

# Materials Science & Engineering

## Graduate Handbook 2015-2016

Last Updated: 8/20/15

# 1. Introduction

The Department of Materials Science & Engineering (MSE) offers graduate students the opportunity to conduct state-of-the-art research under the supervision of world-class faculty while pursuing Master of Science or Doctor of Philosophy degrees in the discipline. The UF Graduate Catalog is the University of Florida's official record of graduate policies, critical dates, deadlines, course descriptions and faculty members for master's degree and doctoral degree students. It is the student's responsibility to know and understand these rules. The graduate school catalog may be found at this link: <http://gradschool.ufl.edu/students/catalog.html>. This handbook is provided to MSE graduate students to serve as a companion resource to the University of Florida Graduate Catalog.

## 2. Department Administration

Dr. James E. Baciak  
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100B Rhines  
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## 3. Advising/Registration

The responsibility of every student's curriculum planning will rest on the student and his/her advisor/supervisor. If you have not joined a faculty member's group, then you will see Dr. John J. Mecholsky, Jr. (237 Rhines Hall) for advisement.

- Prior to each semester a registration hold will be placed on your records
- Please refer to [www.isis.ufl.edu](http://www.isis.ufl.edu) and review your hold screen to check for additional holds to your record which will prevent registration
- You must seek permission to register from your advisor either in person or electronically, this will enable the Academic Services Office (ASO) to lift your registration hold
  - Electronically – Online Advisement Form
    - This form is available from the 1<sup>st</sup> day of advanced registration through the last day of classes the previous term
    - Go to MSE [forms](https://www.mse.ufl.edu/forms/) page: <https://www.mse.ufl.edu/forms/>
    - )
    - Click on Graduate Online Advising Form
      - Click on your advisor/supervisor's name; (Mecholsky, John if you do not have an advisor)

- After receiving permission to register, go to [www.isis.ufl.edu](http://www.isis.ufl.edu)
  - Go to Registration, Register Now in the left-hand column and click on the term (fall, spring, or summer) for which you are registering
  - Proceed to the registration screens
  - Click on Register by section (section numbers are available in the schedule of courses: <http://registrar.ufl.edu/soc/>)
  - Type in the section number provided by ASO and if applicable the number of credits
  - Confirm the course with your Gatorlink password
  - Repeat the steps above for the remainder of your registration
- Register on time to avoid unnecessary late fees. Registration and payment deadlines for each semester can be found at this link: <https://catalog.ufl.edu/ugrad/current/Pages/dates-and-deadlines.aspx>
- Some students on funding are required to pay non-matriculation fees each term
- Tuition and fee schedules and calculators can be accessed here: <http://fa.ufl.edu/bursar/current-students/>
- Pay your portion of fees by the fee payment deadline even if your tuition waiver has not been processed. This will insure you will not be assessed late payment fees. The ASO will not process petitions for late fee payments. In recent terms the Student Financial Affairs has deferred the portion

## 4. Funding/Employment

- Graduate Student Fellowship Award (GSFA) – must maintain enrollment of 9 credit hours in the fall and spring and 6 credit hours in the summer terms
- Graduate Research Assistant – the contract for UF Graduate Assistants United can be found at this link: <http://ufgau.org/wp/>
- External Funding (NSF, DOE, GEM, etc.) – It is customary to provide ASO with award information for external funding
- College Achievement Award (CA) – out-of-state or international students, who are not on traditional funding, may be awarded partial financial support via the CA. The following rules apply:
  - No other funding: i. e., assistantship, fellowship, etc. may be held concurrently. Support for services that do not contribute to their degree program is permitted (e.g., outside employment, temporary OPS in department).
  - This award includes a partial tuition waiver of \$1500 a semester for up to three semesters
    - Must be enrolled for a minimum of 9 credit hours/semester.
    - The three semesters must be used within the first two years of enrollment
  - Students pay a set rate per credit hour; this amount is provided in the original offer letter
  - May hold OPS employment in the department in which you receive the CA
  - Must maintain a minimum 3.0 GPA in both the departmental and cumulative courses
  - Must notify ASO upon receipt of other funding (GRA, External, etc.)
- Other Personnel Services (OPS) – on-campus jobs through [www.jobs.ufl.edu](http://www.jobs.ufl.edu)
  - Must apply online through [www.jobs.ufl.edu](http://www.jobs.ufl.edu)
  - If receiving CA, OPS is allowed within the same department as receiving the CA award
- Volunteering – Graduate students may not volunteer to work in this department under any circumstances. Students must either be compensated for their work in a lab or be registered for research under the faculty member's supervision.

