MSE Graduate Program

Overview of Requirements/Changes and FAQ’s
BS \hspace{2cm} \rightarrow \hspace{2cm} MS Plan I (Thesis)

24 hours coursework + 9 hrs 699

The 24 hrs coursework is:
- 18 hrs in MSE
- 3-6 hrs in supporting fields (3 can be in management)
- Max of 9 hrs at 500 level
30 hours coursework + 3 hrs 698

The 30 hrs coursework is:-
• 24 hrs in MSE
• 3-6 hrs in supporting fields (3 can be in management)
• Max of 9 hrs at 500 level
PhD

MS

24 hours coursework + 24 hrs 799

Dissertation

BS

MS (Plan I)

24 hours coursework + 9 hrs 699

24 hours coursework + 24 hrs 799

PhD

Dissertation
PhD

48 hours coursework + 24 hrs 799

BS

30 hours coursework
- 24 hrs in MSE
- 3-6 hrs in supporting fields (3 can be in management)
- Max of 9 hrs at 500 level

MS
Comprehensive exam

Dissertation proposal

18 hours coursework
- 3-6 hrs in supporting fields (3 can be in management)
- Max of 6 hrs at 500 level

PhD

After comprehensive exam and dissertation proposal can be admitted to candidacy – Then take 799 hours
Preparatory Sequence

- All students entering without a B.S. in Materials Engineering or closely-related field must complete the Preparatory Sequence.

  MSE 280 - Engineering Materials  
  MSE 281 - Physical Materials I  
  MSE 380 - Thermodynamics of Materials  
  MSE 381 - Physical Materials II  
  MSE 382 - Mechanical Behavior of Materials  
  MSE 565 - Characterization of Materials
Preparatory Sequence

- All students entering without a B.S. in Materials Engineering or closely-related field must complete the Preparatory Sequence.

  MSE 280 - Engineering Materials
  MSE 281 - Physical Materials I
  MSE 380 - Thermodynamics of Materials
  MSE 381 - Physical Materials II
  MSE 382 - Mechanical Behavior of Materials
  MSE 565 - Characterization of Materials
Preparatory Content

• MSE 280; MSE 281; MSE 380; MSE 381; MSE 382
• You will be required to demonstrate knowledge in the above subject matter
• This will be achieved through self study and scheduled comprehensive exams
• It is expected that you will complete these exams within the first year in the graduate program.
• You will be provided study material/notes/example questions/etc.
• The first exam will be MSE 280, scheduled for mid October. Multiple instructors will contribute to the comprehensive exam; however, Dr. Foley will be the coordinator.
• Exams in the other courses will follow every six weeks.
• You will be expected to pass the exam on your first attempt; however should you fail with a grade above 50%, you will be allowed to retake the exam within one week.
• Should you fail the initial exam with a grade less than 50% or fail the retake; you will be expelled from the graduate program.
Preparatory Content …cont.

• Given that you will need to prepare for the UG course content; you will be expected to register for at least one graduate (5XX or 7XX) course, 1 hour of seminar, and 2 or 5 hours of MSE 798.
  – Course load should be determined in consultation with advisor

• This implies that at any given time you are only studying for one or two graduate courses and one undergraduate course, therefore there will be an expectation that you will also perform research under the guidance of your supervisor.
  – A lower level of research activity will of course be expected of students taking a higher course load

• To put this into perspective, a typical UG materials major carries the entire preparatory course load (15 hours) in one semester.

• You will be expected to take MSE 565 for graduate credit.
• What happens to students currently in the program? The courses you have already completed and passed, will be deemed completed under the new system. You will be expected to complete the self study on the courses not yet completed.

• How does this affect UAB MSE UG’s who join the graduate program? If you have passed the preparatory classes with an A you do not have to complete the self study or exam in that course. If you had a grade lower than an A, you have to take the exams.

• What if you want to take the preparatory courses? You are free to take the courses when the are offered, however, this will be at your own cost. Students funded through the department, either through GRA or GAPF do not have this option.
Q: What is a Qualifier? When do I take it and what is involved?

- The Qualifying Exam (also called the Comprehensive Exam) is a department administered written exam that tests a student seeking a doctoral degree for basic knowledge in materials science & engineering.
- Administered twice annually – Spring and Fall semesters. The Graduate Program Director will provide information on the specific dates and coordinate the administration and grading of the exam.
- Based on undergraduate course content – MSE 280, 281, 380 381, 382 and 465.
- The qualifier is graded by different faculty members.
Q: What is a Qualifier? When do I take it and what is involved?

