

# **Lawrence Technological University**

## **College of Engineering**

### **Mechanical Engineering Department**

#### **Policies and Procedures for Master and Doctoral Students and Graduate Advisors**

**October 2003**



## **Preface**

Every graduate student in the Mechanical Engineering Department is responsible for knowing and abiding by these policies and procedures, as well as those in the University Graduate Catalog. The policies and procedures set forth in this document supplement, but do not supersede, the policies and procedures in the University Graduate Catalog.

Lawrence Technological University is an equal opportunity/affirmative action institution and is committed to a policy of nondiscrimination and equal opportunity in all its operations, employment opportunities, educational programs, and related activities. This policy embraces all persons regardless of race, color, sex, national origin, religion, age, sexual orientation, marital status, or handicap and expressly forbids sexual harassment and discrimination.

This publication is for informational purposes and is neither a contract nor an offer to contract. The University reserves the right to change any provision or requirement at any time without notice.

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### **Appeal Procedure for Denial of Admission**

Responsibility for denial of admission of an applicant to a graduate program resides with the Program Director and the program's Admission Committee. An applicant seeking an appeal must do so within four weeks of the date of the denial letter and make such request in writing to the Program Director. The appeal must be based on new information not included in the original application or on extenuating circumstances not known to the Program Director or the Admissions Committee at the time of the initial decision. The Program Director will convene the Mechanical Engineering Department Graduate Council to review the appeal and make a recommendation. Within two weeks of receipt of the written appeal, the Mechanical Engineering Graduate Council will submit a recommendation to the Program Director and the College of Engineering Dean either to admit the applicant or to sustain the original denial. The Dean shall review the recommendation and notify the student in writing of the final decision within 10 working days of the Mechanical Engineering Graduate Council recommendation. If necessary, both the Dean and the Program Director will meet with the applicant to explain and review the final decision. The decision of the Mechanical Engineering Graduate Council is final.

### **Academic Conduct**

All members of the academic community at Lawrence Technological University are expected to practice and uphold standards of academic integrity and honesty. Academic integrity means representing oneself and one's work honestly. Misrepresentation is cheating since it means students are claiming credit for ideas or work not actually theirs and are thereby seeking a grade that is not actually earned. Some examples of academic dishonesty include:

1. Cheating on examinations.
2. Plagiarizing the work of others.
3. Cheating on lab reports by falsifying data or submitting data not based on the student's own work.
4. Falsifying records or providing misinformation regarding one's credentials.
5. Unauthorized collaboration on computer assignments and unauthorized access to and use of computer programs, including modifying computer files created by others and representing them as one's own.

Students are expected to maintain the following standards in the context of academic conduct:

1. To be aware of and practice the standards of honest scholarship
2. To follow faculty instructions regarding exams and assignments to avoid inadvertent misrepresentation of work
3. To be certain that special rules regarding documentation of term papers, examination procedures, use of computer-based information and programs, etc., are clearly understood
4. To avoid the appearance of cheating

All incidences of academic misconduct should be reported to the Department Chair and the Program Director, who will forward the matter to the College of Engineering Dean. The Dean will review the case and turn it over to the Mechanical Engineering Graduate Council.

If the Mechanical Engineering Graduate Council determines that academic misconduct has occurred, the Council can assess penalties ranging from academic disciplinary reprimand, to academic probation, to suspension or expulsion (dismissal) from the university.

### **Appeal of Grade**

Students desiring to appeal a grade should first contact the instructor who issued the grade. If satisfaction is not received, the student may further appeal, in turn, to the Program Director, the Department Chair, and finally, to the Mechanical Engineering Graduate Council, whose decision is final. Any disputes concerning grades must be resolved within one semester after the course was completed.

### **Academic Probation**

Students who are not making satisfactory progress in their programs, as determined by their advisor and the Program Director, may be placed in probationary status with conditions imposed for retention in the program.

