

# **Manufacturing Engineering Graduate Student Handbook**

**2024-2025**  
Academic School Year

**Brigham Young University**

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## INTRODUCTION

This student handbook is a summary of policies and procedures that MS candidates are expected to know and follow while pursuing a graduate degree in the Department of Manufacturing Engineering.

However, it does not cover every conceivable situation. Students are encouraged to be proactive and discuss any potential problems, concerns, or special circumstances with their Graduate Committee Chair (Advisor), the Graduate Program Manager, or the Graduate Coordinator.

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## LEARNING OUTCOMES FOR MASTER'S PROGRAM

MS Graduates from the Department of Manufacturing Engineering will:

1. Creative and Analytical Thinking
  - a. Demonstrate creative and analytical thinking skills that provide a basis for problem solving within their area of emphasis.
2. Leadership, Teamwork, Management and Professionalism
  - a. Demonstrate an understanding of the elements of leadership, teamwork, management, and professionalism.
3. Ethical and Moral Standards
  - a. Demonstrate a pattern of living consistent with high ethical and moral standards.
4. Safety Skills
  - a. Exhibit safety skills relevant to the discipline
5. Productive Interaction
  - a. Interact productively with people from diverse backgrounds as both leaders/mentors and team members and with integrity and professionalism
6. Communication Skills

- a. Exhibit communication skills verbally and in writing
7. Understanding Sub-disciplines
  - a. Understand sub-discipline at levels clearly exceeding undergraduate expectations.
8. Conducting Research
  - a. Conduct research under advisor supervision while making personal contributions.
9. Publishing
  - a. Publish contributions to their area of study

## FIRST-YEAR STUDENT REQUIREMENTS

In addition to completing the following requirements, ***first year students must also meet minimum registration requirements, receive biannual evaluations, and begin researching and writing their thesis*** as described in the Continuing MS Student section of this handbook.

## NEW STUDENT ORIENTATION

At the beginning of Fall and Winter semesters, the Department of Manufacturing Engineering offers an orientation to help new students familiarize themselves with graduate program requirements. Students are required to attend. If a student cannot attend, he/she should contact the graduate program manager.

## ATTEND SEMINAR

The MFGEN Department Graduate Seminar Series is held during fall and winter semesters only. All graduate students are required to attend 8 seminars from this series each semester for two semesters, ideally during the first year of their graduate program. A maximum of 2 seminars each semester may be substituted from:

- The Weidman Center Leadership Seminar Series
- The College Lecture Series
- Graduate Seminars within the Colleges of Engineering, Physical and Mathematical Science, and Life Sciences
- Engineering MS or PhD candidate's thesis or dissertation defense.

## PROGRAM OF STUDY

### Submit Program of Study

It is important for students to submit a Program of Study. In consultation with their graduate committee chair (advisor), students will identify a proper course of study that supports their specific interests and lead to a timely graduation. The Program of Study is submitted on the Graduate Progress website <https://gradprogress.sim.byu.edu/>.

Failure to submit a Program of Study by the program deadline will result in an unfavorable biannual evaluation.

- MS Program: Program of Study is due the student's first semester

### Program of Study Requirements

#### Graduate Committee Selection

The graduate committee chair (advisor) will be selected from the Department of Manufacturing Engineering with the exception of students enrolled in Interdisciplinary Graduate Studies.

Students should work with their graduate committee chair (advisor) in selecting other members of the graduate committee. All graduate committee members should have Graduate Faculty Status. In addition, graduate committee members should have a background that will be helpful in contributing to or evaluating the student's research. All graduate committee members will assist in advising the student concerning course work, degree requirements, and research.

MS Program: 2 additional committee members must be identified (with the majority from the MFGEN Department)

On occasion, it may be desirable to include a professional who may not be on faculty at BYU, i.e., someone who has documented substantial and consequential research effort in a specific area. Such graduate committee members are approved through petition or are unofficial members of the committee in addition to the required committee members.

The Graduate Committee must be set and approved before the Program of Study can be submitted.

Changes to the Graduate Committee can be requested in Grad Progress up to a point. If there is no longer an option to change committee members, contact the Graduate Program Manager to facilitate the change.

## MS Program Coursework

A total of 30 hours is required to complete the degree.

