

The School of Chemistry and Materials Science

**Materials Science and Engineering
Master of Science Program**

Graduate Student Handbook

2026 - 2027 Academic Year

Updated: 9/2026

Table of Contents

<u>Materials Science and Engineering MS Program</u>	3
.....	
<u>Application and Admission</u>	4
.....	
<u>Admission</u>	
<u>Requirements</u>	
<u>International Students</u>	
<u>Readmission</u>	
<u>Academic Standing</u>	
<u>RIT Non Discrimination Statement</u>	
.....	
<u>Financial Assistance</u>	7
.....	
<u>Scholarships</u>	
<u>Assistantships</u>	
.....	
<u>Program Requirements and Course Administration</u>	9
.....	
<u>Orientation</u>	
<u>Advisor</u>	
<u>Course Academics</u>	
<u>Core Courses</u>	
<u>Course Outlines</u>	
<u>Electives</u>	
<u>Grading</u>	
<u>Enrollment</u>	
.....	
<u>Program Faculty</u>	10
.....	
<u>Thesis</u>	11
.....	
<u>Schedule</u>	
<u>Thesis Components</u>	
<u>Research Advisor</u>	
<u>Graduate Committee</u>	
<u>Proposal Meeting</u>	
<u>Public Seminar</u>	
<u>Oral Examination</u>	
<u>Written Thesis</u>	
<u>Certification</u>	
<u>Thesis Guidelines</u>	
.....	
<u>Project</u>	13
.....	
<u>Schedule</u>	
<u>Project Components</u>	
<u>Research Advisor</u>	

[Graduate Committee](#)
[Project](#)
[Work Product](#)
[Certification](#)
[Project Guidelines](#)

Advanced Certificate

15

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Materials Science and Engineering MS Program

Materials Science and Engineering (MSENG-MS) Program

MSENG-MS Director/Professor	Senior Staff Specialist	Graduate Admissions Counselor
Scott Williams Institute Hall – 4110 (585) 475-3033 sawppr@rit.edu	Marsha Tyler Gosnell – 2102 (585) 475-4174 mxtsch@rit.edu	Lindsay Lewis Bausch & Lomb – A146 (585) 475-5532 lsiges@rit.edu
Materials Science and Engineering Master of Science Degree RIT		

The School of Chemistry and Materials Science (SCMS) offers a Master of Science (MS) graduate degree in Materials Science and Engineering (MSE), first introduced in 1985. The MSE degree program offers options designed to fill the needs of the full-time graduate student, as well as enabling practicing materials scientists and engineers in the greater Rochester industrial community to pursue an advanced degree on a part-time basis.

SCMS offers two 30-credit hour program options leading to the MSENG-MS degree; the thesis option and the project option. There is the opportunity to switch between options during the course of the degree if circumstances warrant.

Thesis	Project
Designed for students seeking a traditional research-intensive master's degree	Designed to offer students a flexible program that can be tailored to their career interests
● Focused study within a specific field of materials science and engineering, culminating with the submission and defense of a written thesis ● Thesis is 9 credit hours of research ● Prepare a traditional thesis document that's publicly accessible and present an oral thesis defense ● Students will take a total of four graduate level elective courses ● Thesis work may be conducted at an industrial site, provided that it culminates in a written public thesis ● Recommended for students planning to further their education in a doctoral program and those wishing for an in-depth extended research experience	● Breadth and flexibility in the academic program ● Research project is a 3 credit hour, grade-bearing, course ● Research culminates in a proposed work product that may be publicly disseminated or resides in a professional workplace setting ● Students will take a total of six graduate level (600+) elective courses ○ Independent Study credit(s) may qualify ● Students are encouraged to investigate Cooperative Educational experiences (Co-Ops) ● Ideal for part-time students

BS/MS Degrees:

RIT Students from Microelectronic Engineering, Chemical Engineering, Chemistry, Physics, and Packaging Science may opt for a dual degree pathway to obtain both their BS and MSENG-MS degree within 5 years. Such plans should be discussed early in the undergraduate process with the home department; however, decisions are not made until the middle or end of the third year (**by credits**) as an undergraduate.

