

Department of
Mechanical

ENGINEERING



*HANDBOOK
OF
POLICIES AND PROCEDURES*

*Department of Mechanical Engineering
Master of Science in Mechanical Engineering*

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I. INTRODUCTION

This handbook was prepared for the purpose of documenting the policies and procedures that apply to the operation of Villanova University's Department of Mechanical Engineering MSME degree program. It provides information on registration procedures, setting up a plan of study, acceptable scholastic performance, thesis procedures, and other requirements that must be met to receive an MSME degree from Villanova's Department of Mechanical Engineering. It is not intended to replace the Villanova University College of Engineering Graduate Program Catalog or other University or College policies or procedures. This manual is intended to supplement those policies and procedures and outline those requirements specific to the Department of Mechanical Engineering. All policies in this manual are subject to revision by the Mechanical Engineering Graduate Committee.

II. DEGREE PROGRAMS IN MECHANICAL ENGINEERING

Master of Science in Mechanical Engineering

Villanova University awards the Master of Science in Mechanical Engineering (MSME). Students who are admitted to the Master's program may complete either the thesis option or the non-thesis option. The typical completion time for the MSME degree is two years of full-time study, or 3-5 years of part-time study. The degree must be finished within seven years from the time of enrollment in the first class.

Thesis Option

The thesis option requires the completion of an independent research project which must be documented in a publishable thesis. Outstanding performance on a thesis demonstrates the ability to work independently on challenging projects and may offer an advantage when applying for a Ph.D. program. Admission to most Ph.D. programs requires that the student provide evidence of the ability to perform independent research. The thesis option requires 24 credits of course work and six credits of thesis research. The thesis option requires the sponsorship of a full-time tenured or tenure-track faculty member who serves as the thesis advisor. This option is not typically open to part-time students as it requires extensive time spent working in a faculty's member's research group.

Non-Thesis Option

The non-thesis option requires 30 credits of course work. Students completing the Master's degree part-time and/or by distance education typically complete the non-thesis option.

5 year BS/MS Option

Villanova mechanical engineering undergraduates may elect to pursue a 5 year combined BSME/MSME degree program. Students apply into this program in the spring of their junior year. Applicants must have a 3.0 GPA or higher. This program requires that the students take three graduate level classes in the senior year in place of their senior electives. The first graduate course taken is ME 7000 in the fall of the senior year. These three classes will "double count" towards both the BS and MS degree programs. Immediately after graduation students become full-time graduate students. Successful completion of the program within five years requires completion of one summer course the summer after the BSME graduation, three courses in the fall and three in the following spring. Students in the program are requested to refrain from registering for summer course and 5th-year fall courses until after the BSME graduation ceremonies to prevent difficulties in the final senior auditing process. All 5 year BS/MS students will be automatically considered for financial support as described in Section VII of this manual. They will join automatically the regular pool of

graduate applicants applying for financial support. The 5 year BS/MS program is typically a non-thesis option program, although, on rare occasions a thesis is completed. 5 year BS/MS students are subject to all policies documented in this handbook including the policy on “Undergraduates Enrolled in Graduate Classes” (see **section V**). Acceptance into the 5 year BS/MS program is a non-binding acceptance and students may opt to leave the program after completion of their BSME degree.

If a student opts to leave the 5 year program after the BS degree is completed, they have the option to continue as part-time MS students. In this event, up to three graduate courses taken while a Villanova undergraduate will still count toward their MS degree. In fact, this double-count option for up to three graduate courses is open to all Villanova BSME students who wish to pursue a Villanova MSME, per University guidelines. This option is strictly limited to Villanova BSME graduates. Graduate courses taken while an undergraduate at any other college or university are not eligible for transfer if they were part of the undergraduate degree program.

III. STUDENT RESPONSIBILITIES

MSME students are responsible for all the information presented in this handbook. Checklists have been provided in the appendix as a tool to help ensure the requirements documented within this handbook are met on time (**Appendices B, C, D**).

New Students will need to contact various offices on campus in order to acquire the necessary identification, parking, internet, and payroll documentation. Please refer to New *Student Checklist* (**Appendix B**).

IV. ADVISING

Academic Advising

All students are assigned an Academic Advisor when they are admitted to the MSME program. The Academic Advisor assists the student in developing a plan of study, and helps to ensure all departmental rules and regulations are followed. All part-time students and all full-time non-thesis option students are advised by the Graduate Committee Chair.

Those students completing a thesis and employed as a research assistant within the Department of Mechanical Engineering are under the direct supervision of a tenured/tenure-track Mechanical Engineering faculty member who serves as the Academic Advisor and the Thesis Advisor.

Those students completing a thesis and employed as a research assistant for a Villanova College of Engineering faculty member who is not a member of the Mechanical Engineering faculty must be assigned an Academic Advisor from within the Mechanical Engineering department to ensure that all departmental rules and regulations are followed.

Thesis Advising

All students completing the thesis option will be assigned a Thesis Advisor. The Thesis Advisor will establish the research program and oversee all aspects of the student’s thesis work. The Thesis Advisor is responsible for developing an acceptable thesis project for the student and for ensuring that the student files all necessary thesis documentation in a timely manner. The Thesis Advisor must be a tenured or tenure-track faculty member within the Mechanical Engineering department. However, due to the interdisciplinary nature of

research, in certain selected cases, the primary Thesis Advisor may be from outside the Mechanical Engineering department. In these cases, the Thesis Advisor must be a tenured or tenure-track professor within the Villanova College of Engineering. In this case, there must be an Academic Advisor from within the Mechanical Engineering department.

A Thesis Advisory Committee will be established to assist the student in the preparation of the plan of study and to offer advice during the period of graduate work, including research and thesis preparation. The selection of the Thesis Advisory Committee members is done with the recommendation of the Thesis Advisor.

The Thesis Advisory Committee must consist of at least three members: the Thesis Advisor, a second tenured or tenure-track professor from within the Mechanical Engineering Department, and a third tenure/tenure-track professor representing a related area (may be from Mechanical Engineering or from outside Mechanical Engineering). The Thesis Advisory Committee must have at least two Mechanical Engineering faculty members. The Thesis Advisory Committee may be extended to four to meet this requirement if necessary, such as in cases where the primary thesis advisor is from outside Mechanical Engineering.