- Internships – Students may register for internship credits under the following guidelines:
  - Must have permission from their supervisory committee chair or graduate coordinator if the student has no supervisory committee
  - Complete and submit the Request for internship form from the Forms page and attach your offer letter from the company
  - ASO will review your form and notify you via email if the request is processed
  - If approved ASO will send information on how to register for EGN5949
    - If registered for EGN5949, the following forms should be submitted to ASO electronically no later than a week before classes end for the term registered in order to receive grade for that term. Links to these forms are on the Forms webpage
      - EGN5949 Employer’s Student Evaluation Form
      - EGN5949 Student’s Evaluation of Employer
    - Curricular Practical Training (CPT) – For international students only, please refer to the University of Florida International Center for the CPT instructions and registration requirements: [www.ufic.ufl.edu](http://www.ufic.ufl.edu)
      - Apply with ASO by following the Internship instructions above by the appropriate deadline
        - April 1 – summer CPT
        - July 1 – fall CPT
        - November 1 – spring CPT
- Payroll and Tax Information
  - Students on formal funding (assistantship, fellowship, etc.) should refer to the Tax Office for information on whether or not taxes will be taken out of their stipends: <http://www.fa.ufl.edu/tax/>
- Graduate Insurance
  - Students on appointments began receiving health care benefits beginning in the fall 2013 term, please refer to <http://www.hr.ufl.edu/benefits/gatorgradcare/> for additional information
- If you obtain any type of funding (Graduate Research Assistantship (GRA), External Fellowship, etc.) after you arrive, please notify ASO
- Graduate students are required to keep a minimum 3.0 grade point average (GPA) both for their cumulative and departmental courses; failure to maintain the appropriate GPA may result in loss of funding
- Graduate students are required to complete a graduate assistant evaluation form at the end of each semester. You will receive the form from the Academic Advising Office and must submit it via the online portal at the following link: <http://www.mse.ufl.edu/?p=5046>. A registration hold will be placed on students who failed to complete this semester-end evaluation, which will prevent them from registering in the following semester.

## 5. Academic Requirements

- Form Supervisory Committee no later than the end of your second semester of study or after 12 credit hours in order to be able to register for a third semester
  - Form is at the following link: <http://www.mse.ufl.edu/academics/mse/general-forms/>
    - Form requires all original signatures of faculty members
- Transfer credits – graduate level courses from a Master’s degree from another university may be considered for transfer to count towards the MS or PhD degree with approval of your supervisory chair or the graduate coordinator. In addition the following must apply:
  - If student is pursuing a MS degree at UF, then up to nine (9) credits may be requested

- If student is pursuing a PhD at UF, then up to 30 credits may be requested
- All work transferred must be coursework taken with a grade of B or better
- Student must submit a Transfer of Credit review by sending an email to [advising@mse.ufl.edu](mailto:advising@mse.ufl.edu)
- Progression to Graduation – Every student is expected to make satisfactory progress toward graduation each semester. Students who fail to make satisfactory progress may be required to seek advisement, mandated to meet specific conditions in order to continue in the major, or denied further registration in the department.
  - Additional Progression Standards which all MSE students must meet:
    - Maintain a grade point average (GPA) of 3.0 or higher both cumulatively and within departmental courses
  - Probation: students who fail to maintain the minimum 3.0 GPA in either the cumulative or departmental courses are placed on Academic Probation and may need to petition to maintain funding
    - Must sign a probation contract with ASO by the last day of drop/add for each semester
    - May request a one-time petition only to maintain funding (GSFA, GRA, CA, etc.); this will only be processed if a current probation contract is in place
- Petitioning – Students with extenuating circumstances that prevent them from fulfilling certain academic requirements or meeting certain timelines may submit academic petitions to have such requirements waived.
  - Go to MSE Website: <https://www.mse.ufl.edu/forms/>. Click on Academic Petition and fill out the request online.
  - Ensure that you provide sufficient supporting documents in your petition. This may include your transcript, written communications with your advisor, course instructor, or ASO staff, and other relevant documents
  - Students are encouraged to have a preliminary discussion with the ASO on their cases before submitting the petitions online
  - Unless in urgent situations, students should in general allow up to two weeks for the MSE Petitions Committee to render a decision. The Petitions Committee may ask for additional information or documents during their deliberation

