be employed. It must clearly address in separate statements (within the one-page summary):

- the intellectual merit of the proposed activity; and
- the broader impacts resulting from the proposed activity.

It should be informative to polymer scientists and engineers and understandable to a scientifically or technically literate lay reader.

ii. Table of Contents

A Table of Contents must be included. The table of contents is not included in the page limitations of the proposal.

iii. Project Description

1. Content

The Project Description should provide a clear statement of the work to be undertaken and must include: objectives for the period of the proposed work and expected significance; relation to longer-term goals of the proposed project; and relation to the present state of knowledge in the field, to work in progress elsewhere.

The Project Description should outline the general plan of work, including the broad design of activities to be undertaken, and, where appropriate, provide a clear description of experimental methods and procedures. It must describe as an integral part of the narrative, the broader impacts resulting from the proposed activities, addressing one or more of the following as appropriate for the project: how the project will integrate research and education by advancing discovery and understanding; how the results of the project will be disseminated broadly to enhance scientific and technological understanding; and potential benefits of the proposed activity to society at large.

2. Page Limitations

Brevity assists the faculty in dealing effectively with proposals. Therefore, the Project Description may not exceed 25 pages. Visual materials, including charts, graphs, maps, photographs and other pictorial presentations are included in the 25-page limitation. Students are cautioned that the project description must be self-contained and that URLs that provide information related to the proposal should not be used because 1) the information could circumvent page limitations, 2) the examiners are under no obligation to view the sites, and 3) the sites could

be altered or abolished between the time of submission and the time of review.

Conformance to the 25-page limitation will be strictly enforced and may not be exceeded. Proposals that exceed this page limitation will be returned with the expectation that the document will be re-submitted in correct format prior to the beginning of the two-week time.

3. References Cited

Reference information is required to support the information presented in the body of the proposal. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. If the document is available electronically, the website address also should be identified. Students must be especially careful to follow accepted scholarly practices in providing citations for source materials relied upon when preparing any section of the proposal. While there is no established page limitation for the references, this section must include bibliographic citations only and must not be used to provide parenthetical information outside of the 25-page project description.

4. Presentation:

The independent research proposal must be defended at a regularly scheduled graduate seminar. The presentation must follow best practices in professionalism and in visual presentation.

5. Budget:

A budget for the proposed project must be included. The budget should follow the format laid down by the Sponsored Programs Administration of the University of Southern Mississippi. This format is described on the Web-page of the Sponsored Programs Administration. In general, all proposals must include an itemized budget that is reasonable for completion of the project. Budgets should be limited to \$100,000 per year, over a three-year period. Reasonable equipment charges may be requested, and the indirect charges are set at 46% of the modified total direct costs, excluding equipment costs.

5. Constraints and Suggestions

As in any proposal for which you are asking someone to put up real money, the basic idea must be good; it must be novel, creative and interesting, and it must show a real potential for success. Since this is an academic environment, and the purpose of this requirement is to broaden the educational horizons in the field of Polymer Science, the proposal should clearly address **a fundamental scientific question and it must display the student's mastery of**

the fundamentals of Polymer Science. The following comments should also be helpful in developing the proposal.

- Do not present a proposal that is only an incremental modification of an existing concept, method or idea. For example, a proposal outlining the development of a new peroxide initiator for polystyrene may be novel (“No one has ever done this before...”), but if, in the end, you still have ordinary PS, then the development is incremental and does not satisfy the proposal requirement.
- An excellent idea can help make up for poor implementation or missing components, but a poor idea cannot be saved by fancy footwork.
- Your ideas must be defensible: ask yourself, a) Does this make sense? b) Has anyone done this before? c) Does anyone **care** if I do this or not? d) Why is it important?
- Know the background science: this is also a defense of your basic knowledge and understanding of polymer science.