- 24 credit hours of coursework, 12 credit hours must be Manufacturing Engineering coursework (See [Policies and Procedures: Approved Courses for Program of Study](#)).
- 6 credit hours of thesis research (MFGEN 699R).

Students must have a 3.0 GPA on their program of study courses. In no instance is D credit accepted.

### Program of Study Changes

Students may change their Program of Study courses on the Graduate Progress website <https://gradprogress.sim.byu.edu/>.

***Changes may be submitted at any time during a student's graduate program. All coursework must be approved by the student's graduate committee and the graduate coordinator BEFORE the student takes a course.***

Once the student has submitted their Program of Study and obtained graduate committee members' approvals, he/she should follow up with the graduate program manager for final approval. The graduate program manager will review the request and grant the final approval.

## SUBMIT THESIS PROSPECTUS

The prospectus must be submitted by the end of the second semester. For a prospectus outline, contact the graduate program manager. Upon completing the prospectus, students will be granted post-prospectus status and receive an accompanying pay-raise, if applicable.

The purpose of the prospectus is the following:

- To define the scope of the thesis project.
- Establish the minimum requirements for completion of the thesis and helps prevent the student from undertaking an unrealistic project.
- When written early in the program, the prospectus provides focus that will help expedite completion of the thesis.

When the prospectus is complete, the student will upload a copy of their prospectus on the Grad Progress website <https://gradprogress.sim.byu.edu/> and request approval from their committee.

Failure to submit a prospectus by the end of the second semester will result in an unfavorable biannual evaluation. In addition, if the prospectus is not submitted on a timely basis, funding may be temporarily withheld. A prospectus defense may be held at the request of the graduate committee.

## CONTINUING STUDENTS

### MEET REGISTRATION REQUIREMENTS

#### Domestic Students

To maintain graduate student status, domestic students should meet the following *minimum* requirements. Please note, these are only minimum requirements. If you have deferred student loans, current student loans, or grant funding, etc. please check the enrollment requirements.

1. Register for a *minimum* of 2 credit hours in the semester or term of their admission.
2. Following the semester of admission, students must continue to register for a *minimum* of 2 credits per semester if employed on campus. Students must carry either a combined total of 1 credit Spring and Summer, or a minimum of 2 for the following Fall semester.
3. Complete a *minimum* of six credit hours in an academic year. If a student fails to complete a minimum of six credit hours in an academic year, he/she will be dropped from their graduate program. **NOTE:** Credit hours will not count towards the six-credit hour minimum if a student receives a D grade or withdraws.
4. Distribute research credit hours (MFGEN 699R) reasonably throughout the graduate program, concurrent with the research being conducted.
5. Students graduating must register for 2 credits in the semester/term that they are defending their thesis and/or during the semester they are graduating.
  - If a student defends a thesis in a semester/term different than the semester/term in which he/she is graduating, the student must register for 2 thesis credits in the semester/term of the defense AND 2 credits in the semester/term of graduation though the credits in the final semester/term do not have to be thesis credits.
  - Spring defenses require only 1 thesis credit.



6. Fulfill residency requirement. The student must be registered for a minimum of 6 credit hours for two consecutive semesters while living and conducting research in the general vicinity of the university, where the student has access to research facilities.
7. Complete all requirements within the graduate program's time limit.
  - MS Program: 5 years

### **International Students**

International students must register for 9 credit hours in the semester of their admission (Fall or Winter). Beginning Spring/Summer term is not recommended as graduate level coursework is not offered during these terms. However, if a student desires to begin Spring/Summer, he/she should discuss the option with their graduate committee chair (advisor) and the graduate program manager.

International students should continue to register for 9 credit hours each semester of enrollment (except for approved University breaks). All credit hours must count towards the student's Program of Study. Students in their final semester may submit a Last Semester Option request.

## **BIANNUAL EVALUATIONS**

The progress of graduate students is evaluated twice each year (January and May). The student's graduate committee chair rates each student as making satisfactory, marginal, or unsatisfactory progress. When determining this rating, the graduate committee chair may choose to consult with other members of the student's graduate committee.

If a student receives a marginal or unsatisfactory rating and has not improved his or her performance in accordance with the actions outlined on a previous evaluation, by the time of the next evaluation, the University will terminate the student from his/her graduate program.