### **Dismissal for Academic Performance**

A student must formally request reconsideration from the Program Director and the Department Chair within one month of notice of dismissal, with such request being submitted in writing and including the basis for the appeal, e.g., new supporting information and/or reference to violations of university procedures. Within two weeks of receipt of the written appeal, the Program Director and the Department Chair must submit to the Mechanical Engineering Graduate Council a recommendation either to reinstate the student to the program (with or without conditions imposed) or to uphold the original dismissal. The College of Engineering Dean shall review the recommendation and notify the student in writing of the decision within 10 working days of the Mechanical Engineering Graduate Council recommendation.

If the original dismissal is sustained, the student may submit a written request for an

appointment with the Mechanical Engineering Graduate Council to discuss the decision. After the meeting with the Mechanical Engineering Graduate Council, the student may submit a written request to the College of Engineering Dean to refer the matter to the Provost for a second review. The Dean shall forward such a referral within 10 working days. A recommendation either to sustain the denial or to reinstate the student (with or without conditions imposed) shall be forwarded to the Provost. The Provost may accept or reject the Mechanical Engineering Graduate Council recommendation and a letter notifying the student of the Provost's decision shall be forwarded to the student within five working days of receipt of the committee recommendation. The decision of the Provost is final.

### **Grades**

To qualify for a graduate degree, a student must have an overall grade point average of at least 3.00 for all courses taken at Lawrence Technological University as a graduate student. A student can graduate with his/her graduate degree with at most two grades below a B-, provided he/she has an overall grade point average of at least 3.00 for all graduate courses take at Lawrence Technological University.

### **Repeating Courses**

With the permission of the Program Director, all graduate students may repeat a graduate level course in which a grade "B-" or lower has been earned. Not more than two graduate courses may be repeated during the student's study at Lawrence Technological University. The student must file a Petition of Exception form to the Program Director prior to registration. In addition, the student must file a Repeat Course Form at the time of registration for a course previously taken. Filing of this form is the responsibility of the

student and will ensure that proper adjustments to degree credits are made. Refer to the University Graduate Catalog regarding grade recalculation. Students will not receive University financial aid for repetition of courses.

### **Inactive Status and Readmission**

Lawrence Technological University classifies inactive students into two categories that require reapplication or readmission. The categories are as follows:

1. Students who have been admitted to a graduate program and have completed course work but subsequently have not enrolled at Lawrence Technological University for a period of two years must apply for readmission and pay the readmission fee. Readmission is not automatic. The appropriate admissions committee will review the readmission request. Each request is evaluated in terms of the time limit for completing degree requirements (see section on Time Limits), performance in course work and progress toward the degree. Students will not be readmitted to programs that have been suspended or discontinued. The catalog current at the time a student is readmitted will govern program requirements, policies and procedures.
2. Students who have not registered for a Lawrence Technological University graduate course for five years are considered inactive and must reapply for admission as though they were applying to the program for the first time.

### **Residency Requirements**

#### *Master Degrees*

Transfer students from other universities must stay and take courses at Lawrence

Technological University for at least two semesters before graduating with their degree.

### *Doctoral Degrees*

All doctoral students are required to register for at least three credits of course work every fall and spring semester after their admission to a program. In cases where the student has completed all of the formal course work for the degree, the student may register for dissertation research. DEMS students are allowed to register for six dissertation credits before preparing their proposal. In addition, all DEMS students must have full-time student status (register for at least 6 credits) in their last semester (semester in which they will be defending their dissertation).

### **Time Limits**

In general, time limits are program specific. Therefore, students should consult with the Program Director for the specific time limits of their program. Currently, DEMS students with a Masters Degree have a four-year time limit to complete all requirements for their Doctoral degree. The time limit is seven years for those DEMS students who were admitted with a Bachelors Degree. The clock starts on the first day of the semester in which student takes his/her first class at Lawrence Technological University. Extensions on the time limit policies may be made for extenuating circumstances. All students wishing to request an extension should submit a Petition of Exception form to the Program Director with sufficient justification as to why an extension is necessary.