The Thesis Advisory Committee is formally established by filing the *Appointment of Thesis Advisory Committee* form (**Appendix E**).

V. PLAN OF STUDY (POS)

General

As each MSME degree program is tailored to the individual's needs and interests, a proposed program of study is required for all MSME students to ensure all departmental regulations are met within the planned coursework. This plan of study must be developed in consultation with the Academic Advisor within the first semester of enrollment.

All MSME students must complete the *MSME Plan of Study form (Appendix E)* which details the 30 credits expected to be taken for degree completion. This form must be signed by the Academic Advisor and the Graduate Chair and placed in the student file. The POS includes the specific courses the student is expected to complete. Course names and numbers must be filled in along with the expected semester of enrollment.

Requirements for POS

A thesis option Master's program will contain 24 hours (8 courses) of appropriate course work and 6 hours of thesis research (Thesis I and Thesis II). A non-thesis option will contain 30 hours (10 courses) of appropriate course work. A non-thesis option may include three (3) credit hours from independent study (ME 9000). All Plans of Study must include ME 7000, which is the only required course in the MSME program.

Course work used to satisfy the requirement of one Master's degree cannot be used toward the Plan of Study on another Master's degree. Courses on the Plan of Study may not be taken on a satisfactory/ unsatisfactory basis. All courses (including Thesis I and Thesis II) may only be taken once. The only courses which may be taken more than once are ME 8010 Special Topics, 9080 Thesis Continuation and ME 9087 Graduate Practicum Continuation.

Eligible coursework

Courses eligible for inclusion on the POS include all ME courses with a course number of

7000 or higher. Certain courses with an EGR designation are also considered to be MSME courses. These include only the controls sequence: EGR 8301-8309, the optimization sequence: EGR 8310-8311, EGR 7100 Materials Characterization and EGR 7800 Solar Thermal Energy Conversion. All other EGR 7000 and 8000 level courses are part of the MS in Sustainable Engineering program and are considered to be “out of department classes” and can be considered for inclusion on the POS only per the guidelines on “out of department classes” listed below.

Transfer Courses

A maximum of six credits may be transferred into the Plan of Study from an MSME program at another ABET accredited College or University. Transfer courses placed on the Plan of Study receive the credit, but the grade is not calculated into the GPA. The following rules apply when using transfer courses on the Plan of Study:

1. Transfer courses used on an M.E. Plan of Study must have a grade of B or better.
2. A maximum of six (6) semester hours of graduate course work may be transferred from another institution or degree awarding program. These courses must not have been counted as part of a degree program at any university. Completed courses must have advance approval by the Graduate Committee Chair by utilizing the *Transfer Course Approval form (Appendix E)*.
3. The credit of the transfer course is not recorded on the transcript until the course is listed on the approved POS and the official transcript from the institution has arrived.

Courses External to the Mechanical Engineering Department

Up to six (6) credits from other Villanova College of Engineering departments, Villanova College of Nursing, and/or Villanova College of Liberal Arts Science/Mathematics Departments may be included on the POS with approval of both the Academic Advisor and the Graduate Committee Chair. Any graduate level course included in a Plan of Study must be both quantitative and technical in content. Any transfer credits count against the “out of department” course allotment. An *External Course Approval form (Appendix E)* must be completed and approved prior to registration.

Certain courses in other departments have been found to duplicate material taught in ME 7000 and as such, are not eligible for the MSME POS. These include:

ECE 8001 Engineering Math I
ECE 8002 Engineering Math II
EGR 8000 Engineering Math

Note that a maximum of six (6) credits on the POS are allowed from outside of the Villanova Mechanical Engineering department, whether it be due to transfer from another institution or taken at another department within Villanova. For example, if 3 credits are transferred in from another institution, then a maximum of 3 credits are allowed to be taken at Villanova University from outside the Mechanical Engineering department.

Thesis Credits

All students completing the thesis option must register for 6 credits of thesis research. This is satisfied by Thesis Research I and Thesis Research II. Each of these classes may be taken only once. It is expected that the student will be ready to defend the thesis at the conclusion

of the semester in which Thesis Research II is taken. In certain cases, the thesis may not be completed within this semester and with the approval of the Thesis Advisor, the student may register for Thesis Continuation. All students completing the Thesis option must file two forms: *Application for Approval of Thesis Topic (Appendix E)* and *Appointment of Thesis Advisory Committee (Appendix E)* no later than the end of the first semester of full-time study.

Independent Study

Independent Study is intended to provide an in-depth learning experience for non-thesis option graduate students outside of the normal classroom experience. Students wishing to pursue an Independent Study must identify a willing faculty sponsor, and in conjunction with the sponsor fill out form *ME 9000 Independent Study Proposal (Appendix E)*. This form must be approved by both the Graduate Committee Chair and the Department Chair prior to registration. Independent studies are to be completed within one semester. Only under extenuating circumstances will an extension of no more than one semester be granted. A comprehensive report is due at the completion of the Independent Study for review by the faculty sponsor and the graduate program chair.

Deadlines for Filing the POS

Full-time students are required to submit a Plan of Study before registration for their second semester of full-time graduate study. Part-time students must complete a Plan of Study before completing nine (9) credit hours in the program. Students failing to meet the above requirements will not be permitted to complete their registration for the following semester. The Plan of Study may be modified as needed after it is filed and/or approved. Students must bring a copy or email their POS to their advisor prior to registration each semester.

Changes to the POS

After approval, the courses listed on the POS must be completed before certification for graduation can be granted. Changes to the approved POS may be made as needed. Any changes required in the Plan of Study must be made by mid-term of the semester in which the degree is expected.

Policy on Undergraduates Enrolling in Graduate Classes

Villanova undergraduates may take graduate courses only if they have senior status and a GPA greater than 3.00. Students must fill out a “Permission to take Graduate Course” form, available in the ME main office and get approving signatures.