Prior to applying for one of the above RIT undergraduate programs, a student may take advantage of the pre-approval program managed by the Combined Accelerated Bachelor's/Master's Accelerated Scholars program ([CABM](#)). Students wishing to pursue this option should inquire with the director of the MSE program and consult their current undergraduate academic advisor. Upon acceptance to the MSE program, a Change of Program form will be completed to reflect the updated degree plan. All BS/MS applicants must speak with Student Financial Services prior to being accepted to the MSE program. Each student should be fully informed and advised on what the additional year will mean for them financially.

Application and Admission

Starting your RIT Graduate application is quick and easy. The online application will typically take 15-20 minutes to complete. All you need to get started is to submit the online application and pay the application fee. You may upload other required documents at that time or at a later date in your admissions portal.

[Application Process and Instructions](#) | [Graduate Admissions](#)

Admission

The Materials Science and Engineering MS program accepts applications on a rolling basis, meaning, there is no specific deadline for applications; applications will be accepted and reviewed throughout the year.

Once the application is received, your graduate admissions counselor will contact you via email to acknowledge receipt of your application and let you know if any necessary items are missing from your application.

You may log in to your admissions portal at any time to monitor and track the receipt of your application credentials, upload new supporting documents, and change your email address or password. Your admissions portal also hosts a checklist to aid in determining what is needed to complete your application.

[Admissions Portal](#) | [Graduate Admissions](#)

Admission Requirements:

Location	Term	Deadline	Letters of Recommendation	Entrance Exam	Portfolio	GPA(out of 4.0)	English Language Scores	STEM Designated
On Campus	Fall Spring	Rolling	2	None	No	3.2, or equivalent	TOEFL – 79 IELTS – 6.5 PTE – 58	FT – Yes PT – No

International Students:

To apply for a student visa, U.S. government regulations require international students to demonstrate that they have sufficient financial resources to meet the costs of tuition, fees, supplies, and living expenses for at least nine months of full-time study.

[Accepted International Students](#) | [Graduate Admissions](#)

Readmission

Students who leave a graduate program, or have a lapse in enrollment greater than or equal to three terms, including summer, and wish to return to that program must reapply through the Office of Graduate Enrollment Services. All student applications are subject to admissions standards at the time of reapplication. The program of study shall be subject to review and may be rewritten. Previous waiver and/or transfer credit may be lost, and program deficiencies may need to be made up. Readmission applications are handled according to the following procedure:

- Students who left the program with a GPA of 3.0 or better (were in good academic standing) and are returning to the program within two years of the time their last course was completed will be readmitted to the program upon submitting a readmission application.
- Students who left the program with a GPA of 3.0 or better and return to the program later than two years after their last course was completed must meet the current admission standards for readmission. The program of study shall be subject to review and may need to be revised. Previous waiver and/or transfer credit may be lost, and program deficiencies may need to be remedied.

- Students who left the program with a GPA below 3.0 must meet current admissions standards for readmission. The decision to reaccept the student to the program will be based on all information, including previous graduate level work. Previous waiver and/or transfer credit may be lost and program deficiencies may not be remedied. In addition, the School of Chemistry and Materials Science committee or program director will decide which previous courses, if any, will be applicable toward the degree.
- In all cases, students must complete the program within seven years of the date the earliest course counted toward their degree program. A student must be **continuously enrolled in at least one credit** (except Summer terms) during the seven year span to remain in good academic standing (see below). A student who has not completed their degree requirements within the seven-year period must petition the Materials Science & Engineering Graduate Program Director for re-admission via a written letter that outlines why the petitioner was not able to complete the degree in the required time. Documented evidence supporting the petitioner's claim may be requested at that time. The final decision to pursue a petition for readmission to Graduate Studies at RIT is solely at the discretion of the Materials Science and Engineering Graduate Program Director. If a petition is to be forwarded to RIT Office of Graduate Studies for review, the dean of graduate studies will decide whether to re-admit the candidate. In no case, is the decision automatic, and the petitioner may have their petition denied for any reason.