The graduate committee chair reports the student's progress to the graduate program manager. Students whose progress is rated as marginal or unsatisfactory will receive notification to meet with the graduate program manager and sign the evaluation.

In addition, students whose progress is rated as marginal or unsatisfactory should meet with his/her graduate committee chair to discuss the evaluation. The marginal or unsatisfactory evaluation given to a student will include:

- Specific tasks the student must complete in order to maintain or regain a satisfactory rating
- Clear deadlines established for each of the specified tasks

- A recommendation of faculty member(s) they can contact for more information or support

Marginal progress may include the following:

- Failure to submit a Program of Study and establish a graduate committee by the end of first semester
- Failure to submit a prospectus by the end of second semester
- Poor performance in research or registering for thesis hours when little or no work has been performed
- Minimal contact with the graduate committee chair

Unsatisfactory progress may include the following:

- Failure to submit a Program of Study since prior evaluation
- Failure to submit a prospectus since prior evaluation
- Failure to resolve any problems or fulfill any requirements indicated in a previous marginal or unsatisfactory evaluation
- Minimal or no contact with the graduate committee chair
- Poor performance in research or registering for thesis hours when little or no work has been performed
- Program of Study GPA below 3.0 or Program of Study course grade below 2.0
- Unacceptable ethical or professional behavior
- Failure to complete acceptance provisions

The biannual evaluation is used by the department to satisfy criteria for continuing funding. It is also used by the BYU Financial Aid Department to determine eligibility for financial aid.

*Students who feel their rating is in error may file an academic grievance, see Policies and Procedures: Graduate Student Academic Grievance Policy.*

<https://gradstudies.byu.edu>

## **COMPLETE RESEARCH AND WRITE THESIS**

While researching and writing their thesis, students should distribute research credit hours (MFGEN 699R) reasonably throughout the graduate program, concurrent with the research being conducted.

Students must follow university/college thesis guidelines when formatting their document. It is the student's responsibility to make sure the proper formatting guidelines have been followed. Templates and format guidelines can be found online at <https://engineering.byu.edu/thesis-dissertation-guidelines>.

***Students should plan on submitting the best draft of their thesis to their***

***graduate committee advisor prior to submitting it to the remainder of their graduate committee.***

All work toward the thesis should be open for public review and publication. Any exceptions must have written approval from the department and college in advance of any work performed. It is possible to delay release of a thesis for up to one year for publication purposes. For patent purposes students may request the thesis be secured, as part of the ETD submission process.

## GRADUATION

For specific university graduation deadlines, visit <http://gradstudies.byu.edu/page/graduation>

## APPLY FOR GRADUATION

Students cannot schedule a thesis defense until he/she has applied for graduation. Students must apply before the graduation application deadline. The application for graduation can be accessed online at the left side of the screen in the “Tools” area of [Grad Progress](#). There is a link to the graduate progress report and one to apply for graduation.

In order to apply students must have:

- a. A current ecclesiastical endorsement. Endorsements must be renewed every academic year (Fall semester).
- b. Completed all course work or are currently taking remaining courses.
- c. Completed the Program of Study, Prospectus, and Seminar requirements.
- d. Received verbal permission from the graduate committee chair.

***After applying for graduation, students should meet with the graduate program manager to discuss next steps toward graduation.***

## SCHEDULE THESIS DEFENSE

### Schedule Defense

***Students should plan on submitting their best draft of the dissertation to their Graduate committee chair two weeks prior to their defense.*** Students should consult with their graduate committees to determine the time and date. For defense deadlines see <https://mfgen.byu.edu/graduate-program>.

To schedule a defense, a student must schedule his/her defense on [www.gradprogress.sim.byu.edu](http://www.gradprogress.sim.byu.edu) 24 hours before the exam date. Before scheduling a defense, students will request approval on [Grad Progress](#) from their advisor and graduate committee members. These approvals certify that the student and the thesis/dissertation are ready for the oral exam or defense.

Defending between semesters/terms and on holidays is not permitted.

## Initial Copy of Thesis

Students need to provide the graduate program manager with an electronic copy of the thesis as a Word or LaTeX file for a preliminary format review.

## DEFEND THESIS

At the defense, members of the graduate committee will serve as the examining graduate committee. Spouses, parents, and friends are welcome to attend the oral examination; small children should not attend. Refreshments are neither required nor expected.