Villanova undergraduates may enroll in a maximum of two MSME graduate courses in any semester. If an undergraduate student takes a graduate class, that student is limited to taking a maximum of 18 total credit hours in that semester.

Up to nine credits of MSME graduate courses taken by Villanova undergraduates may double count towards both the bachelor’s degree and the master’s degree, whether or not a student is formally enrolled in the five year bachelor’s-master’s program. Any additional MSME graduate courses taken while an undergraduate will count toward the undergraduate requirements and be included in the student’s undergraduate record, but will not be allowed to “transfer” or count toward a subsequent graduate degree. Appeals to this policy may be made directly to the Mechanical Engineering Department Chair provided that the student is already formally accepted into the 5 year combined BSME/MSME degree program.

VI. REGISTRATION

General Registration Regulations

Students must consult their Academic Advisor each semester to choose courses for registration. Consultation via email is acceptable. Students must bring or transmit the POS form and any other necessary forms (such as the External Course Approval form or Transfer Course Approval form) prior to their advising appointment. Students are advised to register well in advance of the first week of classes. After meeting with their Academic Advisor, and receiving approval of their POS, students may register on-line through NOVASIS (www.novasis.villanova.edu) using the PIN provided by their academic advisor. Information on registering online can be found on the College of Engineering website under “Resources for Current Graduate Students.”

Regulations for full-time Enrollment

Full-time study is based on the number of credit hours carried in a given session (semester). Nine credit hours is the full-time certification standard for graduate students. However, students working as teaching or research assistants are considered to be full-time with 6 or more credits. Students may appeal to take more than 9 credits in a semester with approval of the Department Chair. Students finishing a thesis may carry less than 9 credits during semesters focused on research work. Various fellowships and sponsoring agencies may have differing definitions of “full-time” status; students need to verify the requirements with sponsors of their support.

Immigration laws may also have different requirements for international students regarding full-time enrollment throughout the academic year. International students are responsible for verifying their own immigration status and are encouraged to consult with the International Student’s Office (Connelly Center 2nd floor, 610-519-4095).

Registration Timing

Registration for Summer Session and Fall Semester begins after the second week in March, and registration for Spring Semester begins the second week of October. Adding and dropping courses may be done through the end of the first week of class for each semester.

Change in Registration

A change in course registration whether through Drop/Add or through course withdrawal requires the approval of the Academic Advisor. Drop/Add permits changes in registration through the first week of the semester only. Course withdrawal (WX) permits a course to be dropped after the first week of class through the WX deadline (typically 3 weeks after midterms, but it is the student’s responsibility to be aware of all deadlines). Dropping a course after the Drop/Add period will not result in a tuition refund. Students are referred to the Bursar’s office for tuition refund policies. No refunds are given after the fourth week of class even if the student withdraws.

<http://www1.villanova.edu/villanova/finance/bursar/refunds/schedule.html>

VII. FINANCIAL SUPPORT

Types of Financial Support

Financial support opportunities available to students include: Research Assistantships, Graduate Assistantships and Tuition Scholarships. Assistantships and scholarships are competitive awards based on academic merit. Awards are typically offered in March/April

for the Fall semester and in early January for the Spring semester. A more detailed description of each type of support is available below.

Research Assistantships

Research Assistantships (RA) are funded directly by faculty members who hold external research contracts and grants. Research Assistantships typically provide all tuition credits, plus a monthly stipend. Summer pay may or may not be included depending on funding availability. This must be clarified with your faculty sponsor.

These appointments are arranged by direct contact with faculty in your area of interest, and are typically available only to full-time thesis option students. The work completed is expected to lead to a Master's Thesis. Faculty providing Research Assistantships will serve as the student's Academic and Thesis Advisor. The period of support will vary depending on the availability of funds and the student's research and academic performance. Research Assistantships require a minimum of 20 hours per week spent on independent research, and often much more. Duties will vary from week to week depending on research needs. The Thesis Advisor will set the schedule and may require additional work at times to meet certain external deadlines set by funding agencies. The schedule set by the Thesis Advisor is paramount and the Research Assistant must not make any travel plans without clearing them with the Thesis Advisor. Research Assistantships may be made available at any time of year as funds become available. Poor academic or research performance will lead to the termination of the Assistantship.

It is the responsibility of all students with RESEARCH Assistantships to print off their class schedule **each semester**, have it signed by their Thesis Advisor and the funding grant's Principal Investigator and take it to the Office of Research and Sponsored Projects (ORSP) in Middleton Hall. This needs to be done immediately after registering in order to have the tuition benefits provided by the grant assigned to the student. A delay will result in late fees for which the student will be responsible, as well as a possible delay in their payroll.

Graduate Assistantships

Graduate Assistantships (GA) are similar in many ways to Research Assistantships, with the exception that they are provided by the department instead of through individual faculty members' grants. Graduate Assistantships provide tuition plus a stipend during the academic year only. Summer pay is not guaranteed. However, even if not paid, it is expected that students will remain on campus through the summer working on their thesis research as a condition of their academic year stipend and tuition waiver. Summer tuition credits may be offered if a summer course meets a student's POS requirements.

All new full-time applicants for each Fall semester who meet the application deadline in mid-January will automatically be considered for a Graduate Assistantship. The number offered varies from year to year depending on the availability of funds and are awarded on a competitive basis. The period of funding will vary depending on funds available and the student's performance/ progress.

Students receiving GAs are assigned to a supervising professor who becomes the student's Academic and Thesis Advisor. GAs require a minimum of 20 hours per week (and often more) spent on independent research supervised/directed by the Thesis Advisor. Work completed is expected to lead to a Master's Thesis. Duties will vary from week to week depending on research needs. The Thesis Advisor will set the schedule and may require additional work at times to meet certain external deadlines set by funding agencies. The

schedule set by the Thesis Advisor is paramount and the Research Assistant must not make any travel plans without clearing them with the Thesis Advisor.

Poor academic or research performance will lead to termination of the Assistantship.