[RIT Policy D02.0 - Admission](#)

Academic Standing

Each degree-seeking graduate student will generate two different grade point averages that appear on the transcript; cumulative and term averages. The university cumulative average reflects all course work completed at RIT at the graduate level. The term average reflects a single term of academic activity. Each graduate student has a program average used for degree certification that is manually calculated by the academic unit and reflects course work completed at RIT applicable to graduation in the MSE program.

- Any degree-seeking graduate student whose cumulative and/or program grade point average falls below a 3.00 after 9 credit hours (attempted or earned) subsequently will be placed on probation and counseled by the graduate program director (or his/her designee) concerning continuation in the graduate program.
- Students on probation must raise their program cumulative and program grade point average to 3.00 within 9 credit hours (attempted or earned) or they will be suspended from the graduate program.
- A graduate student suspended for academic reasons, must apply for readmission.
- A suspended student cannot enroll in any credit or non-credit course at the university while on suspension.
- A suspended student may appeal a suspension decision. Individual colleges and/or programs may set limitations on the number of appeals a student can submit.
- A suspension may be waived upon written appeal to the student's home program. Final suspension waiver approval requires dean (or designee) approval. For programs housed outside the college structure, the approval of the director of the academic unit in which the enrollment is requested is required.
- A suspended student may be required to satisfy specific academic conditions imposed in order to be considered for readmission to his/her program.
- A suspended student may be admitted to another program if it is approved by the dean (or designee) of the college in which enrollment is requested. For programs housed outside the college structure, the approval of the director of the academic program in which the enrollment is requested is required.

[RIT Policy D05.1 - Academic Actions and Recognitions](#)

RIT Non Discrimination Statement:

RIT does not discriminate. RIT promotes and values diversity within its workforce and provides equal opportunity to all qualified individuals regardless of race, color, creed, age, marital status, sex, gender, religion, sexual orientation, gender identity, gender expression, national origin, veteran status, or disability.

The Title IX Coordinator has overall responsibility for the university's institutional compliance with Title IX. Any person with a concern about the university's handling of a particular matter related to sex or gender-based discrimination or harassment should contact:

Stacy DeRooy

Director of Title IX and Clery Compliance

Title IX Coordinator

171 Lomb Memorial Drive

Rochester, NY 14623

(585) 475-7158

Stacy.DeRooy@rit.edu

www.rit.edu/titleix

Any person may report sex discrimination, including sexual harassment, in person, by mail, by telephone, or by electronic mail, using the contact information listed for the Title IX Coordinator, or by any other means that results in the Title IX Coordinator receiving the person's verbal or written report. Reports may be made regardless whether the person reporting is the alleged victim of any conduct that could constitute sex or gender-based discrimination or harassment. Reports may be made at any time (including during non-business hours) by calling the telephone number noted above, by electronic mail, by mail to the office address listed for the Title IX Coordinator, or by filing a report on line with RIT's Title IX Office.

The U.S. Department of Education, Office for Civil Rights (OCR) is a federal agency responsible for ensuring compliance with Title IX. OCR may be contacted at 400 Maryland Avenue, SW, Washington, DC 20202-1100, (800) 421-3481.

Financial Assistance

Applicants can indicate their desire for financial awards in the online application portal. Students are considered for RIT graduate scholarships just by applying for admission; no separate application is necessary. Any matriculated student who wishes to be considered for a financial award should also notify the Director of the Materials Science and Engineering Graduate Program.

All financial awards come with the student's responsibility of staying in good academic standing (GPA of 3.0 or greater) and making steady progress toward their degree. If these criteria are not met, the award will not be renewed, and may be revoked. This process of review and evaluation is to ensure that financial award recipients fulfill their primary goal in the program, obtaining their degree.

[Graduate Education Funding Sources | RIT](#)

Scholarships

Graduate scholarships entitle an awardee to receive tuition remission. Graduate scholarships may be renewed provided the recipient is in good academic standing.