The examination always follows a set format:

- The student's research is presented.
- The general audience is excused.
- Questions are asked by graduate committee members.
- The decision (pass, pass with qualifications, recess or fail) is announced.

The presentation should cover main points. For **MS students** the presentation should last about 30 minutes. Consideration should be given to the following expectations:

1. A well thought-out, well-organized, cogent summary of the student's work including:
  - a. An explanation of how the current work relates to the student's discipline
  - b. The rationale behind the project in the context of available literature
  - c. If the student has been part of a research team or lab, an explanation of the student's intellectual contribution to the project and a description of how the student's work fits into the broader research conducted in this lab
  - d. The questions or issues the current work was designed to address
  - e. The way the design, method, and/or approach addressed those questions
  - f. The analysis of data gathered
  - g. The results, outcomes, final products, or performance
2. An interpretation of results, findings, contributions, insights, and conclusions

and their significance. What does this work add to existing knowledge?

3. A discussion of implications the work suggests for future research or creative endeavor
4. A discussion of any applied or clinical implications suggested by the work
5. Thoughtful, well-founded responses to all questions the graduate committee members might ask

At the defense, it is likely that the graduate committee will request revisions of the thesis/dissertation. Students should discuss the revisions with graduate committee members and do their best to comply with the requests before graduation deadlines.

## FINALIZE THESIS

### Submit Revised Thesis

After revisions to the thesis have been approved by graduate committee members on [Grad Progress](#), students should email a Word or LaTeX copy of the thesis to the graduate program manager [mfgengrad@byu.edu](mailto:mfgengrad@byu.edu) who will do a final review of formatting. ***The deadline to turn in the final copy to the Graduate Program Manager is 2 weeks and 1 day before the final University deadline.***  
For deadlines: <http://gradstudies.byu.edu/page/graduation>.

### Submit ETD

Once the Word or LaTeX copy has been approved by the Graduate Program Manager, convert the thesis to a PDF for ETD submission. All fonts must be embedded, and all blank pages must be removed from the PDF of the thesis prior to submitting the ETD. Information regarding ETD preparation can be found at the Graduate Studies 'Resources' page. <https://gradprogress.sim.byu.edu/resources>

Submit the ETD on [Grad Progress](#) for preliminary Graduate Studies approval. The ETD will also need to be reviewed and approved by the department graduate program and the college administrative assistant. ***The college office will not be able to process these documents immediately; therefore, students must receive department ETD approval 1 week before the final University deadline.***

The ETD must be approved by the College and in the review queue of Graduate Studies by the end of day on the University deadline.

For deadlines: <http://gradstudies.byu.edu/page/graduation>

## **Upload Thesis for Binding**

After receiving college approval, students may order bound copies of their thesis. Students are responsible for the cost of this bound copy.

All copies may be ordered through [BYU Print and Mail](#).

## **SUBMIT EXIT INTERVIEW**

Students are given an exit interview/survey with the graduate coordinator. Comments are used to further strengthen the graduate program. These comments are kept confidential. The Exit Interview must be completed with the Graduate Program Coordinator and entered by the Graduate Program Manager on the student record by the end of day on the University deadline.

## **LAB SUPERVISOR CLEARANCE**

Before students permanently leave the BYU campus, they must receive clearance from the MFGEN Lab Supervisor.

## **WALK FOR COMMENCEMENT AND CONVOCATION**

Students wishing to walk during Commencement and Convocation will receive an email with cap and gown purchase information. Commencement and Convocation are held in April. Students may walk in commencement and convocation if they are graduating within the academic year. (Fall, Winter, Spring, Summer)

## **GRADUATE RECOGNITION LUNCHEON**

Each April, the Department of Manufacturing Engineering hosts a Graduate Recognition Luncheon. Graduates are invited to attend with one guest free of charge. In addition, graduates may invite other guests for a fee.

## **POLICIES AND PROCEDURES**

## **APPROVED COURSES FOR PROGRAM OF STUDY**

Students may view all graduate courses on the Graduate Studies [courses](#) page.