## **GUIDELINES FOR ENGINEERING GRADUATE RESEARCH**

### **Objective of Engineering Graduate Research**

The objective of Engineering Graduate Research is the education of engineers who will be able to provide the bulk of new knowledge. Graduate research is the principal instrument through which these engineers develop the skills necessary to work independently to solve new and original technical problems.

The preparation of the thesis and dissertation is the most common type of graduate research. Research done while assisting in sponsored projects, research done in connection with seminars, directed studies, special problems and many others can also furnish very significant educational opportunities. Graduate research is learning by active participation. It provides the opportunity of placing students and faculty in real problem solving situations. Students and faculty form research teams focused on problems whose importance, depth, and uncertainty of outcome are real. The triumphs and failures of such teams provide all participants, and in particular the student, with unique applied educational experiences.

### **Rights and Responsibilities**

The Doctoral dissertation committee is composed of the academic advisor(s), industrial advisor, and two more members, one of whom is from another college. For the formation of the Master's thesis committee, refer to the University Graduate Catalog.

Collaboration between the student, advisors and the rest of the committee members is essential to the success of the research program. The following section outlines the rights and responsibilities of each member of the research team.

## Student

### Responsibilities

- To take the initiative in selecting a research topic and the advisors
- To prepare the research proposal
- To conduct the literature search required
- To perform original research and pursue it with diligence
- To keep the advisors and the rest of the committee members informed of the development of the research, its progress and future plans
- To be open to suggestions from the advisors and other members of the committee
- To do all the writing required for the thesis or dissertation in accordance to the format determined by the Mechanical Engineering Department
- To utilize available resources at LTU and industry wisely

### Rights

- To conduct original research
- To have access to the advisors and other committee members on a reasonable schedule
- To obtain professional advice from the advisors and members of the committee whenever needed
- To have feedback and comments on the progress report in a reasonable time
- To obtain assistance in selecting the research committee
- To have reasonable resources committed to the approved project
- To have disclosed to him/her in advance the expectations and the efforts required for achieving the research objectives
- To a relationship built on a mutual respect with all members of the committee

## **Advisors**

### **Responsibilities**

- To advise students only in his/her area of expertise
- In order to avoid a conflict of interest, advisors and committee members will not collect any external consulting fees for advising students.
- To assist the student, Program Director and Department Chair in selecting the appropriate research committee
- To ensure that the student works independently to conduct original research
- To help keep the student focused and on course
- To assist the student with arrangements for needed resources
- To offer the student advice and support

### **Rights**

- To be kept informed of the progress and plans of the research project
- To have his/her comments and suggestions taken into consideration
- To have a reasonable amount of time to review and evaluate the materials
- To have a free access to all information generated by the research project
- Not to be subjected to excessive time consuming demands
- To advise up to four students in any given semester (DEMS program)

## **Research Committee Members**

### **Responsibilities**

- To insure that the research is original
- To give reasonable and valuable contribution to the research project

- To review research materials professionally and return them to student with comments promptly
- To be available for consultation whenever reasonably needed by the student
- To encourage the independence of work and creativity of the student

### **Rights**

- To express freely their concerns about the originality and contribution of the research
- To be kept informed of the progress of the research throughout the study
- To be given ample time for reviewing and evaluating the materials

### **Selection of Advisors and Research Topic**

It is important to consider the suitability of a research topic, the interest, capabilities and expertise of the advisors and other members of the research committee to contribute valuable information to the success of the research. A reasonable way of gathering such evidence may be outlined as follows:

A. The student should first select a specific research area rather than a topic. He/she should give a serious consideration to:

- His or her interest in the area
- His or her confidence and willingness to pursue the project
- Specific research needs funded by his/her company or college
- Areas of faculty expertise

B. The student should conduct a search to explore the selected area in order to determine:

- The current state of the art in the research area
  - A small set of topics in the area that seems to be suitable for research
- C. The student should conduct some preliminary research in one of the selected topics
- D. The student should maintain sufficiently organized materials to be presented for preliminary discussion and evaluation with the advisors and other members of the research committee.