Tuition Scholarships

Tuition Scholarships (TS) are awarded by the Mechanical Engineering Department. Tuition Scholarships cover academic year tuition, but do not include a stipend. All new full-time applicants for each Fall semester who meet the application deadline in mid-January will automatically be considered for a Tuition Scholarship. The number available varies from year to year and they are awarded on a competitive basis. The period of funding is for one semester at a time and includes the Fall/Spring semesters only. Summer courses are not covered.

Students receiving a TS are assigned as Teaching Assistants or undergraduate laboratory instructors. Students are assigned to individual faculty members who become the work supervisor. Tuition Scholars are expected to work a minimum of 10 hours per week, which may vary depending on course requirements throughout the semester. Duties of Teaching Assistants may include grading, proctoring exams, holding problem sessions, and other course-related work. All TS are required to proctor freshman exams and other exams, and to assist with senior capstone project presentations and any other jobs as requested by the Graduate Chair. Poor academic or research performance will lead to termination of the scholarship.

Fellowship Limitations

Assistantships and scholarships do not cover university fees or provide health insurance. Students are responsible for securing their own health insurance. All foreign students are responsible for ensuring their own immigration/visa status and are encouraged to consult with the International Student's Office (Connelly Center 2nd floor, 610-519-4095) as necessary.

Assistantships and scholarships may not be used to cover the tuition cost of ME 9086 Graduate Practicum which is required for foreign students wishing to work at jobs external to Villanova University. International students may not secure jobs external to the University without the explicit approval of their Academic and/or Thesis Advisor.

Students receiving Assistantships or Scholarships are not permitted to take courses by Distance Learning.

Fellowship Requirements

All students supported under any type of Assistantship or Scholarship are expected to achieve a B or better in all courses, and as appropriate, to maintain progress in the assigned research program. Failure to do so will result in termination of support.

All funded students are **required** to attend all Mechanical Engineering department seminars and are encouraged but not required to attend all Thesis Defenses. Students must regularly check their Villanova email account for notice of these events. A sign-in sheet will be provided at each event.

Office Space

An attempt will be made to provide all funded students with desk/office space. Availability of office space may vary from semester to semester. Students receiving office space are responsible to keep it neat and clean. Failure to do so will result in loss of office privileges.

VIII. ACADEMIC REQUIREMENTS

General Academic Requirements

All graduate students must maintain a grade point average of B (3.00 GPA) or better. Grades of B or higher are expected from graduate students in all classes. The GPA must be above 3.0 to graduate. The GPA calculation for graduate students includes all grades earned in 7000 and 8000 level courses taken while enrolled as a graduate student.

Students must attend all classes. Arriving on campus after the semester has started is not allowed unless the student has received the express written consent of the graduate chair, and all course instructors PRIOR to making any travel plans. If part-time students must miss class due to work travel requirements, it must be cleared with the professor prior to departure.

Semester Grade Review

The Mechanical Engineering Graduate Committee and/or Graduate Committee Chair reviews graduate student performance each semester for all students in the ME graduate program. Should the student fail to perform, in either coursework or research, at a level acceptable to his/ her Thesis Advisory Committee or to the ME Graduate Committee, he or she may be asked to discontinue graduate study at Villanova. The Graduate Committee Chair will send notification letters to those students not maintaining a 3.00 cumulative index and/or failing to make satisfactory progress in their research, and those students will be placed on probation. Unsatisfactory course work and/or research, if continued for a second semester, may lead to dismissal from the Mechanical Engineering Graduate Program.

A student whose cumulative index is below 2.75 after twelve or more credits of course work have been completed will be automatically dropped from the program. Should the student's Thesis Advisor notify the ME Graduate committee of unsatisfactory performance on research, the student may be considered for dismissal at the end of any semester.

Academic Integrity

As a community committed to the Augustinian ideals of truth, unity and love, Villanova University prides itself on maintaining the highest standards of academic integrity and does not tolerate any form of academic dishonesty or misconduct. Dishonesty (**including plagiarism**) in any assignment, test or examination is punishable by the grade of F and is to be reported, through the deans, to the Vice President for Academic Affairs. A second offense will result in the dismissal of the student from Villanova University. Dishonesty or misconduct in research is equally intolerable if not even more so, and may result in the immediate dismissal of the student. All students are required to complete the **Academic Integrity Code (Appendix E)** form and return it to the Mechanical Engineering Department.

The following are some rules and examples regarding academic dishonesty. Since academic dishonesty takes place whenever anyone undermines the academic integrity of the institution or attempts to gain an unfair advantage over others, this list is not and cannot be exhaustive. Academic integrity is not simply a matter of conforming to certain rules; it must be understood in terms of broader academic purposes of a Villanova education.

Cheating:

While taking a test or examination, students shall rely on their own mastery of the subject and not attempt to receive help in any way not explicitly approved by the instructor; for example, members shall not try to use notes, study aids, or another's work. Such cheating includes trying to give or obtain information about a test when the instructor states that it is to be confidential. It also includes trying to take someone else's exam, or trying to have someone else take one's own exam.

Fabrication:

Students shall not falsify, invent, or use in a deliberately misleading way any information, data, or citations in any assignment or research study. This includes making up or changing data or results, or relying on someone else's results, in an experiment or lab assignment. It also includes citing sources that one has not actually used or consulted.

Assisting in or contributing to academic dishonesty:

Students shall not help or attempt to help others to commit an act of academic dishonesty. This includes situations in which one student copies from or uses another student's work; in such situations, both students are likely to be penalized equally severely. Students are responsible for ensuring that their work is not used improperly by others. This does not include team projects where students are told by their instructor to work together.

Plagiarism:

Students shall not rely on or use someone else's words, ideas, data, or arguments without clearly acknowledging the source and extent of the reliance or use. The most common way to acknowledge this reliance or indebtedness is to use footnotes or other documentation. It is the students' responsibility to show clearly when and where they are relying on others - partly because others may wish to learn from the same sources from which the original writer learned. Direct copying of work published in any other source is clearly plagiarism and will not be tolerated.