## Approved Courses

<b>MFGEN</b> <b>CE EN</b> <b>ME EN</b> <b>CHEM</b> <b>CS</b> <b>EC EN</b> <b>MATH</b> <b>PHSCS</b> <b>STAT</b>	Any 500-level course and above	<b>BIO 580</b> <b>MBA 670</b> <b>IT&amp;C 548</b>	Scanning Electron Microscopy Innovation and Entrepreneurship Cyber-Physical Systems
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### Special Topics Course Guidelines

MFGEN 595R – Special Topics in Manufacturing Engineering

This is for courses that are taught at a graduate level and that may or may not receive a permanent number. Graduate and undergraduate students may enroll.

MFGEN 695R – Special Problems for Master’s Students

This is for the rare case when MS students seek credit for approved mentored projects unrelated to their thesis research. This should be seldom used and should be carefully scrutinized by the graduate committee.

IT&C 515R- Special Topics in IT&C

This is for courses that are taught at a graduate level and that may or may not receive a permanent number. Graduate and undergraduate students may enroll.

### 400-Level Courses

Students seeking a master’s degree may not include more than 9 credits of 400-level courses on a Program of Study.

### Prerequisite Courses

Courses outlined as part of a provisional admission should be listed on the Program of Study and should be taken during the first year. However, these courses will not count towards credit hours needed for graduation.

### Senior Credit Courses

Students seeking a master’s degree may apply credit taken during the senior year at BYU toward the degree, but in no instance can this credit apply to both a baccalaureate

and a graduate degree. Senior credit combined cannot exceed 10 credits in a graduate program. Thoroughly qualified undergraduates who are willing and able to meet graduate level standards may enroll in graduate 500-level courses.

### **Unapproved Courses**

Audit courses, online courses, and/or independent study courses are not accepted by Graduate Studies toward a graduate degree.

## **COPY MACHINE POLICY**

The MFGEN department copy machine is not to be used for personal use nor should it be used to copy theses. The copy machine may be used for RA and TA duties; however, students should not use the copy machine themselves. The secretaries will handle students' requests.

## **DISCRIMINATION AND/OR HARASSMENT**

Brigham Young University does not allow unlawful discrimination based on race, gender, color, national origin, religion, age, veteran status, or disability in the academic or employment setting. This includes unlawful sexual harassment, which is a violation of university standards as well as state and federal laws and may be considered grounds for discipline. Persons who believe they have been unlawfully discriminated against or unlawfully sexually harassed should contact:

Equal Opportunity Office  
D-282 ASB  
Provo, UT 84602  
801/422-5895  
[eo\\_manager@byu.edu](mailto:eo_manager@byu.edu)

Further information on BYU's policy on discrimination, reporting avenues, and reconciliation can be found at the Office of Belonging page.

<https://belonging.byu.edu/discrimination-policy>

## **FINANCIAL SUPPORT**

The Department of Manufacturing Engineering offers several opportunities to help qualified students with the cost of their graduate education. The majority of full-time graduate students receive financial support during their studies. Most financial support is in the form of employment such as research assistants and teaching assistants. Scholarships based on academic potential and performance, are also available.



Satisfactory progress in the program is required to maintain eligibility for funding support. Support is also contingent on availability of funds. With the exception of some teaching assistantships, most financial support is generally determined prior to beginning the graduate program.

## **Graduate Assistantships**

### Research Assistantship

Graduate research assistantships are offered by individual faculty to students they advise. Assistantships are based on student research ability, student research performance, and availability of funds. Research assistantships are supported by external research contracts or grants, administered by faculty. Students may check with individual faculty to determine availability of these opportunities.

### Teaching Assistantship

Graduate teaching assistantships are offered by professors who have teaching assistant needs. The department gives first priority to graduate students for teaching assistantships; however, the professor teaching the class has final authority to hire the teaching assistant for the class. Assistantships are based on student teaching ability and teaching performance. Students may check with individual faculty to determine availability of these opportunities.

## **Tuition Scholarships**

Tuition scholarships are available to qualified graduate students based on student performance and availability of funds. The scholarships are awarded by individual faculty and students may check with their graduate committee chair to determine availability.

## FORMATTING GUIDELINES FOR THESIS

Thesis formatting guidelines are found online at the [college website](#).