### **Preparing the Research Proposal and Approval of Thesis/Dissertation Topic**

The preparation of a proposal provides a realistic research experience for the student and an opportunity for systematic planning. The purpose of a proposal is two-fold:

1. It ensures that the student in collaboration with faculty members has investigated a problem area and determined its suitability for research.
2. It provides a formal memorandum of understanding between the student and the research committee of the work that the student will perform.

The proposal is prepared by the student and generally includes the following elements:

- Topic or title of the research
- Background, including a review of the literature of the general problem area.
- Statement of the problem and the objective of the research
- Approach that will be taken to solve the problem
- Resources needed and associated costs to solve the problem
- Expected results of the project (action plan and deliverables)
- Importance of expected results
- Estimated time required for completion of the project and tentative time

schedule for achieving the results.

- References

After a student has selected an Advisor and the research area, the Advisor coordinates approval with the Program Director on a committee formation to be approved by the Department Chair and the College of Engineering Dean. A form for request of approval of thesis/dissertation topic and committee must be filled out and sent to the Program Director who will coordinate the approval with the Department Chair and the College of Engineering Dean. The purpose of this review is to ensure that the student is working with a group of advisors who are well qualified to advise him/her on the topic selected and to insure that the research will lead to satisfactory results. The thesis/dissertation topic and committee are officially assigned to the student upon the Dean's approval. If there are subsequent modifications of the research topic or the formation of the committee, a new form for request of approval must be filled out and sent to the Dean for his review and approval. The committee will be composed of members of the College of Engineering faculty who are qualified to serve in that capacity. For the DEMS program, external examiners will be invited to participate. For such an examiner, a resume and biographical sketch must be submitted to the Program Director, Department Chair and College of Engineering Dean for their approval.

### **Conducting the Research**

It is advisable that in planning the tentative research schedule, students should take into consideration the fact that some unforeseen research problems may arise that cannot be handled within a very tight schedule. Working engineers should also consider the time

needed by their job, such as travel-time, and other related job assignments. The amount of supervision and guidance that will be involved in pursuing the research will be determined by the time spent by the student on the project and the degree of interaction with the advisors and rest of the committee. The complexity of the problems and availability of resources are also crucial factors that need to be given consideration. The advisors should maintain some general surveillance of the progress of the research project without dictating to the student what he/she is to do and how to do it.

### **Writing the Thesis or Dissertation**

The styles of the thesis/dissertation are determined by the specific topic of research. The thesis/dissertation is an attempt to communicate and present the results of the research. If the attempt fails, the research project fails. The planning of the project, collecting data, writing the draft and the actual writing of a thesis/dissertation are essential steps of the research that must be conducted from the very beginning of the project. An early approach to the writing of the thesis/dissertation or thesis assists the student in focusing his/her thoughts on the research problem, on the intended readers of the thesis/dissertation, and on how to write lucidly about the problem. Ample time must be scheduled throughout the research project for writing and rewriting in-order to meet the thesis/dissertation requirements.

The thesis/dissertation should start in parallel with the research project so that immediately after the first results are achieved there will be a first draft that the student can present to the advisors for the suggestions and comments. Advisors have primary responsibility for approval of the thesis/dissertation, but all committee members must read, approve, and sign the manuscript. Such approval includes all academic and professional evaluations and judgments as to originality, adequacy, accuracy, significance,

methodology, conclusions, and correctness of style.

Candidates are instructed to closely follow the Mechanical Engineering regulations governing the format of the thesis/dissertation. It is official policy that acceptance of the thesis/dissertation as well as certification of the degree shall not take place unless a manuscript is correct in style and is in a format suitable for publication. The final draft of the manuscript, having been approved by the advisors, should be submitted to the Program Director by at least four weeks prior to the Dissertation Public Defense or by the deadline date listed for the current semester. Corrections will be provided on a comment sheet attached to the manuscript that must be made before the thesis/dissertation may be approved.