Multiple submission of work:

Students shall not submit academic work for a class which has been done for another class without the prior approval of the instructor. In any assignment, an instructor is justified in expecting that a new learning will be taking place. Handing in something done previously may preclude this learning. Consequently, if a student hands in work done elsewhere without receiving his or her instructor's approval, he or she will face penalties.

Other forms of Dishonesty:

Acting honestly in an academic setting includes more than just being honest in one's academic assignments; students are expected to be honest in all dealings with the University. Certain kinds of dishonesty, though often associated with academic work, are of a different category than those listed above. These kinds of dishonesty include (but are not limited to) the following:

Misrepresenting oneself or one's circumstances to an instructor (for example, in requesting a makeup exam or a special due date for an assignment, or in explaining an absence). Forging parts of, or signatures on, official documents (including both university documents, such as drop-add slips or excused absence slips, and relevant outside documents, such as doctors' notes), Taking credit for work in a team-project even when the student has made little or no contribution to the work of the team and unlawfully copying computer software.

Dismissals

The ME Graduate Committee will take action to dismiss any student from the Mechanical Engineering graduate program who fails to meet the academic requirements or has more than one semester of unsatisfactory research. The Committee's action will take place as soon as practical after grade reports are received following the end of an academic term. The Graduate Committee will determine the effective date of dismissal. It is understood that dismissal from the graduate program includes termination of any assistantship held by the student in the Department of Mechanical Engineering.

Appeal Process

If a student and the Academic or Thesis Advisor feel that special circumstances are involved in the poor performance of the student, the student may appeal a dismissal by making a written petition to the ME Graduate Committee. A student whose Advisor does not support an appeal may petition the ME Graduate Committee directly. An appeal will be successful only if evidence is presented to show that unusual circumstances were responsible for the student's poor performance and a reasonable chance exists for the student to successfully complete the program.

IX. DEGREE COMPLETION REQUIREMENTS

General Degree Completion Guidelines

To receive a Master's degree in Mechanical Engineering, the Academic Advisor and/or Thesis Advisory Committee of the student must certify that the student is eligible to be awarded the Master's degree. This certification process depends on whether the student is registered for a thesis or non-thesis option.

Students are eligible to graduate when thirty credits in course work and research have been satisfactorily completed. All courses on the approved Plan of Study must be completed with a minimum cumulative index (GPA) of 3.00. If a student completes 30 credit hours and the GPA is less than 3.0, the student will not graduate. The student will, however, be allowed to take additional ME graduate courses to attempt to raise the GPA. Whenever the GPA is greater than 3.0 at the end of additional classes the student will be allowed to graduate.

All graduate degree requirements must be completed within a seven (7) year time period. This time period begins upon a student's first registration. If a student does not register for four consecutive semesters, the student is considered to be inactive and must petition for reinstatement to the program.

Non-thesis Option Master's Degree

All students completing the non-thesis Master's degree program must apply for graduation by completing the appropriate forms at the beginning of their final semester (**Appendix E**). **It is the student's responsibility to apply for graduation. Because students take a varying number of years to complete the program part-time, the student must notify the department when graduation is imminent by completing the proper forms by the first week of the final semester.** To complete a non-thesis option MSME, the Academic Advisor must certify that the POS has been satisfied and all requirements have been met for the MSME degree. Required forms are found online and include:

Graduation Application – this form is used by the Registrar’s Office to validate the degree and/or certificate you are seeking, the correct spelling of name as it is to appear on your diploma, and the mailing address to which the diploma is to be sent if you are unable to attend graduation.

Request to Participate in Graduation Ceremonies – this is to be submitted in the event that you have not completed all the necessary requirements to actually receive your diploma, but that you expect to complete the requirements by the next graduation term and wish to ‘Walk’ during the May graduation ceremonies. This is available to students who are within 6 credits of degree completion.

Thesis Option Master’s Degree

To complete a thesis option MSME the Academic Advisor must certify that the POS has been satisfied and all academic requirements have been met for the MSME degree, the Thesis Examining Committee must approve the successful defense of the Thesis Research, and the Thesis Advisor, Department Chair and Dean of the College of Engineering must certify the satisfactory completion of the Thesis. All students completing the thesis option Master’s degree program must apply for graduation by completing the ***Application for Graduation*** form by the first week of their final semester (**Appendix E**). **It is the student’s responsibility to apply for graduation.**

Thesis Defense

The Thesis Examining Committee consists of a minimum of three members and is appointed at the request of the student’s Thesis Advisor. The Thesis Examining Committee is normally the same as the student’s Thesis Advisory Committee and is responsible for reading the student’s thesis and conducting the Thesis Defense. A final copy of the thesis in proper format **must** be provided to the Examining Committee a minimum of two weeks prior to the Thesis Defense. This 2-week requirement is in place to allow ample time for the Examining Committee to thoroughly read and comment on the thesis and may not be shortened. Any thesis not following the College Thesis Format Guidelines will be rejected. The Thesis guidelines are available on the College of Engineering website.

Two weeks before the desired thesis defense date, the student must submit the ***Request for Scheduling of Thesis Defense***, (**Appendix E**) to the Mechanical Engineering office which registers the date, time, and location of the defense. When the thesis defense registration is approved and a room location is secured, the student and Thesis Advisor will be notified.

The Thesis Defense consists of a presentation by the student followed by an oral examination by the Thesis Examining Committee. Total time is no more than two hours, including a 45-60 minute presentation followed by questioning. The presentation is open to all who wish to attend, and the questioning is a closed session of the student and the Examining Committee. Questioning may cover both the thesis content and the relevant coursework to ensure a mastery of the fundamentals of mechanical engineering. Final presentations should be well-prepared and succinct.

After the Thesis Defense, the student will revise the thesis according to the requirements of the Thesis Examining Committee and submit the revised thesis for final approval by the Thesis Advisor. Upon final approval by the Thesis Advisor, a copy must be submitted to and approved by the Mechanical Engineering Department Chair and finally by the Dean of the College of Engineering. Upon the receipt of these approvals, the student will be notified and the student will then need to upload the thesis to ProQuest for Publication (available online).