XI. RESEARCH TOOLS. (Ph.D., only) A selection of courses relevant to the student’s field of research is required in the doctoral program and shall consist of a minimum of **eight (8)** semester hours of graduate-level coursework. The courses selected to satisfy the Research Tools requirement must be approved by the student’s research advisor (on behalf of the student’s Graduate Committee) and may consist of a combination of courses in a number of related areas. Coursework in a 500-level series may be applied to the Research Tools requirement only if this coursework is formally approved by the student’s Graduate Committee (a signed research tools approval form must be submitted to the Departmental Graduate Advisor) or was declared to be compulsory by a previous departmental notice (e.g., remedial Chemistry courses). The courses selected to satisfy the Research Tools requirement may include courses in chemistry, physics, math, biology or some combination of science courses in these and related disciplines, or graduate-level language courses (the 9-hour series of undergraduate language courses 101, 102, and 201 may be taken as an alternative to the 6-hour series of graduate level language Reading for Research courses 501 and 502). All “Special Topics” 800-level Polymer Science and Engineering courses (including the two 800-level PS&E courses required for the Ph.D. program) may be used to satisfy this Research Tools requirement. Recent graduate coursework, that has **not** been used to satisfy some other graduate degree, may be considered to meet the requirement for Research Tools.

XII. RESIDENCY REQUIREMENTS. (Ph.D., only) At some point during the graduate degree program, all candidates must complete 24 graduate hours of continuous study on the Hattiesburg campus within the time limit of two consecutive semesters. Students holding assistantships may fulfill the residency requirement by earning a total of 24 semester hours within three consecutive semesters (including summer term).

XIII. OUTSIDE EMPLOYMENT POLICY. (M.S. and Ph.D.) Students receiving full-time support through teaching or research assistantships or other special federal or industrial fellowships may not engage in any outside employment. Other paid employment within the University is governed by the appropriate University regulations. The permission of the student's Advisor and the School Director must be obtained before this other employment begins.

XIV. THESIS AND DISSERTATION TIMETABLE. For the exact deadlines the student must meet for graduation, consult the Thesis and Dissertation Deadlines calendar obtainable from the Graduate School. A checklist for master's students is given as **Appendix A**. A checklist for doctoral students is given as **Appendix B**. Furthermore, it is important to note that students are required to enroll continuously after they have taken required coursework until they complete their degree using the guidelines listed in **Appendix C**.

A.) **Application for Candidacy:** (Ph.D.) This form is filed only after the completion of all requirements for the degree except the dissertation. Two copies should be filed with the Graduate Office at least one semester prior to graduation. The graduation fee must be paid before the application is filed (See calendar - Thesis and Dissertation Schedule).

B.) **Application for Degrees:** The Graduate School degree auditor will check Graduate degree applications carefully. Faculty should also review these applications carefully before signing, noting the following:

- Thesis and dissertation credit remains an "E" grade until the thesis or dissertation is complete **and** has been submitted to the Graduate School. The "P" grade is automatic after filing in the Graduate School Office.
- All **required** coursework must be completed before the semester in which the student defends.
- Students must complete 6 credit hours of **698-Thesis** (M.S.) or 12 credit hours of **898-Dissertation** (Ph.D.) before graduation. Each student must enroll for at least 3 hours of 698 or 898 during the semester/term in which the student defends. Only 12 hours of dissertation credit (Ph.D.) or 6 hours of thesis credit (M.S.) will count toward the degree (even if more hours have been taken).
- Students are responsible for meeting the dissertation deadlines that are listed on the thesis-dissertation deadline schedule on the Web at [www.usm.edu/graduate studies](http://www.usm.edu/graduate%20studies). If a student fails to meet the final deposit deadline, his or her degree will be awarded the next semester. The student must enroll for one (1) hour of 898 that semester.
- Courses carrying the prefix 697/897 (Independent Study) do not count toward the master's or doctoral degree.
- Only six hours of transfer work is allowed toward the degree.
- Classes used for the master's degree and filed on the master's degree

application cannot then be used for the doctoral degree.

The degree auditor will also check the department's section of the catalog to confirm if a foreign language is required for the master's or how many foreign languages are required for the doctorate, and what the department requires about statistics, computer science and/or a minor field.

C.) **Thesis or Dissertation and Abstract:** (Master's and Ph.D.) Consult the University Requirements for Preparing Theses and Dissertations (available from the Graduate School) for details concerning dissertation specifications. Courtesy demands that the committee have the dissertation at least two weeks prior to the final oral defense. The written document must be submitted five to six before commencement, and the graduate reader must approve the dissertation. Students must be registered for a minimum of three hours of PSC 698 or PSC 898 during the semester in which they graduate.