### **Miscellaneous Problems**

1. **Changing the Topic, Advisor or a member of the Committee.** In some situations there is a need to change the topic or a member of the advisory committee. In some cases, a modification of topic can be achieved with the same Advisor and committee. In others, a change may be required. The responsibility for handling changes in the advisory committee rests with the Program Director, who will coordinate the matter with the Department Chair and the College of Engineering Dean. In case of a change of committee or topic, the student will have to resubmit a request for approval of topic and committee to the College of Engineering Dean.
2. **The Advisor or committee members on leave.** It is common that graduate students may face a situation where the Advisor or a committee member has to retire, resign, go on a sick leave or take a leave of absence. In the case where a member of the committee must leave the committee, the Advisor, in agreement with the student,

should replace that member with another one. In case the Principal Advisor is no longer available to work with the student, it is the responsibility of the Program Director, Department Chair and the College of Engineering Dean, in agreement with the student, to find a suitable replacement. If a suitable replacement cannot be found, the student may, unfortunately, have to select another thesis/dissertation topic.

3. **Off-Campus Research.** It is the responsibility of the student to make arrangements for all off-campus research. Students who intend to conduct their research at facilities other than those at Lawrence Technological University should provide the Advisor with a letter of approval from his/her host company expressing their approval of the project. The letter should indicate the level of support the company is willing to provide to the student to complete the project. The student should make arrangements so that the Industrial Advisor and any equipment or space is available when needed.

### **Thesis/Dissertation Approval**

When all members of the committee have tentatively approved the thesis/dissertation, the candidate prepares the Final Report and Public Defense Form. After the form has been signed by all committee members, indicating approval of the content of the thesis/dissertation for a public lecture presentation defense, the candidate brings the form, along with the final draft of the manuscript, to the Program Director at least four weeks in advance of the defense date. The Program Director will arrange a date for the defense that is satisfactory to the student, advisors and the committee members.

### **Public Defense**

The defense is conducted by the candidate's committee and presided over by the

Program Director and the Department Chair. The defense will be publicized and is open to the public. The student should submit a "Petition to Graduate Form" to the Registrar within the first two weeks of the semester in which they will be defending their thesis or dissertation. In the defense, the candidate formally presents the methodology, research, and results of the investigation. In the discussion following the lecture presentation, other matters, which the committee deems relevant, may be introduced. When a candidate has completed the thesis/dissertation and passed the defense he/she must, within two weeks after the defense:

1. Receive approval of the manuscript from the Program Director
2. Submit a diskette or CD of the thesis/dissertation (in Adobe PDF read-only format) and one paper copy of the dissertation to the Program Director
3. Submit the Thesis/Dissertation Agreement Form. This form must be completed and signed on the back. If you are copyrighting the dissertation, please check "yes" on the front of the form, and sign the copyright section on the back too. Staple one copy of your title page and abstract to the Agreement form.
4. Submit the Commencement Reply Form to the Registrar.

These are requirements - they must be completed in order that the candidate receives his/her degree.

**Lawrence Technological University**



**College of Engineering**

**Mechanical Engineering Department**

**Request for Approval of Thesis/Dissertation Topic and Committee**

Date: \_\_\_\_\_

Name: \_\_\_\_\_  
          Last                                  Middle                                  First

Requests Approval to prepare and present a:

\_\_\_\_\_ Thesis                  \_\_\_\_\_ Dissertation

In partial fulfillment of the requirement for the degree of:

\_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_

Brief Description: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Approved: \_\_\_\_\_ College of Engineering Dean

\_\_\_\_\_ Department Chair

\_\_\_\_\_ Program Director

\_\_\_\_\_ Principal Advisor

\_\_\_\_\_ Committee Member

\_\_\_\_\_ Committee Member

\_\_\_\_\_ Industrial Advisor (DEMS)