When done, a form “Final Thesis/Dissertation Approved for ProQuest Submission” (available online) must be completed, signed and submitted to the College of Engineering. Once completed, the thesis is considered complete and the student approved for graduation.

Upon notification that all approval levels have been completed, the student must submit two copies of the approved thesis in proper College of Engineering format for binding. Thesis must be printed on 20 lb quality bond paper, with a minimum of 25% cotton content. Paper should be white, not off-white or ivory. One copy is for the student and one copy is for the advisor. Double-sided printing is encouraged but not mandatory. In the event there are additional advisors or a co-advisor, a copy will be required for each of them also. The M.E. Office will pay for the binding of the student copy as well as for the advisor(s) copy. If the student wishes to have additional copies, the cost (\$20.00 per copy) is the responsibility of the student and a check made payable to Falvey Library will need to accompany the copies that are to be sent to the Library for binding. The student is responsible for the cost of printing the thesis on high quality paper. It is strongly recommended that this be done at Staples, OfficeMax, FedEx office or another professional print shop.

Due to the need for thesis revisions following the Thesis Defense and the requirement for review and approval by the Mechanical Engineering Department Chair and Dean of the College of Engineering, the last date for scheduling a thesis defense is the 12th week of the final semester (three weeks before classes end). A checklist and a flowchart documenting all requirements with time limits to be met can be found in Appendix C.

Appendix A: Mechanical Engineering Contact Directory

Chair, Department of Mechanical Engineering

Dr. Amy S. Fleischer, Tolentine 131

610-519-4996

amy.fleischer@villanova.edu

Director of Graduate Studies

Dr. Qianhong Wu, Tolentine 113F

610-519-8969

qianhong.wu@villanova.edu

Administrative Assistant

Ms. Shaunda Williams, Tolentine 131,

610-519-4981

shaunda.williams@villanova.edu

Office of International Students

Hubert Whan Tong, Connelly Center, 2nd Floor

610-519-8017

hubert.whantong@villanova.edu

College of Engineering Graduate Programs Coordinator

Leslie McNamee, College of Engineering, CEER 302A,

610-519-5840

leslie.mcnamee@villanova.edu

Appendix B: New Student Checklist

1. Confirm intent to attend Villanova through online link provided in acceptance email.
2. Consult with Director of Graduate Studies to register for the first semester's courses and on completion of the Plan of Study Form. Obtain signature of Director of Graduate Studies on Plan of Study form.
3. Register for courses using MYNOVA and the PIN number provided by the Director of Graduate Studies. For assistance see:
<http://www1.villanova.edu/villanova/engineering/resources/gradStudents.html>
4. International students- check in with the International Student Office (Connelly Center, 2nd floor). Obtain social security card information and other important information. 610-519-7827 http://www1.villanova.edu/villanova/studentlife/intl_students.html
5. If applicable, complete necessary paperwork in the Mechanical Engineering office to receive fellowship stipend. A local address and cell phone numbers/home (local) numbers are needed.
6. Obtain Wildcard at the Wildcard Office located in Dougherty Hall 610-519-6202.
<http://www1.villanova.edu/villanova/unit/wildcard/newstudentinfo.html>
7. Contact University Information Technologies (UNIT) to obtain access to your e-mail and NOVASIS accounts (Vasey Hall HelpDesk) 610-519-7777.
<http://www1.villanova.edu/villanova/unit.html>
8. If applicable, apply for parking pass for Main Parking Lot at the Department of Public Safety in Farrell Hall 610-519-6992. <http://www1.villanova.edu/villanova/parking.html>