## GRADUATE ACADEMIC GRIEVANCE POLICY

Despite the well-meaning efforts of students and faculty, there may be occasions when a graduate student feels his/her work has been unfairly or inadequately evaluated. Usually, such differences can be amicably resolved on an informal basis between the student and the faculty member involved. If, for any reason, the faculty member is not available or the student believes that the grievance will not be dealt with fairly or will create the possibility of retribution, the student may direct the grievance to the department chair.

Please contact the graduate program manager for the complete Grievance Policy.

## HONOR CODE

Complete information concerning the Honor Code at Brigham Young University can be found at: <http://honorcode.byu.edu>. All who represent BYU are to maintain the highest standards of honor, integrity, morality, and consideration of others in personal behavior. As a matter of personal commitment, faculty, administration, staff, and students of BYU seek to demonstrate in daily living on and off campus, those moral virtues encompassed in the gospel of Jesus Christ. BYU students should seek to be totally honest in their dealings with others. They should complete their own work and be evaluated based upon that work. They should avoid academic dishonesty and misconduct in all its forms, including but not limited to plagiarism, fabrication or falsification, cheating or other academic misconduct.

### **Plagiarism**

Intentional plagiarism is a form of intellectual theft that violates widely recognized principles of academic integrity as well as the Honor Code. Such plagiarism may subject the student to disciplinary action administered through the university Honor Code Office. Intentional plagiarism is the deliberate act of representing the words, ideas, or data of another without providing proper attribution to the author through quotation, reference, or footnote.

Inadvertent plagiarism usually results from an ignorant failure to follow established rules for documenting sources or from simply being insufficiently careful in research and writing. Although not a violation of the Honor Code, inadvertent plagiarism can result in academic sanctions being imposed by an instructor. Students who are in

doubt as to whether they are providing proper attribution have the responsibility to consult with their instructor and obtain guidance.

*Examples of plagiarism include:*

*Direct Plagiarism*—verbatim copying of an original source without acknowledging the source.

*Paraphrased Plagiarism*—paraphrasing, without acknowledgment, of ideas from a source that the reader might mistake for your own.

*Plagiarism Mosaic*—borrowing of words, ideas, or data from an original source and blending this original material with one's own without acknowledging the source.

*Insufficient Acknowledgment*—partial or incomplete attribution of words, ideas, or data from an original source

Plagiarism may occur with respect to unpublished as well as published material. Acts of copying another student's work and submitting it as one's own individual work without proper attribution is a serious form of plagiarism.

### **Fabrication or Falsification**

Fabrication or falsification is a form of dishonesty where a student invents or distorts the origin or content of information used as authority. Examples include:

1. Citing a source that does not exist.
2. Attributing to a source ideas and information that are not included in the source.
3. Citing a source for a proposition that it does not support.
4. Citing a source in a bibliography when the source was neither consulted nor cited in the body of the paper.
5. Intentionally distorting the meaning or applicability of data.
6. Inventing data or statistical results to support conclusions.

### **Cheating**

Cheating is a form of dishonesty wherein a student attempts to give the appearance of knowledge or skill that the student has not obtained. Examples include:

1. Copying from another person's work during an examination or while completing an assignment.

2. Allowing someone to copy from you during an examination or while completing an assignment.
3. Using unauthorized materials during an examination or while completing an assignment.
4. Collaborating on an examination or assignment without authorization.
5. Taking an examination or completing an assignment for another person or permitting another person to take an examination or to complete an assignment for you.

### **Other Academic Misconduct**

Academic misconduct includes other academically dishonest, deceitful, or inappropriate acts that are intentionally committed.

Examples of such acts include but are not limited to:

1. Inappropriately providing or receiving information or academic work so as to gain unfair advantage over others.
2. Planning with another to commit any act of academic dishonesty.
3. Attempting to gain an unfair academic advantage for oneself or another by bribery or by any act of offering, giving, receiving, or soliciting anything of value to another for such purpose.
4. Changing or altering grades or other official educational records.
5. Obtaining or providing an un-administered test or answers to an un-administered test.
6. Breaking and entering into a building or office for the purpose of obtaining an unauthorized test.
7. Continuing work on an examination or assignment after the allocated time has elapsed.
8. Submitting the same work for more than one class without disclosure and approval.