D.) **Final Thesis or Dissertation Defense:** (Master's and Ph.D.) The oral defense must be presented at least four weeks prior to graduation and the Graduate School notified at least ten days in advance of the dates of this defense. Prior to the defense, Ph.D. students should procure a copy of the *Results of Oral Defense of Dissertation* form and Master's students should procure a copy of the *Results of Oral Defense of Thesis* form from the Graduate School's website or from the Student Services Coordinator. This form and a copy of the dissertation or thesis title page are immediately submitted to the Graduate School after the oral presentation (See calendar - Thesis and Dissertation Schedule).

E.) **Thesis and Dissertation Requirements:** All students should have the graduate reader check and approve their title pages before they ask committee members to sign them (this will prevent the committee members from signing the student's title pages more than once). Four title pages are required, each bearing the original signature of each committee member in **black ink**. The Graduate School will accept no title pages with signatures in blue (or any other color). It should be self-evident that no committee member may sign on behalf of any other committee member; each member must personally sign each title page. In addition, the Graduate School will accept theses and dissertations printed only on 100% cotton, white paper of at least sixteen-pound weight. The Graduate School will not accept final copies of theses and dissertations unless the graduate reader has first checked and approved them.

F.) **Filing of Dissertation and Thesis:** The last day on which the student may present signed the dissertation or thesis and abstracts to the Graduate School office (see the General Calendar of the Graduate Bulletin) is usually one week before commencement.

CHECKLIST FOR MASTER'S STUDENTS

CONSULT THE GRADUATE BULLETIN FOR SPECIFIC DETAILS AND DATES.

	DATE FILED
<p>1. APPLICATION FOR ADMISSION TO THE MASTER'S PROGRAM</p> <p>Prospective students should consult the Graduate Bulletin for admission requirements. They should take care to file application forms before the semester deadline stated in the General Calendar in the Graduate Bulletin.</p>	
<p>2. THE GRADUATE RECORD EXAMINATION</p> <p>Prior to admission prospective students must take the Graduate Record Examination (GRE). The GMAT or Miller Analogies Test is accepted by some departments-check with your department. Scores need to be sent to the Graduate Admissions. An application for the GMAT may be obtained from the College of Business Administration. An application for the GRE may be obtained in the Graduate School.</p>	
<p>3. THE DEPARTMENTAL MASTER'S COMMITTEE</p> <p>Some departments require a thesis or project. If so, the chair of the department should recommend to the Dean of the Graduate School (on a committee request form) a major professor and a committee of two others to supervise the work of the student.</p>	
<p>4. FOR CONDITIONAL STUDENTS ONLY</p> <p>A student who has been admitted to the Graduate School on a conditional basis and has met the requirements for regular graduate status (see requirements in the Graduate Bulletin) should notify the department chair that the requirements have been met. Upon the recommendation of the department chair and the Dean of the Graduate School, the conditional admission may be removed and the student reclassified as a regular graduate student.</p>	
<p>5. FOREIGN LANGUAGE PROFICIENCY (WHERE REQUIRED)</p> <p>Consult the Graduate Bulletin for details.</p>	

	DATE FILED
<p>6. <i>APPLICATION FOR THE MASTER'S DEGREE</i></p> <p>This form can be obtained from the Graduate School. Present four copies of this form to the major professor for approval and signature. Pay the graduate fee in the Business Office where the application forms will be stamped PAID. The application should then be left with the department chair for signing and forwarding to the appropriate school dean and to the Dean of the Graduate School. The application must be filed in the Graduate School one semester prior to the graduation date if the student is to be included in that class.</p>	
<p>7. <i>THE MASTER'S THESIS</i></p> <p>The student should consult the <i>Student Manual for Preparing Theses and Dissertations</i>, available in the Graduate School, for details concerning the requirements for theses. For any additional information, including deadlines, the student must contact the Graduate Reader in the Graduate School.</p>	
<p>8. <i>THE FINAL COMPREHENSIVE EXAMINATION</i></p> <p>The written and/or oral examination may be administered at any time in the semester prior to the last day of class for the semester in which the degree is desired. The department reports the results to the Graduate School no later than the last day for presented signed theses to the Graduate Office. The examination may be administered earlier in the semester if the department so desires. IT IS A GRADUATE SCHOOL REQUIREMENT THAT ALL MASTER'S DEGREES HAVE A COMPREHENSIVE EXAM.</p>	

DATES ARE ALSO PUBLISHED SEPARATELY AND ARE AVAILABLE IN THE GRADUATE SCHOOL

CHECKLIST FOR DOCTORAL STUDENTS

CONSULT THE GRADUATE BULLETIN FOR SPECIFIC DETAILS AND DATES.