## 6. Courses and Credits

- Undergraduate courses (1000-2999) may not be used to satisfy any graduate degree requirements. All 1000- and 2000-level courses may be taken on a satisfactory/unsatisfactory (S/U) basis.
- Six credits of undergraduate courses (3000-4999) outside the major may count when taken as part of an approved graduate program. Consult the Academic Unit before registering.
- Courses numbered 5000 and above are limited to graduate students, with the exception described under *Undergraduate Registration in Graduate Courses*. Courses numbered 7000 and above are normally for advanced graduate students.
- No more than 5 credits each of EMA6910 (Supervised Research) may be taken. Students who have taken 5 credits of 6910 cannot take 7910; the rule also applies to 6940 and 7940. Courses numbered 7979 and 7980 are not eligible to count toward a master-level degree program.
- Audited courses at any level do not count toward any graduate degree requirements.
- For a complete list of approved graduate courses, see the Programs Section of the catalog . Academic units decide which of these graduate courses to offer in a given term. Contact the academic unit for information on available courses.
- Generally, graduate courses may not be repeated for credit. However, there is no limit on courses numbered 6971 (but the Graduate School will only count a maximum of 6 credits of 6971 toward a thesis master's-level

degree), 6972, 6979, 7979, and 7980. Other courses repeated for credit indicate “max” after the single term credit, as listed in the Programs Section of the catalog.

## PhD

- Required Credit Hours: 90 beyond the bachelor’s degree
  - Required: 18 hours EMA5000-6000 level (base-count hours) courses with a minimum grade of C or better
  - Coursework is decided between the student and advisor
  - All graduate students are required to register for “EMA6936: Seminar in Materials Science and Engineering” (1 credit) each semester, unless a student has registered for 9 credits of graded courses in that semester, or is in the final semester before graduation and has received a waiver from the Academic Services Office.
  - Additional options for courses which are relative to the PhD degree
    - Maximum 9 credit hours of coursework outside the Department; of these 6 credits may be an undergraduate course at a 3000-4999 level
    - Maximum 8 credit of EMA6905 – Individual Work
    - Maximum 5 credits of EMA6910 – Supervised Research
  - Supervisory Committee – Rules for the MSE Supervisory Committee are as follows:
    - Must be formed by the end of the 2<sup>nd</sup> semester or completion of 12 credits
      - A registration hold will be placed on students who have not completed forming the Supervisory Committee at the end of the 2<sup>nd</sup> semester or completion of 12 credits, which will prevent the students from registering in the following semester until the Supervisory Committee has been formed
      - To form the committee, students must submit a completed Supervisory Committee Form with signatures from all faculty, the form may be found by going to: <https://mse.ufl.edu/forms> and clicking on the link Appointment of Supervisory Committee
    - Committee consists of 5 members who hold graduate faculty status with the Graduate School
      - 4 Internal MSE members
        - Chair
        - 3 additional MSE graduate faculty
      - 1 External member; this individual cannot hold MSE graduate faculty status
  - Ph.D. track students will have to meet certain academic requirements and pass the Ph.D. qualifying exam as described below in order to be admitted to Ph.D. candidacy.
- I. ACADEMIC REQUIREMENTS:
- All PhD track students must take 4 core courses:
    - EMA 6313: Advanced Materials Principles 1
    - EMA 6114: Advanced Materials Principles 2
    - EMA 6316: Materials Thermodynamics
    - EMA 6136: Diffusion, Kinetics, & Transport
  - Students must obtain a minimum grade of B or better in each core course. Students cannot take any core course more than twice in order to achieve this requirement.
  - All PhD track students must pass one specialty course (EMA 6xxx) with a minimum grade of B or better within two attempts (including withdrawal), with the following conditions:

- The specialty course needs to be selected from a list of graduate courses the Department has approved (see Attachment I). Special topics courses (EMA 6938) may also be considered on a case-by-case basis through petitioning.
  - Upon consultation with the faculty advisor, the student needs to designate the required specialty course before enrolling in that course.
  - If a student fails the designated specialty course (i.e., a grade of B- or worse) on his/her first attempt, the student may choose to re-take the same course if available, or choose a different course from the approved course list and designate it as the required specialty course. In either case, the student needs to pass the specialty course on this second attempt in order to satisfy the PhD degree requirement on specialty course (i.e. a total of two attempts will be allowed regardless if the student chooses to take the same specialty course twice or two different courses with one attempt each).
- Students have a maximum of two years from the entry to the graduate program to achieve this academic component requirement (note the exception below).
  - Under special circumstances, students identified during the recruiting process and/or first semester registration, may petition to delay enrollment in these courses in order to remedy deficiencies in their undergraduate preparation or any other course load limitation (e.g. off-campus students). An approved plan of study (by ASO, the graduate coordinator and the advisor championing the student) must be in place (petitioned and approved) before drop/add in the beginning of the first semester.
- II. Ph.D. QUALIFYING EXAM:
- In the Ph.D. Qualifying Exam, the students must write a Ph.D. research proposal and defend it orally in front of the Ph.D. supervisory committee.
  - A Ph.D. supervisory committee must be in place for the student to present/defend the research proposal.
  - Examination will be graded pass/fail separately for the writing and oral components of this exam. An overall passing grade for the Ph.D. Qualifying Exam will be achieved only if both the writing and oral components are passed.
  - The students have a maximum of two years from the entry to the graduate program, and have a maximum of two attempts, to pass the Ph.D. Qualifying Exam. Hence, the first attempt should be made no later than the end of the 5<sup>th</sup> term (counting the Summer Term) from the entry to the graduate program to ensure a second attempt opportunity in case the first attempt is not successful.
  - Specific guidelines on the Ph.D. Qualifying Exam regarding timeline, procedures, expectations and other resources are attached (Attachment II).
    - The student should submit the proposal topic to the Supervisory Committee within the first 8 weeks of the semester the student intends to take the Ph.D. Qualifying Exam. Failure to follow this timeline will prevent the student from attempting the Ph.D. Qualifying Exam in that semester. Go to the <https://mse.ufl.edu/forms> website and click on Proposal Defense Topic Submission
    - Online announcement must be submitted to ASO at least 5 business days prior to the presentation and defense by following the directions below:
      - Go to the page <https://mse.ufl.edu/forms> website
      - Click on Admission to Candidacy in the Supervisory Committees/Defenses section, the form is self-explanatory
        - If you have any internal substitutes (maximum of 2), then indicate the substitution on the form. For example, Dr. Phillipot will substitute for Dr. Perry
      - Failure to announce the proposal presentation/defense in advance may prevent the exam from being held on the intended date
    - Proposal defense date
      - Entire Supervisory Committee must attend and examine the student