Appendix C: Program Checklist for Thesis Option Students

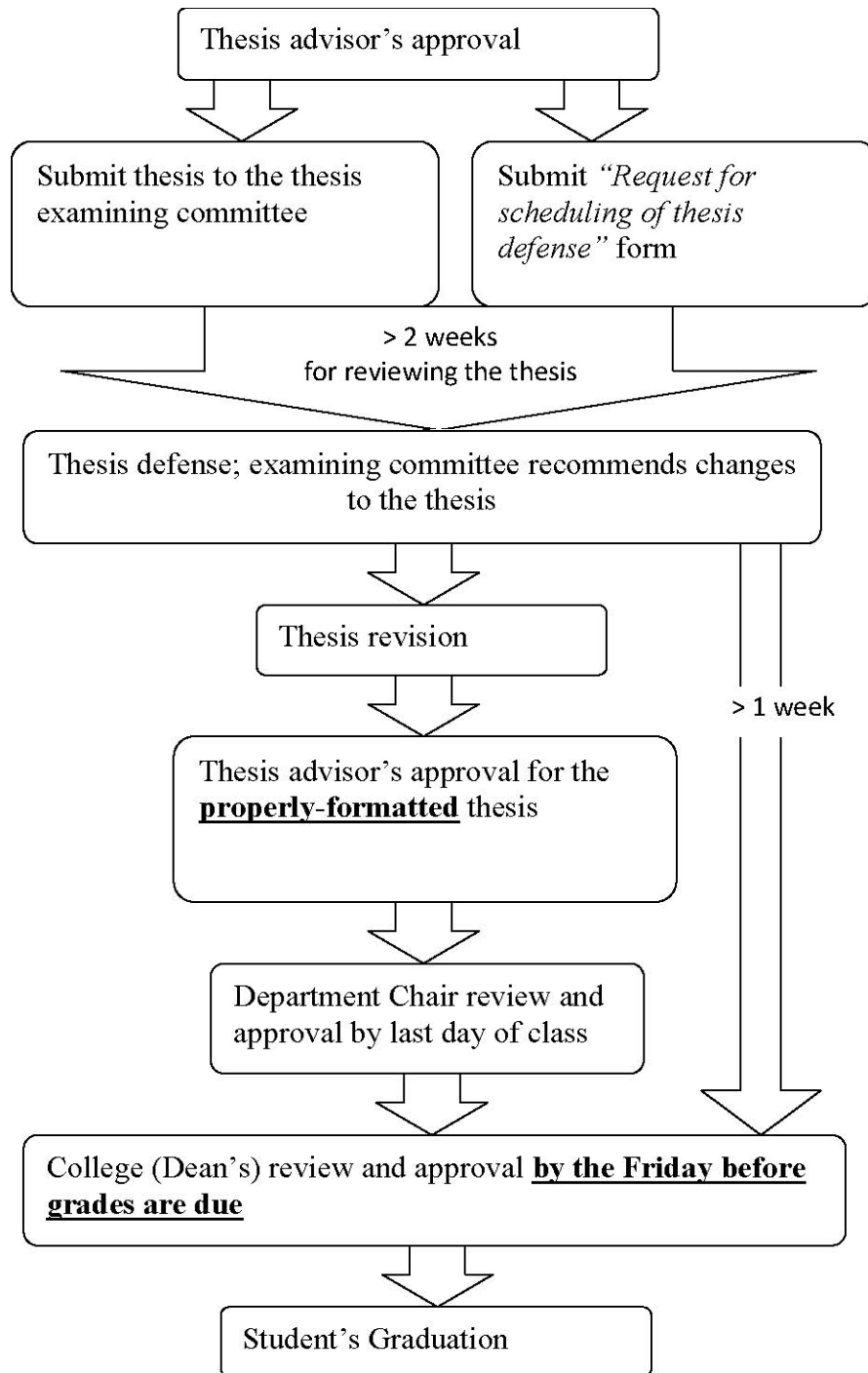
1. First Semester of Study: Read this handbook and the relevant sections of the Villanova University College of Engineering Graduate Program Catalog, if you have not done so already.
2. First Semester of Study: Meet with your Academic/Thesis Advisor and complete the Plan of Study form. Obtain signature of graduate program chair on Plan of Study form and email electronic copy to the Director of Graduate Studies.
3. First Semester of Study: Define your thesis topic/thesis research with your Thesis Advisor and complete the *Application for Approval of Thesis Topic (Appendix E)* Obtain signature of graduate program chair on “Application for Approval of Thesis Topic” and submit to M.E. office.
4. First Semester of Study: Complete *Appointment of Thesis Advisory Committee (Appendix E)* Obtain the approvals of your thesis committee members, reflecting their agreement to serve on your committee on the “Appointment of Thesis Advisory Committee” form. Obtain signature of graduate program chair on “Appointment of Thesis Advisory Committee” form and submit it to M.E. Office.
5. First-Fourth semesters of Study: Complete coursework on Plan of Study.
6. First-Fourth semesters of Study: Complete Thesis Research.
7. Final Semester 1st week: Obtain final approval of Graduate Program Chair on completed plan of study form. Apply for graduation by completing all required forms for graduation and submitting to the Mechanical Engineering main office.
9. Final Semester 4th -9th weeks: Student works with Thesis Advisor to develop thesis in final form using College of Engineering thesis formatting guidelines. After approval of Thesis Advisor, the Thesis Exam can be scheduled and the thesis distributed to committee members.
10. No later than final semester 10th week: Student distributes copies of thesis to thesis Examining Committee and completes “Request for Scheduling of Thesis Defense” form and returns to ME main office. Requested thesis defense date must be a minimum of 2 weeks after distribution of thesis Examining Committee and must accommodate schedules of all Examining Committee members.
11. No later than final semester 12th week: Conduct Thesis Defense. Ensure that Thesis Advisor obtains necessary Thesis Defense Approval forms from the M.E. main office and returns them completed at the conclusion of the defense.
12. No later than final semester 13th week: Complete final edit of thesis including all changes/revisions requested by Thesis Examining Committee.
16. No later than final semester 14th week: Submit a copy of the revised thesis to Thesis Advisor for final approval.

17. No later than final semester 15th week: Thesis Advisor approves final thesis and signs “Final Thesis Approval” form. Student presents one copy of thesis to the Mechanical Engineering Department to be reviewed and approved by the Department Chair. It then goes to the College Dean for review and approval (the Friday before grades are due). Once all approvals have been obtained, the student will be notified that then need to submit the final copies.
18. Final semester last day of classes: Upload thesis to Proquest via:
<http://library.villanova.edu/research/topic-guides/thesis-posting-to-proquest-guidelines/>
Submit form certifying upload of Thesis to Proquest to ME main office (Appendix E).
Submit 2 copies of thesis for binding to ME main office if desired.

The dates listed in the checklist above to be met in the final semester are the final date by which the task must be accomplished. Students are strongly encouraged to have their thesis done in advance of these dates to avoid a last minute rush and panic as the semester winds down. Any significant edits or rework required to the thesis after the Thesis Exam may delay graduation by a semester.

The two-week minimum time for the Thesis Examining committee to review the thesis prior to defense may not be shortened, and the dates for submission of final approved proper format thesis to the Mechanical Engineering Department Chair and the Dean of the College of Engineering are not flexible. Failure to meet these dates will delay graduation by a semester.

Draft MS thesis following thesis guidelines



Appendix D: Program Checklist for Non-Thesis Option Students

1. Read this handbook and the relevant sections of the Villanova University College of Engineering Graduate Program Catalog, if you have not done so already.
2. Consult with Director of Graduate Studies to register for the each semester's courses. Obtain signature of Director of Graduate Studies on Plan of Study form and email electronic copy to the Director of Graduate Studies for filing before the end of the first semester of full-time study or before the end of 9 credits of part-time study.
3. Complete coursework on Plan of Study.
4. Obtain final approval of Graduate Program Chair on completed plan of study form.
5. Apply for graduation by completing all required forms for graduation by the 1st week of the semester in which you intend to graduate. Students are responsible for notifying the ME main office of their intent to graduate.

