

MSE 580
Technical Review and Assessment
Syllabus

This is the suggested guideline for those taking MSE 580.

A. Course Details

A.1. Meeting Details

- Meeting Place: None – independent study
- Meeting Time: None – independent study

A.2. Instructor:

- Course Instructor – chair of the student’s M.S. committee

A.3. Course Material

- Required Textbook: None – students perform a technical review using the literature available in the data bases of the UTK libraries.

A.4. Catalog Description:

- 3 Credit Hours
- Preparation of critical review of literature in area related to materials science and engineering. Must be taken by students in the non-thesis option.
- Registration Permission: Consent of faculty committee.

B. Course Objectives:

The objective of MSE 580 is accurately stated in the catalog: “preparation of critical review of literature in area related to materials science and engineering”. There are specific details to the objective for three cases of students as described below.

C. Three Cases of Students taking MSE 580

There are three typical cases for students enrolled in MSE 580.

Case I. Non-Thesis Masters – Course Work Only

Students who are pursuing a non-thesis Master of Science degree in Materials Science & Engineering either as a stand-alone degree or as part of the five-year B.S./M.S. program are not required to perform research. The non-thesis Master’s degree is a course-work only path to the M.S. In this case, the work expected in MSE 580 is exactly as described in the catalog: “Preparation of critical review of literature in area related to materials science and engineering”

Case II. Non-Thesis Masters – Course Work + Supplemental Research

Students who are pursuing a non-thesis Master of Science degree in Materials Science & Engineering either as a stand-alone degree or as part of the five-year B.S./M.S. program are sometimes engaged in performing research. In this case, the technical review expected in MSE 580 may, at the student’s option, be a combination of critical literature review and research results.

Case III. Concurrent Non-Thesis Masters on the way to a Ph.D.

Students who are pursuing a doctoral degree in Materials Science & Engineering can opt to also obtain a non-thesis Master of Science degree along the way. The recommended timing for this non-thesis M.S. is to have the MSE 580 work culminate with the PhD dissertation proposal (also known as the Comprehensive Exam in the language of the Graduate School). In this case,

the technical review expected in MSE 580 can be a combination of critical literature review (performed as part of any PhD study), research results to date, and proposed future work.

D. Technical Review Expectations

The expectations for the technical review for MSE 580 include (i) a thoroughly referenced written report, suggested to be nominally ten pages or more in length, and (ii) an oral presentation, suggested to be nominally twenty-five minutes or more in length. Because the course requires a critical literature review, an absolute minimum of twenty references from the archival literature is required. The content of this technical report and oral presentation vary only slightly for the three cases described above.

Case I. Non-Thesis Masters – Course Work Only

In this case, the written report and the oral presentation cover the critical literature review.

Case II. Non-Thesis Masters – Course Work + Supplemental Research

In this case, the written report can be either a critical literature review or the draft of a paper to be submitted for publication based on research performed. The oral presentation covers the same content.

Case III. Concurrent Non-Thesis Masters on the way to a Ph.D.

In this case, the written report is the same document as the written document submitted in fulfillment of the Ph.D. proposal. The oral presentation is the same oral presentation given at the proposal defense and used to satisfy the Graduate School's Comprehensive Examination requirement.

E. Non-Thesis M.S. Advisor

Students pursuing any graduate degree must have a "Chair of the Committee", also called an advisor. Best practices for choice of advisors and committee members are discussed below. Composition of the committee must follow the rules established by the UTK Graduate School and summarized in the MSE Graduate Handbook.

Case I. Non-Thesis Masters – Course Work Only

In this case, often the student has not assembled a committee until they are in the last semester of their non-thesis MS course work, when they are taking MSE 580. The default chair of the committee is the Director of the MSE Graduate Program. However, any professor at any rank in the MSE department can serve as chair of this committee. Students are encouraged to ask a faculty member with expertise in the material subject of their technical review to chair their committee. Students work with their chair to assemble the rest of the committee.

Case II. Non-Thesis Masters – Course Work + Supplemental Research

In this case, the chair of the committee is the student's research advisor. If this advisor is outside the MSE department, consult with the Director of the MSE Graduate Program to confirm the advisor and committee.

Case III. Concurrent Non-Thesis Masters on the way to a Ph.D.

In this case, the chair of the committee and the rest of the committee is the same as the student's doctoral committee.

F. Timeline

- In the beginning of the semester of taking MSE 580, ensure to prepare and submit the Admission to Candidacy Master form to MSE Director of Graduate Studies, who will ensure the student and committee be familiar with this document.
- Semester before taking MSE 580, identify chair of committee (advisor). Ask that professor to have a section of MSE 580 created in their own name, then register for it.
- First Week of Semester: Submit one page description of technical review to advisor for approval. Confirm composition of committee with advisor.
- Second Week of Semester: Schedule date of oral presentation during the last week or second to last week of the semester. Confirm date with all committee members.
- At least one Week before oral presentation, share draft of report and presentation with advisor for feedback.
- Strictly follow the Graduate School on the deadline to deliver the presentation and written report to the committee, and ensure to prepare and submit the Pass/Fail form to MSE Director of Graduate Studies in time (this is usually 3 weeks before the graduation ceremony).

G. Grading Policy

The grade for MSE 580 is assigned by the chair of the committee in consultation with the other committee members.

Grade Breakdown

Assignment	Percentage of Course Grade
● Oral Presentation	50%
● Written Report	50%
● Total	100%

Course Grades

Course grades will be assigned on the following basis:

90.0 - 100.0	A
85.0 - 89.99	B+
80.0 - 84.99	B
75.0 - 79.99	C+
70.0 - 74.99	C
60.0 - 69.99	D
00.0 - 59.99	F

The student needs to be reminded that a grade of D or below cannot satisfy the degree requirement. Additionally, the Graduate School has a GPA requirement of 3.0 or above for graduation (B is 3.0).

H. Getting Help

Because MSE 580 is a semester-long independent study project, it is possible to become disconnected from the work and the timeline. Students should consult with the chair of the committee at any time during the semester should any obstacles to the successful completion of the technical review arise. Don't wait until the last week to address an issue that, through procrastination, has become a crisis. All non-thesis M.S. students need MSE 580 to graduate.