- Two internal MSE members may be substituted if necessary
  - Supervisory Committee chair or another member of the committee must pick up the defense paperwork from ASO
    - The proposal defense shall not be held without the proper paperwork
    - Forms must be returned within 5 business days of the defense or ASO will process as a failed examination
    - If the exam is passed, then the student will be Admitted to Candidacy
    - If the student does not pass the initial attempt of the Proposal Defense, then the 2<sup>nd</sup> attempt should be taken no later than the last day of classes in the following term
- Either requirement for the Ph.D. candidacy can be passed or achieved independent of the other. That is, the academic requirements can be met independent of the Ph.D. Qualifying Exam, and vice versa.
- ONCE students achieve both requirements they will be admitted to Ph.D. Candidacy before the beginning of the third year. Students not successfully achieving both requirements by the end of their second year will not be admitted to Ph.D. candidacy and will not be permitted to continue in the Ph.D. program; in such cases, students may be transferred to the Master's program and seek to graduate with MS degrees (thesis or non-thesis).
- Ph.D. students may qualify to apply for a M.S. degree (non-thesis) if they meet the M.S. degree requirements (see below).
  - Application for a M.S. degree should be made at least one semester prior to the semester of anticipated graduation from the Ph.D. program
  - A minimum of 3 (Fall/Spring) or 2 (Summer) credits in the semester should be applicable towards the M.S. degree
  - The requirement for EMA 5095: Critical Analysis of Research in MSE for the M.S. degree can be waived if the student has accumulated a minimum of 9 credit hours of Advanced Research/Doctoral Research (EMA 7979/7980)
- Time limitations
  - Per the grad school catalog, "All work for the doctorate must be completed within 5 calendar years after the qualifying examination, or this examination must be repeated." NOTE: for the MSE department, the Qualifying Exam pertains to the completion of both the Academic Requirement and the Research Potential Requirement.
  - Admission to Candidacy – Per the grad school catalog, "All work for the doctorate must be completed within 5 calendar years after the qualifying examination, or this examination must be repeated." NOTE: for the MSE department, the Qualifying Exam pertains to the completion of both the Academic Requirement and the Research Potential Requirement.
  - Final Exam – Per the grad school catalog, "The defense should be no more than 6 months before degree award."
- All Ph.D. students admitted into the MSE graduate program in or after Fall 2013 are required to complete a professional development requirement as part of their Ph.D. education. This professional development requirement has the following two components:
  - Students are required to successfully complete a one-credit hour Professional Development (teaching/research training) course before beginning their second year of study.
  - Students are required to satisfactorily serve as a teaching assistant (TA) for two separate courses, with an expected work load of 5 hours per week per course. This component is expected to be satisfied within the second and third year from the student's entrance into the MSE Ph.D. program.