- The Qualifying Exam (also called the Comprehensive Exam) is a department administered written exam that tests a student seeking a doctoral degree for basic knowledge in materials science & engineering.
- Administered twice annually – Spring and Fall semesters. The Graduate Program Director will provide information on the specific dates and coordinate the administration and grading of the exam.
- Based on undergraduate course content: MSE 280, 281, 380 381, 382 and 465.
- The qualifier is graded by different faculty members.
Qualifiers/Proposal/Candidacy

• The student will be given questions by the committee members in the broad area, but not specific to, the dissertation topic one month prior to the student presenting their proposal to the committee.
• The student will send written answers to these questions to the respective committee members at least 3 days before the proposal presentation.
• It will be evaluated for completeness and correctness and the committee member may question the student further during the scheduled proposal presentation.
• This will be coordinated by the committee chair (student’s advisor).
• The student will be required to complete the proposal within 18 months of having taken the last of the prerequisite exams.
• When selecting the committee members the student will be required to send an extended abstract of their research topic with the invitation/request to serve on their committee.
• The student will be required to send a written proposal document (in NSF format) to the committee members at least 10 days before the proposal presentation.
• Upon successful completion, the student will be deemed a Doctoral Candidate.
Graduate Committee

- Members should be persons who can review and contribute to different aspects of your research.
  - At least 3 members for M.S.
  - At least 5 members for Ph.D.
  - Non-faculty must be approved by Graduate School

- Selected early enough to help plan your program - not immediately before your admission to candidacy presentation

- Must have faculty from outside the department:
  - M.S. – one outside member
  - Ph.D. – two outside members, including one from UA Materials Engineering Program
Ad Hoc Committee Members

- In addition to the above, in some cases a student may have an ad hoc committee member(s) – for e.g. an individual with a PhD degree working in an industry, research organization or a national lab. Such an individual has knowledge of the student’s work through association of a research project.

- An ad hoc committee member has to be approved through a formal form submitted by the department to the Graduate School. A resume/curriculum vitae of the ad hoc member will be required along with the approval form.

- Ad hoc committee members are in addition to the five committee members described above.
You are now a candidate!

- Take your MSE 699 or MSE 799 credits
  - Minimum of one semester of MSE 699 for M.S.
  - Minimum of two semesters of MSE 799 for Ph.D.
- Complete any remaining courses
- Do a great job on your project, including giving talks and submitting papers
- A seminar would be nice
- You must write a thesis or dissertation for Plan I M.S. and Ph.D.
Theses and Dissertations - Sequence

- Work through drafts with mentor
- Distribute an error-free, advisor-approved document to graduate committee at least ten days before the defense
- Committee reads the document and makes suggestions at defense
- Student makes corrections in consultation with advisor
- Advisor proofs corrections for content and grammar
- Student finds department approved proofreader, who proofs for style, format, grammar
- Student makes corrections, gives corrected copy and proofreader’s notes to advisor for checking corrections
- The Program Director gives the student the signed forms only after examining the final document and comparing to the proofreader’s notes
Defense Scheduling

- The defense must be at least 30 days before the end of the semester.

- The date should be selected to maximize committee attendance.

- The date must be early enough to allow at least several weeks between defense and final deadline for turn-in to Graduate School.

- Why?
  - Committee corrections, advisor proof, proofreader and advisor re-check may take that long

- Do not ask for extension to the Graduate School final deadline - they cannot give it.
Q: How many hours should I be registered for as a full time graduate student?

- To receive a GAFP or a Graduate Research Assistantship (GRA), a student must be registered for a minimum of 9 hours per semester — i.e. 27 hours over three semesters — Fall, Spring and Summer.
Q: I am on a GAFP — what does this mean?

- GAFP stands for Graduate Assistant Fellowship Program. A GAFP student is classified as a ‘Trainee’ per Graduate School guidelines.
- GAFP funding is provided by the Graduate School to various UAB units. Students with exceptionally high GRE scores and academic credentials are considered for GAFP fellowship.
- Limited GAFP slots (funds) are available each year and they are typically awarded for one academic year per student, for e.g. August 15 of current year to August 14th of next year.
Q: When I am off the GAFP - does that mean my funding stops?

- The GAFP funds are typically available to the trainee for a year, for e.g. August 15 of current year to August 14th of next year.

- Following the GAFP, the student transitions to funding on a sponsored research project – typically facilitated by the faculty advisor. The student must be in touch with the faculty advisor so that a funding gap does not occur.

- Each faculty advisor strives to maintain continuous funding for his/her student, however funding situations vary semester to semester – so periodic checking with the advisor is recommended.
Q: I am on a Graduate Research Assistantship (GRA) — what does this mean?

- A student on a GRA is supported on research funding — typically covered by the faculty research advisor.
- These funds are in the form of federal funded efforts (for e.g. NSF, DOE, DOT, NIH etc.), state funded efforts (for e.g. ALDOT), industry and other.
- Individual faculty members can provide specifics of the research expectations/tasks and deliverables as part of the GRA assignment. A GRA is considered as a UAB employee.
Q: It is past the registration deadline and I have not yet registered (for xxxx reason...). What should I do?