Appendix E: Forms

1. MSME Plan of Study
2. Transfer Course Approval
3. ME 9000 Independent Study Proposal
4. External Course Approval
5. Application for Approval of Thesis Topic
6. Appointment of Thesis Advisory Committee
7. Request for Scheduling of Thesis Defense
8. Uploading Thesis to ProQuest; Submitting Your Advisor Approval Form (online only)
9. Final Thesis/Dissertation Approved for ProQuest Submission Form (online only)
10. Graduation Application (online only)

Villanova University
 Department of Mechanical Engineering
MSME Plan of Study

Last Name: _____ First Name: _____

Date: _____ Banner I.D.# _____ E-Mail _____

See MSME Handbook of Policies & Procedures for guidelines concerning Program of Study requirements. An MSME program requires successful completion of **TEN** graduate courses (30 credits) with a minimum GPA of 3.0. Your Plan-of-Study should list the courses you intend to take to complete the MSME program. Please consult with your graduate academic advisor to identify the ten courses. Since future graduate course offerings are subject to change due to instructor availability, it is possible that you might not be able to take one or more of these ten classes. Hence, you will need **to identify an additional set of up to five courses (rows 11 through 15 below)**. See MSME Handbook of Policies & Procedures for additional guidelines concerning Plan of Study requirements.

Course Number	Course Title	Credits	Semester/ Year
1. ME 7000	Advanced Engineering Analysis		
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			

Check all that apply:

_____ This is the first submission of Plan of Study _____ This is an update to Plan of Study _____ I have received official permission to change my Plan of Study. (Attach Permission to Change Plan of Study Form)

Approvals:

Academic Advisor

MSME Graduate Program Chair

Date

Date

POS/Plan-Of-Study (rev.6/2012)

Villanova University
 Department of Mechanical Engineering



Department of Mechanical Engineering

Transfer Course Approval

Last Name: _____ First Name: _____

Date: _____ Banner I.D.# _____ E-Mail _____

I request to have the following course (s) transferred to my MSME Plan of Study:

Institution	Course/ Title & Number	Grade	Equivalent Villanova Course Title/ Number

Notes

- (1) An official transcript and course catalog description must be attached to this form.
- (2) If course(s) are approved, student must re-submit MSME Plan of Study with above courses included.

Student Signature _____ *Date* _____

• Approvals:

Academic Advisor _____ *Date* _____

_____ *Date* _____
MSME Graduate Program Chair



Department of Mechanical Engineering
ME 9000 Independent Study Proposal

Last Name: _____ First Name: _____ Date: _____
Banner I.D.# _____ E-Mail _____

SEMESTER: _____ **CUM. GPA:** _____

Your proposal for your independent study project must be attached to this form. The proposal must include a description of the proposed topic of study (see list of possible topics below), the methodology for proposed work, a timeline for the work and the expected output of the independent study. The output of the study must be either a well-documented report of the work and its conclusions and/or a technical paper which will be submitted to an engineering conference or journal. Independent studies without an output will not be approved, and the independent study will not be complete until the final report/paper is received and approved by the Graduate Chair and/or committee.

Independent Study Advisor: _____

Independent Study Topic/Title: _____

Any Independent Study must be completed within one semester. In exceptional cases, with the approval of both the Independent Study Advisor and the Graduate Chairman, an extension of one semester will be granted. Only upon approval will the student be allowed to register for Independent Study Continuation.

Student's Signature Date _____

Faculty Signature/Acceptance of Student Plan Date _____

Approval: Graduate Committee Chair Date _____

1. Solving an industrial problem, particularly if funded through a small grant not sufficient for a full-fledged thesis support (applied research).
2. A small research project not suitable for a full thesis.
3. Developing a detailed computer program to obtain solutions for some theory taught in a graduate class, which can be used in future classes.
4. Setting up a complex piece of lab equipment and/or developing experimental work for use in future lab-teaching or research.
5. Feasibility studies for some novel idea proposed by the student (like setting up a small automated plant), based on engineering principles the student has theoretically studied.
6. Work-based projects, relating to a student's current (part/full time) job, which can expand the student's understanding of his/her work and which may involve partial research.
7. Literature survey, plus an experimental plan if applicable, for a future long-term research project (by the advisor)



Department of Mechanical Engineering

External Course Approval

Last Name: _____ First Name: _____

Date: _____ Banner I.D.# _____ E-Mail _____

I request to take the following courses outside the M.E. Department and have them included in my MSME Plan of Study:

Department	Course/ Title Number	Justification for inclusion in MSME Plan of Study

Note

If course(s) are approved, student must re-submit MSME Plan of Study with above courses included.

Student Signature _____ *Date* _____

Approvals:

Academic Advisor _____ *Date* _____

_____ *Date* _____
MSME Graduate Program Chair



VILLANOVA
UNIVERSITY

Department of Mechanical Engineering

Application for Approval of Master's Thesis Topic

Last Name: _____ First Name: _____ M.I. _____

Date: _____ Banner I.D.# _____ E-Mail _____

I wish to submit for approval, the following master's Thesis topic:

An abstract which outlines the topic and the approach to be taken in addressing this problem must be attached.

Student Signature _____ *Date* _____

Approvals:

Thesis Advisor _____ *Date* _____

MSME Graduate Program Chair *Date* _____



Department of Mechanical Engineering

Appointment of Thesis Advisory Committee

Last Name: _____ First Name: _____ M.I. _____

Date: _____ Banner I.D.# _____ E-Mail _____

Thesis Title: _____

Thesis Committee Members:

_____	_____	_____
<i>Name</i>	<i>Signature</i>	<i>Date</i>

_____	_____	_____
<i>Name</i>	<i>Signature</i>	<i>Date</i>

(3rd Member Optional)

_____	_____	_____
<i>Name</i>	<i>Signature</i>	<i>Date</i>

Signatures:

_____	_____
<i>Thesis Advisor</i>	<i>Date</i>

_____	_____
<i>MSME Graduate Program Chair</i>	<i>Date</i>



College of
ENGINEERING

VILLANOVA
UNIVERSITY

Department of Mechanical Engineering

Request for Scheduling of Thesis Defense

Last Name: _____ First Name: _____ M.I.: _____

Date: _____ Banner I.D.# _____ E-Mail _____

Thesis Title: _____

Requested Date _____ Time: _____
Day & Date

To be completed by M.E. Office administrative staff

Confirmed Date/Time/Location: _____

My Thesis Examining Committee is: _____

Approvals:

Thesis Advisor _____
Date

MSME Graduate Program Chair _____
Date

M.E. Office Administrative Staff _____
Date