- Expectations for Teaching Assistants and Faculty Instructors:
  - It is a TA's responsibility to meet with the assigned faculty instructor as soon as the assignment is made.
  - The instructor should give a clear instruction on the duties and expectations for the TA.
  - The faculty instructor is strongly recommended to assign a diverse set of duties to ensure the TA will receive broad-based training through this TA experience.
  - The faculty instructor should ensure that the work load of the TA does not exceed the allowed time (5 hours per week per course) with reasonable effort by the TA.
  - Possible duties may include, but are not limited to, a subset of the following:
    - Host office hours
    - Host review sessions
    - Grade homeworks and/or exams
    - Help the instructor create homework and/or exam problems
    - Prepare homework and/or exam solutions
    - Proctor exams
    - Prepare, copy and distribute classroom materials
    - Return student work
    - Attend classes if required by instructor
    - Give lectures, but only under special circumstances and agreed upon by the instructor and the TA
  - Performance of the TA will be evaluated by both the faculty instructor and the students enrolled in the course. Students who do not receive satisfactory evaluations by the instructor of the course will need to repeat the assignment as TA in a future semester. The instructor evaluation will also be forwarded to the TA's advisor.
  - The TA should communicate regularly and promptly with the instructor to resolve issues related to students' work in the course as well as the performance and duties of the TA.
  - An official grievance process is in place if the TA feels him/her being treated unfairly by the students in the course and/or the faculty instructor. The complaint goes to the MSE Graduate Coordinator first, then to the Associate Chair for Academics, and to the Department Chair.
- Dissertation Defense
  - Online announcement must be submitted at least 5 business days prior to the defense by following the directions below:
    - Go to the **Forms** page on the [www.mse.ufl.edu](http://www.mse.ufl.edu) website
    - Click on **Final Examinations (MS-Thesis or PhD)** in the Supervisory Committees/Defenses section, the form is self-explanatory
      - If you have any internal substitutes (maximum of 2), then indicate the substitution on the form. For example, Dr. Phillipot will substitute for Dr. Perry
    - Failure to announce the final defense in advance may prevent the exam from being held on the intended date
  - Dissertation defense date
    - Entire Supervisory Committee must attend and examine the student
      - Two internal MSE members may be substituted if necessary
    - Supervisory Committee chair or another member of the committee will pick up the defense paperwork from ASO, the paperwork will include the ETD Signature Page
      - The final defense shall not be held with the proper paperwork

- Final examination forms must be returned within 5 business days of the defense or ASO will process as a failed examination
- If the ETD signature page is not completed at the final examination, then the student will be given the ETD page for completion. The student must submit the completed ETD page to ASO no later than three business days prior to the Graduate School Editorial Office's published deadline for Final Examinations

## **MS Non-Thesis (MSN)**

- Required Credit Hours: 30
- Required: 15 credits of EMA5000-6000 level (base-count hours) core courses (see below) with a minimum grade of C or better in each course and a minimum GPA of 3.0 or above
  - EMA 6313: Advanced Materials Principles 1
  - EMA 6114: Advanced Materials Principles 2
  - EMA 6316: Materials Thermodynamics
  - EMA 6136: Diffusion, Kinetics, & Transport
  - EMA 5095: Critical Analysis of Research in MSE
    - Note that the requirement for EMA 5095 can be waived if the student has accumulated a minimum of 9 credit hours of Advanced Research/Doctoral Research (EMA 7979/7980)
- All graduate students are required to register for "EMA6936: Seminar in Materials Science and Engineering" (1 credit) each semester, unless a student has registered for 9 credits of graded courses in that semester, or is in the final semester before graduation and has received a waiver from the Academic Services Office.
- Course work is decided between the student and the graduate coordinator
- Additional options for courses which are relative to the MSN degree
  - Maximum 9 credit hours of 3000 level or higher courses outside the MSE program; however the total number of such outside credits and transfer credits (see below) cannot exceed 9 credits
  - Maximum 6 credits of S/U graded work
- Transfer credits – up to 9 credits of graduate level courses from a Master's degree at another university may be considered for transfer to count towards the MSN degree with approval of your supervisory chair or the graduate coordinator; however the total number of transfer credits and credits from outside the MSE program (see above) cannot exceed 9 credits. In addition, per the grad school catalog, "Petitions for transfer of credit for a master's degree must be made during the student's first term of enrollment in the Graduate School." In addition the following must apply:
  - All work transferred must be coursework taken with a grade of B or better
  - Student must submit a Transfer of Credit request form electronically via the Student-Forms webpage
  - ASO will notify student via email once the form is ready for the graduate coordinator's signature
  - Student will need to pick up the form and return it to ASO for processing
- Time limitations – All work, including transferred credits, counted toward the master's degree must be completed during the seven years immediately preceding the date which the degree is awarded

- MSN Non-Thesis Paper – Guidelines for the MSN Non-Thesis Paper may be found on the **Forms** page on the MSE website [www.mse.ufl.edu](http://www.mse.ufl.edu)
  - The paper is due to the graduate coordinator of the respective program by email no later than 5 business days prior to the Graduate School’s published deadline for the respective document.