- All deadlines must be closely followed. In the event of an emergency or demonstrated situation outside the student’s control, an Appeals Form that is available on the graduate school website must be filled out according to the instructions.

- The reason for delay in registration must be explained on the form, which is then signed by the Student, Faculty Advisor and the Graduate Program Director.

- This form gets submitted to the Graduate School and it is ultimately the Graduate School’s decision whether to approve or not.
Q: Should I be registered for Graduate Seminar (MSE 601/701) each semester?

A: A full time graduate student is required to be registered for 1 credit hour of seminar for fall and spring semester. Any student on a GAFP or GRA support is a full time student. Seminar is not typically offered during the summer.
Q: What if I can’t fit the Seminar hour into my schedule?

- A situation may arise where a student is taking 3 courses, each 3 credit hours, which totals to 9 hours total (full time).
- In this case the 1 hour seminar will add up to 10 credit hours. If the student is on an assistantship, 9 hours are covered by the assistantship, the student is responsible for covering the fee for the 1 extra credit hour – i.e. the seminar hour.
Q: I thought I was going to finish everything this semester. I am currently registered as a full-time – 9 semester hours student. I am almost done with my writing, but it looks like I will only be able to defend next semester. How many hours should I be registered for next semester?

- A student should be registered for a minimum of 3 credit hours in the graduation semester. Please note; this reduced load is only allowed if minimal additional help is needed by the faculty advisor.

- A student writing and defending during a semester must register for the full 9 hours.
Q: I have finished my course work – or almost finished my course work. I have a job / I am currently working and not currently enrolled in school this semester. I want to present my research proposal to the committee. Do I need to be registered in school to give my research proposal?

A: To be able to do graduate student functions, such as doing a proposal defense – a student must be registered for a minimum of 3 hours.
Q: As a PhD student, what are my options — do I have to write a full dissertation or a set of peer-reviewed journal papers? How many papers do I need?

- MSE PhD students have two routes to consider for their PhD dissertation. A full dissertation would include a traditional document that is structured with an Abstract, Literature Review, Materials and Methods, Experimental Findings, Modeling, Results and Discussion, Conclusions and References.

- Alternatively, the work may fall into well separable pieces that can be published as individual peer-review journal articles. In such a case, the dissertation can be arranged as a minimum of three peer-reviewed journal publications separated by adjoining brief sections (usually 2-4 pages long) demonstrating connectivity of the work. At least one of the three papers has to be submitted and be accepted for publication prior to scheduling the final defense.

- A common introduction and closing section must be included. The faculty mentor and the student work together in determining the best format for a student's work; i.e. a full dissertation or a paper compilation based dissertation.
Q: I am writing my dissertation. When should it get to the committee?

A: The dissertation must be compiled with consultation of the research advisor. The document is to be sent to the committee members at least 10 days in advance of the date of the final defense. The 10 day period will give the committee members time to evaluate and provide meaningful input at the time of the final defense.
Q: *I need to schedule my final defense. What is involved?*

It is recommended that the student check with his/her committee members for 3 possible dates. An e-mail indicating these possible dates must be sent to Ms. Cynthia Barham, so she can check for room availability for these dates. The Spring and Fall semesters are busy and it is not always easy to find a room. It should not be assumed that the choice of a single date would ensure a room.

Once Ms. Barham confirms availability of room and resources for a given date, this must be communicated to advisor and the committee members immediately.
Q: What should I do when the defense date is confirmed.

A: Ms. Barham will prepare a notification of the defense date to the Graduate School. The graduate school prepares its paperwork for the final defense. This includes the ‘Approval Form’ and some other things that must be in the student’s possession at the time of the defense. The Graduate School announces the public defense. It is important that the PhD defense is an open public defense.
Q: What does Application for Degree mean? When does this take place?

A: An Application for Degree is a form that has to be filled out and received in the Graduate School Records Office no later than 3 weeks into the expected semester of graduation. The faculty advisor and the Graduate Program Director have to sign this form prior to submission to the Graduate School. The final defense can only be scheduled after the Application for Degree is submitted. All this takes place in the graduation semester.
Q: When can I defend?

The final defense has to be held per Graduate School deadlines each semester. Please check the graduate school website routinely to check for defense deadlines for graduation in any given semester. For example, for a May 09, 20xx graduation ceremony, the defense has to be held by March xx, 20xx.
Q: What should I expect for my Thesis/Dissertation defense after the committee asks me to “step out of the room”?

The committee will deliberate and inform the student about the outcome of the defense. With the assumption that the student has passed, all recommended changes to the thesis or dissertation have to incorporated with 10 days of the defense. The thesis/dissertation must be professionally proof-read and it must be demonstrated that the document has been professionally proof-read and edited per recommendations for formatting, grammar, context etc. The final thesis/dissertation after approval by the faculty mentor must be checked by the Graduate Program Director prior to submission to the Graduate School.
“The truly educated never graduate.”
But it is good to get done, anyway.