	DATE FILED
<p>1. APPLICATION FOR ADVANCED STUDY</p> <p>All students must file an application for admission with Graduate Admissions for each post-master's degree undertaken. These forms may be obtained in the Graduate School. See the Graduate Bulletin for admission requirements.</p>	
<p>2. THE GRADUATE RECORD EXAMINATION</p> <p>Graduate Record Examination (GRE) scores must be sent to Graduate Admissions. An application to take the GRE may be obtained in the Graduate School.</p>	
<p>3. THE DOCTORAL COMMITTEE</p> <p>Using a committee request form, the department chair recommends the committee. The Dean of the Graduate School appoints and approves a five-person committee.</p>	
<p>4. THE QUALIFYING ENTRANCE EXAMINATION</p> <p>The Graduate School <i>must</i> be notified by memo of the results of this examination.</p>	
<p>5. THE DOCTORAL PLANNING SHEET</p> <p>Some departments require planning sheets. If so, the forms available in the Graduate School. At least five committee members, including the major professor, must sign the planning sheet. Each committee member receives a copy. Planning sheets are completed after the qualifying examination has been passed and the committee appointed, but before the student has completed 36 hours of course work.</p>	
<p>6. FOREIGN LANGUAGE PROFICIENCY</p> <p>Consult the Graduate Bulletin for details. There are forms of prior and post-approval of classes taken.</p>	
<p>7. RESIDENCY REQUIREMENTS</p> <p>Consult the Graduate Bulletin for details.</p>	
<p>8. THE COMPREHENSIVE EXAMINATION</p> <p>The Graduate School must be notified by memo of the results of this examination.</p>	

	DATE FILED
<p>9. <i>APPLICATION FOR CANDIDACY</i></p> <p>This form is filed only after the completion of all requirements for the degree except the dissertation. Two copies should be filed with the Graduate School at least one semester prior to graduation. (See calendar - Thesis and Dissertation Schedule)</p>	
<p>10. <i>DISSERTATION PROSPECTUS</i></p> <p>The dissertation prospectus must be approved by the student's committee. The major professor notifies the Graduate School of the approval by memo.</p>	
<p>11. <i>APPLICATION FOR DOCTORAL DEGREE</i></p> <p>Two copies should be filed with the Graduate School at least one semester before graduation. The graduation fee must be paid before the application is filed. (See calendar - Thesis and Dissertation Schedule)</p>	
<p>12. <i>DISSERTATIONS AND ABSTRACTS</i></p> <p>Consult the <i>Student Manual for Preparing Theses and Dissertations</i> for details concerning dissertation specifications. For any additional information, call or see the Graduate Reader. Courtesy demands that the committee have the dissertation at least two weeks prior to the oral defense.</p>	
<p>13. <i>FINAL ORAL EXAMINATION</i></p> <p>This oral examination must be taken at least six weeks before graduation and the Graduate School notified of the date prior to the examination. Major professors should obtain a Results of Oral Defense of Dissertation form from the Graduate School prior to the defense. (See Calendar - Thesis and Dissertation Schedule).</p>	
<p>14. <i>FILING OF DISSERTATION</i></p> <p>The last day on which the student may present signed dissertations and abstracts to the Graduate School is listed in the General Calendar of the Graduate Bulletin. Signed dissertations <i>must</i> be filed in the Graduate School two weeks before graduation. (See Calendar - Thesis and Dissertation Schedule)</p>	

DATES ARE ALSO PUBLISHED SEPARATELY AND ARE AVAILABLE FROM THE GRADUATE SCHOOL (www.usm.edu/graduateschool).

Revisions to the Graduate Bulletin may require modifications to the guidelines presented in this handbook. Please seek advice from the School of Polymers and High Performance Materials Graduate Advisor prior to milestone completion.

Approved Graduate Council (Revision of a current policy)

MASTER'S

Continuous Enrollment. Students are expected to enroll continuously after they have taken required coursework until they complete their degree using the guidelines listed below.