## MS Thesis (MST)

- Required Credit Hours: 30
- Required: 15 credits of EMA5000-6000 level (base-count hours) core courses (see below) with a minimum grade of C or better in each course and a minimum GPA of 3.0 or above
  - EMA 6313: Advanced Materials Principles 1
  - EMA 6114: Advanced Materials Principles 2
  - EMA 6316: Materials Thermodynamics
  - EMA 6136: Diffusion, Kinetics, & Transport
  - EMA 5095: Critical Analysis of Research in MSE
    - Note that the requirement for EMA 5095 can be waived if the student has accumulated a minimum of 9 credit hours of Advanced Research/Doctoral Research (EMA 7979/7980)
- All graduate students are required to register for “EMA6936: Seminar in Materials Science and Engineering” (1 credit) each semester, unless a student has registered for 9 credits of graded courses in that semester, or is in the final semester before graduation and has received a waiver from the Academic Services Office.
- Coursework is decided between the student and their MST advisor
- Additional options for courses which are relative to the MST degree
  - Maximum 9 credit hours of 3000 level or higher courses outside the MSE program; however the total number of such outside credits and transfer credits (see below) cannot exceed 9 credits
  - Maximum 6 credits of EMA6971 – Master’s Research
  - Maximum 6 credits of S/U graded work excluding EMA6971 – Master’s Research
- Transfer credits – up to 9 credits of graduate level courses from a Master’s degree at another university may be considered for transfer to count towards the MST degree with approval of your supervisory chair; however the total number of transfer credits and credits from outside the MSE program (see above) cannot exceed 9 credits. In addition, per the grad school catalog, “Petitions for transfer of credit for a master’s degree must be made during the student’s first term of enrollment in the Graduate School.” In addition the following must apply:
  - All work transferred must be coursework taken with a grade of B or better
  - Student must submit a Transfer of Credit request form electronically via the Student-Forms webpage
  - ASO will notify student via email once the form is ready for their supervisory chair’s signature
  - Student will need to pick up the form and return it to ASO for processing
- Time limitations – All work, including transferred credits, counted toward the master’s degree must be completed during the seven years immediately preceding the date on which the degree is awarded
- Supervisory Committee – Rules for the MSE Supervisory Committee are as follows:

- Must be formed by the end of the 2<sup>nd</sup> semester or completion of 12 credits
  - To form the committee, students must submit a completed Supervisory Committee Form with signatures from all faculty, the form may be found on the **Forms** page of the MSE website <https://mse.ufl.edu/forms>
- Consists of 3 MSE faculty members who hold graduate faculty status with the Graduate School
- Thesis Defense
  - Online announcement must be submitted at least 5 business days prior to the defense by following the directions below:
    - Go to the **Forms** page on the <https://mse.ufl.edu/forms> website
    - Click on **Final Examinations (MS-Thesis or PhD)** in the Supervisory Committees/Defenses section, the form is self-explanatory
      - If you have any internal substitutes (maximum of 1), then indicate the substitution on the form. For example, Dr. Phillipot will substitute for Dr. Perry
    - Failure to announce the thesis defense in advance may prevent the exam from being held on the intended date
  - Thesis defense date
    - Entire Supervisory Committee must attend and examine the student
      - One internal MSE members may be substituted if necessary
    - Supervisory Committee chair or another member of the committee must pick up the defense paperwork from ASO, the paperwork will include the ETD Signature Page
      - The final defense shall not be held without the proper paperwork
      - Final examination forms must be returned within 5 business days of the defense or ASO will process as a failed examination
      - If the ETD signature page is not completed at the final examination, then the student will be given the ETD page for completion. The student must submit the completed ETD page to ASO no later than one business days prior to the Graduate School Editorial Office's published deadline for Final Examinations otherwise the form may not be processed in time to graduate

## 7. Graduation

Prior to the term of graduation, you should meet with ASO staff to conduct a graduation check. Additional requirements are below:

- Apply for the appropriate degree (Master of Science or Doctor of Philosophy) by submitting an online degree application through [www.isis.ufl.edu](http://www.isis.ufl.edu) by the posted Registrar's Deadline for the term
- Comply with Graduate School [www.gradschool.rgp.ufl.edu](http://www.gradschool.rgp.ufl.edu) rules and Graduate School Thesis/Dissertation and Final Examination Deadlines, refer to the Graduate School and the Editorial Office for the appropriate dates
- Register for the appropriate credits for your degree per the Graduate School. NOTE: students receiving formal funding (GRA, GSFA, etc.) must maintain appropriate registration for their tuition waiver

- PhD - a minimum 3 credits of EMA7980, Doctoral Research if final term is fall/spring or 2 credits if final term is summer
- MS Non-Thesis – a minimum 3 credits which are applicable to the degree if final term is fall/spring or 2 credits if final term is summer
  - Applicable courses would include
    - EMA5000-6000 level course
    - Course outside department, if maximum hasn't been taken
    - EMA6910, if maximum S/U credit limits or EMA6910 maximum hasn't been taken
- MS Thesis - a minimum 3 credits of EMA6971, Master's Research if final term is fall/spring or 2 credits if final term is summer

If this is a terminal degree, then student must complete the Departmental Employment Questionnaire and Exit Interview Checklist and return them to ASO no later than the last day of classes for the term.