## **JOINT MS/MBA PROGRAM**

The Manufacturing Engineering Department and the Marriott School of Management offer a joint program leading to a Master of Science (MS) degree in Manufacturing Engineering and a Master of Business Administration (MBA) degree. The program

provides advanced training in Manufacturing Engineering along with management skills of the MBA program. The degrees are received simultaneously and conferred separately by the two departments. Students must apply to both the Manufacturing Engineering MS program and the MBA program, meeting the requirements of each department and specifying their intention to participate in the joint program in each statement of intent.

The program generally takes about three years to complete; however, some students prefer a four-year program (2 years for each degree) to provide adequate time for the MS thesis research and to increase possibilities of research funding.

Students wanting to finish in three years find it beneficial to start the MS program during spring term. Starting during spring or summer term allows time to begin their thesis research early. To begin research spring or summer term, students should apply for fall semester. Students may also apply for winter semester, if graduated.

Specific requirements are the same as those listed for the Manufacturing Engineering MS degree, with the following guidelines:

- Of the 30 credits required for the MS, 6 credits are for the thesis, and 24 credits are for approved coursework. Half the coursework must be in MFGEN.
- MBA 670, Innovation and Entrepreneurship is required and can be counted on the MFGEN Program of Study. An additional 9 credits from the MFGEN Program of Study can be listed on the MBA Program of Study.
- **The thesis must be completed and defended before beginning the MBA Core classes.** It is difficult to stop research and start it again later. In addition, it may prevent the student from taking advantage of opportunities within the MBA program. To accommodate this requirement, joint MS/MBA students may defend in summer term.

Some credits from the MFGEN Program of Study must be taken concurrently with the MBA program in order to meet university requirements; otherwise, the 12 credits will not count toward both degrees.

## PROSPECTUS PROCEDURES FOR THESIS

For MS students there is a five-7 page limit for the body of the prospectus (problem statement through the anticipated contributions sections).

## PROVISIONAL ADMISSION TO MS PROGRAM

Students with a BS in programs other than Manufacturing Engineering or from a non-ABET accredited program may be admitted provisionally and may need to take some of the following undergraduate courses during their first year. The applicant should

work with the potential graduate committee chair (advisor) to determine exactly which courses will be required. Please note that these courses are prerequisites and will NOT count toward the MS or PhD degrees.

- MFGEN 331 – Metals Processes
- MFGEN 333 – Industrial Automation
- MFGEN 340 – Quality Systems in Manufacturing
- MFGEN 355 – Plastics Materials and Processing
- MFGEN 381 – Lean Manufacturing & System Design
- MFGEN 401 – Data Analysis
- STAT 201 – Statistics for Engineers and Scientists
- MFGEN 433 – Introduction to smart manufacturing
- MFGEN 456 – Introduction to composites
- MFGEN 481 Manufacturing Systems and Simulation
- STAT 462 – Quality Control and Industrial Statistics

## **UNIVERSITY POLICY: TEACHING AND RESEARCH ASSISTANTS**

1. A teaching assistant is a representative of the department and university and is expected to be professional in appearance and in executing his or her duties.
2. When employed as a research assistant or a teaching assistant, continuing students must be registered for two or more hours during fall and winter semesters, and one or more hours in either spring or summer terms. Newly admitted students must be registered for two credits in the first semester or term of admission.
3. Full-time graduate students who are U.S. citizens may either work up to 28 hours a week year-round or work 20 hours during fall and winter semesters and up to 40 hours per week during spring and summer terms and holidays, provided the average hours per week during the ACA measurement period does not exceed 28 hours.

For new part-time employees, the ACA measurement period is the first 12 months of employment. For continuing part-time employees, the measurement period will begin with the first pay period on or after October 15<sup>th</sup> of the current year, through the last pay period before October 14<sup>th</sup> of the following year. Breaks in employment between 4 and 26 weeks will be credited with the average hours worked during the measurement period.

4. Federal regulations will not allow international students to work more than 20 hours per week during fulltime school; however, they may work up to 40 hours during their breaks provided the average hours per week during the

ACA measurement period does not exceed 28 hours. The first break does not occur until after two semesters of fulltime enrollment.

**Note:** In all cases the number of hours worked should be authorized by the graduate committee chair. Because of budget and time constraints the number of hours authorized is often significantly less than the maximum hours outlined above.