1. Students must register for one (1) hr of independent study and research (697) or thesis (698) or project hour Fall *and either* Spring *or* Summer semester if they:

- Have incomplete grades (Is) in one or more courses
- Have completed all coursework but must take comprehensive exams
- Have not completed their thesis
- Have not completed their project

Students must enroll for one (1) hr in the Summer semester if they are using university services, e.g., library and/or technology services.

2. Students must register for three (3) hours of 698 or project hours during the semester they expect to defend and complete the thesis or project. All required coursework must be completed before the semester in which the student defends the thesis. The thesis must be deposited in the Graduate School or the final project given to the major professor.

3. Students must register for one (1) hour of 697 or project hour the next semester if they have not deposited the thesis in the graduate school or submitted final project to their department.

Failure to enroll for the appropriate hours will result in the student's being discontinued from USM and require that the student reapply for admission to the program.

Leave of Absence.

Under special circumstances such as illness, family hardship, or military service a student may request a leave of absence. Leaves of absence will be granted for one semester or longer as circumstances warrant. Requests for a leave of absence should be submitted in writing to the department chair or director. The chair or director will then forward his or her recommendation to the Dean of the Graduate School for consideration. The Graduate Dean will notify the student and chair or director of the decision. Normally, requests should be submitted at least one semester before the leave of absence.

SPECIALIST

Continuous Enrollment. Students are expected to enroll continuously after they have taken required coursework until they complete their degree using the guidelines listed below.

1. Students must register for one (1) hr of independent study and research (797) or thesis (798) or project hour Fall *and either* Spring *or* Summer semesters if they:

- Have incomplete grades (Is) in one or more courses
- Have completed all coursework but must take comprehensive exams
- Have not completed their thesis
- Have not completed their project

Students must enroll for one (1) hr in the Summer semester if they are using university services, e.g., library and/or technology services.

2. Students must register for three (3) hours of 798 or project hours during the semester they expect to defend and complete the thesis or project. All required coursework must be completed before the semester in which the student defends the thesis. The thesis must be deposited in the Graduate School or the final project given to the major professor.

3. Students must register for one (1) hour of 797 or project hour the next semester if they have not deposited the thesis in the graduate school or submitted final project to their department.

Failure to enroll for the appropriate hours will result in the student's being discontinued from USM and require that the student reapply for admission to the program.

Leave of Absence.

Under special circumstances such as illness, family hardship, or military service a student may request a leave of absence. Leaves of absence will be granted for one semester or longer as circumstances warrant. Requests for a leave of absence should be submitted in writing to the department chair or director. The chair or director will then forward his or her recommendation to the Dean of the Graduate School for consideration. The Graduate Dean will notify the student and chair or director of the decision. Normally, requests should be submitted at least one semester before the leave of absence.

DOCTORAL

Continuous Enrollment. Students are expected to enroll continuously after they have taken required coursework until they complete their degree using the guidelines listed below.

1. Students must register for one (1) hr of independent study and research (797) or dissertation (898) Fall **and either** Spring **or** Summer semesters if they:

- Have incomplete grades (Is) in one or more courses
- Have completed all coursework but must take comprehensive exams
- Have not been admitted to candidacy
- Have not completed their dissertation

Students must enroll for one (1) hr in the Summer semester if they are using university services, e.g., library and/or technology services.

2. Students must register for three (3) hours of 898 hours during the semester they expect to defend and complete the dissertation. All required coursework must be completed before the semester in which the student defends the dissertation. The dissertation must be deposited in the Graduate School.

3. Students must register for one (1) hour of 797 or 898 the next semester if they have not deposited the dissertation in the graduate school.

Failure to enroll for the appropriate hours will result in the student's being discontinued from USM and require that the student reapply for admission to the program.

Leave of Absence.

Under special circumstances such as illness, family hardship, or military service a student may request a leave of absence. Leaves of absence will be granted for one semester or longer as circumstances

warrant. Requests for a leave of absence should be submitted in writing to the department chair or director. The chair or director will then forward his or her recommendation to the Dean of the Graduate School for consideration. The Graduate Dean will notify the student and chair or director of the decision. Normally, requests should be submitted at least one semester before the leave of absence