## Attachment I: Approved Specialty Courses

Below is the approved list of specialty courses students may designate to fulfill the specialty course requirement for Ph.D. degree.

### Ceramics:

EMA 6109: Physical Chemistry of High Temperature Materials  
EMA 6319: Applied Colloid Science  
EMA 6445: Electroceramics  
EMA 6446: Solid State Ionics  
EMA 6448: Ceramic Processing  
EMA 6540: Fundamentals of Crystallography  
EMA 6715: Fracture of Brittle Materials  
EMA 6804: Quantum Methods in Computational Materials Science

### Electronic Materials:

EMA 6110: Electron Theory in Solids  
EMA 6616: Advanced Electronic Material Processing  
EMA 6412: Synthesis and Characterization of Electronic Materials  
EMA 6416: Organic Electronics

### Metals:

EMA6625: Advanced Metals Processing  
EMA6510: Survey of Materials Analysis Techniques  
EMA6106: Advanced Phase Diagrams  
EMA6107: High Temperature Alloys

### Polymers:

EMA 6165: Polymer Physical Science  
EMA 6461: Polymer Characterization  
EMA 6581: Polymeric Biomaterials

### Biomaterials

EMA 6165: Polymer Physical Science  
EMA 6461: Polymer Characterization  
EMA 6581: Polymeric Biomaterials  
EMA 6580: Science of Biomaterials  
EMA 6xxx: Nanomaterials: from Theory to Applications  
EMA 6xxx: Bioinspired Materials  
EMA 6xxx: Nanomagnetism and Nanomedicine

- These forms can be found on the **Student-Forms** page of the MSE website <https://mse.ufl.edu/forms>

## Attachment II: Guidelines for Ph.D. Qualifying Exam

Ph.D. students must write, present, and defend an original and independent research proposal as described in this section. To aid in this process, besides close consultation with their Faculty Advisors, students are strongly recommended to take the course EMA 6938 Professional Development during their first Summer semester (note that passing this course is part of the MSE Ph.D. degree requirements).

**Purpose and Expectation:** The goal of this examination is for the Ph.D. Supervisory Committee to evaluate the student's competency in graduate level materials science and engineering knowledge, competency in a proposed field of research along with the ability to assimilate relevant material from the literature. Student competency is reported using the following forms: (Web address to be specified)

### Timeline:

Topic Submission: The proposal topic must be submitted to the supervisory committee within the first 8 weeks of the semester the student intends to take the Ph.D. qualifying exam.

Written Proposal: The written proposal document must be submitted to the Supervisory Committee at least 1 week before the presentation and oral examination take place.

Presentation and Oral Examination: The presentation and oral examination are to occur in the same session. Online announcement of the presentation must be submitted at least 5 business days in advance (Go to <https://mse.ufl.edu/forms> website). When scheduling the committee and the room, students should plan for a minimum of 2 hours for this examination. The Graduate School rules stipulate that the presentation and oral examination cannot be held on reading days; however, they may be held during the final exam week if the student does not have any non-research courses in that semester, or during academic breaks with the approval of the Supervisory Committee.

Failure to follow this timeline will prevent the student from attempting the qualifying exam in that semester (including the semester break immediately following that). Therefore, students are advised to plan for and schedule these activities carefully to avoid conflicts and missing deadlines.

### Process and Guidelines:

- 1) Topic Submission. In order to select a proposal topic, students should consult with their advisor and supervisory committee to discuss the suitability of potential topics. The student should either email or present in person a brief outline of the proposal to the Supervisory Committee members. The students should include a brief description of how their proposal topic differs from the dissertation topic; or if they are the same, a brief description of the students' significant independent intellectual contribution in formulating the proposed research. The Supervisory Committee is responsible for ensuring that the topic is both original and independent, and committee members may provide feedbacks to the student for clarifications or suggestions for revising the topic. Students need to provide proofs (such as a copy of email or dated signature) that verify topic submission to the supervisory committee within the first 8 weeks of a semester in order to schedule the proposal defense in that semester (or the semester break immediately following that semester, with the approval of the Supervisory Committee).
- 2) Written Proposal. The proposal on the approved topic should be prepared as if the student were going to submit it to a federal agency for consideration. Students may use guidelines such as those of the National Science Foundation or other federal agencies (NIH, DOE, DOD, etc.) to help them structure their proposals. Example proposals can be made available by the faculty advisor or by other graduate students. Example proposals may also be available online from some agencies, e.g. NIH (<http://www.niaid.nih.gov/researchfunding/grant/Pages/appsamples.aspx>).

In terms of content, the proposal should: A) Convince the committee that the proposed research is original and, if successfully executed, will have significant impact, scientifically and/or technologically. Simply saying that it has never been done is insufficient. Possible reasons include new scientific understanding, new properties, or economic benefit (for example, cheaper processing technique). B) Demonstrate a comprehensive understanding of the background literature and establish that the research has not been done before. C) Describe the tools and techniques to be used to answer the questions raised. The proposal must describe how the proposed techniques will specifically answer the questions asked. Note it may not be appropriate to choose techniques just because everyone uses those techniques.

While the student should discuss the proposal topic and the requirements, expectations and other issues related the qualifying exam with his/her Faculty Advisor, the student should prepare the written proposal independently without assistance from the Faculty Advisor. Specifically, the student should not ask the Faculty Advisor to review or edit the written proposal prior to the submission of the proposal document to the entire supervisory committee.

The document should not exceed 20 printed pages including all figures and tables but excluding references. The document should be single-sided with and 1.0" margins all around. For the proposal text, 1.5 line spacing and 12 pt font should be used. Although the students are free to follow any federal funding agency (NSF, NIH, etc.) proposal guidelines, for the purposes of this exam, at a minimum, the following topics should be addressed:

- a. An abstract or summary of the proposal
- b. Introduction, Motivation, Problem Statement, and Significance
- c. Objectives of proposed research
- d. Significance
- e. Literature Background
- f. Proposed Research (Tasks and Experiments to be carried out to achieve objectives)
- g. Description of Procedures/Methods, etc.
- h. Description of Work Already Completed If Applicable
- i. Anticipated Outcomes
- j. Timeline and Resources
- k. References

This format is suggested as a guide. In general, the information associated with items b-e above should occupy about 25% of the proposal description (excluding abstract and references), items f-h should occupy about 65% and i-j should occupy about 10%.

The student may follow the NSF proposal guidelines (Section: II C 2 a-e only), if desired:

[http://nsf.gov/pubs/policydocs/pappguide/nsf14001/gpg\\_index.jsp](http://nsf.gov/pubs/policydocs/pappguide/nsf14001/gpg_index.jsp)

(Note that some specific requirements of NSF (such as various forms and budget, etc.) will not be applicable to the qualifying exam proposal.)

- 3) Presentation. The student should prepare an oral presentation of the research proposal not exceeding 25 minutes in length. General guidelines suggest that the presentation thus contain no more than 25 slides. The presentation should be considered complementary to the written proposal and should demonstrate to the committee the value of the proposed research and the ability of the student to identify a scientific problem and determine a plan to resolve it. The audience and the committee may ask clarifying questions during the presentation or at the end of it. Afterwards, the general audience will be excused.



- 4) Oral Examination. After the audience is excused, the committee will ask relevant questions to evaluate the students' competency in the chosen field of research and the proposal (presentation and written proposal). In addition, questions that evaluate the student's competency in graduate level materials science and engineering topics will be asked.
- 5) Deliberation and Evaluation forms. Following the oral examination, the student will be excused from the room and the committee will discuss the student's performance. A pass or fail decision will be made at this time. Per Graduate School rules, the written and oral components of the exam will be graded separately. Passing in both components is required to pass the Ph.D. Qualifying Exam.
- 6) Results. The student will be informed of the committee's decision once the deliberation is completed. If a student receives a failing grade for either the written or the oral component, or both, the student can defend the failed component(s) in the next academic term, (i.e. Fall, Spring, Summer) provided the second attempt is to happen before the start of the third year in the graduate school.

### **Regulations and Limitations:**

- Students must pass the Ph.D. qualifying exam before the start of the third year. Students converted from the MS program has an extra semester to pass the qualifying exam (i.e. these students will have 7 semesters, starting from the date of first graduate enrollment, to pass the qualifying exam).
- Students in general have two attempts to pass the Ph.D. qualifying exam. However, if a student chooses to make the first attempt in the sixth term in the graduate school year, or if the student is not allowed to make the first attempt in an earlier term due to not following the required timeline as described earlier in this document, he/she effectively foregoes the right to a second attempt if the first attempt results in a fail.
- For the presentation and oral examination, the chair and external member of the committee must be present in the same room as the student defending. All other members of the committee, or their substitutes, should be present in some form, i.e., electronic presence is acceptable.
- The presentation and oral examination cannot take place during reading days. To have the presentation and oral examination during the final exam week, the student should only have research courses in that semester. The approval of the supervisory committee is needed to have the presentation and oral examination during academic breaks. For scheduling purposes, the break between semesters will be counted as part of the earlier semester.
- There is no conditional pass. The result of the examination is either pass or fail.