Graduate Tuition Scholarships:

- Typically, up to 30% tuition scholarship range is merit-based on an applicant's admissions package.
- Offered to top candidates in recognition of academic excellence and outstanding admission credentials.
- Those offered a graduate scholarship will receive a scholarship letter in their admissions portal at the time they are notified of their acceptance.

RIT Master Plan:

- A 45% Graduate tuition scholarship
- Offered to students who graduate with at least a bachelor's degree from RIT after December 2019.
- Students in a Combined Accelerated Bachelor's/Master's program are not considered for this scholarship.

RIT Master Up NY:

- A 30% Graduate tuition scholarship
- Offered to New York State residents with a bachelor's degree or anyone who graduates with at least a bachelor's degree from a college or university in New York State.
- Students in a Combined Accelerated Bachelor's/Master's program are not considered for this scholarship.

Assistantships

Full-time graduate students may be offered assistantships and can receive wages or stipends in exchange for work performed. Assistantships are competitive and selective, do not cover tuition costs, and may not be awarded until after you are enrolled as a graduate student.

Graduate Teaching Assistant:

Graduate Teaching Assistants (GTA) are hired to assist in the offering of specific courses during a given semester. The time spent per week teaching, grading, and advising will commensurate with the number of courses for which they are responsible. Assignments are made at the discretion of the faculty member of record for each course.

In addition to these courses, several undergraduate programs within the College of Science and College of Engineering frequently hire MSE graduate students for assistantships. Interested students should reach out to such programs directly.

Graduate Research Assistant:

A Graduate Research Assistantship (GRA) is a funded research position associated with a specific research laboratory or research advisor. Such awards are made at the discretion of the individual research advisors and their available funding. GRAs generally receive a stipend or hourly wages depending upon the available funding from the advisor. The term of a GRA appointment is one semester and may be renewable depending on the research advisor's needs.

Program Requirements and Course Administration

The Materials Science & Engineering graduate program is a 30-credit hour program leading to the Master of Science degree in Materials Science and Engineering. Students can choose from a Thesis or Project option to fulfill the degree requirements. All Materials Science and Engineering graduate students, regardless of their chosen option, must demonstrate proficiency and mastery in one area. Proficiency is determined by performance on graduate level coursework, and mastery is demonstrated by the successful completion of a thesis or capstone project.

Orientation

All newly matriculated graduate students must arrive a week in advance of their first academic semester allowing time to find a residence, get acclimated to the campus, and participate in the graduate student orientation week. Orientation is run in formal group activities prior to the fall semester. Students who enter the program during the other academic semesters will receive a personal orientation by a member of the Materials Science and Engineering Graduate Committee. The Program will enroll first year students into their core courses after deposits have been paid, and roughly one month prior to classes. During Orientation Week, the student will learn how to enroll into courses using the student information system portal. The student will then opt to enroll in one additional elective course. Courses may be dropped/added during the drop/add period which typically spans the first week of classes each term.

During orientation, new graduate students will:

- be introduced to the faculty
- be introduced to their classmates
- review the MSENG-MS program guidelines
- be advised on course registration
- take an OSHA certified laboratory safety course

Advisor:

The Director of the MSE Program will act as the Academic Advisor for students. Each student should take an active role in seeking out a potential Research Advisor and Graduate Committee for their thesis or project.

Course Academics

SCMS offers two 30-credit hour program options leading to the MSENG-MS degree; the Thesis Option and the Project Option. Whether graduate students choose the Thesis Option or the Project Option, there are 3 core courses, totalling 9 credits, all MSE students must take designed to introduce them to the field of MSE.

Core Courses:

MTSE-601 (Fall)	MTSE-704 (Fall)	MTSE-705 (Spring)
Intro to Materials Science 3 credits	Theoretical Methods 3 credits	Experimental Techniques 3 credits

Course Outlines:

Thesis	Project	MSE Electives (Examples)
MTSE-790 – Research & Thesis 9 credits	MTSE-777 – Graduate Project 3 credits	Any Graduate Level Course at 600+ or above. (Only 3 credits of MTSE-799 will be accepted as an elective)
Electives – 12 credits	Electives – 18 credits	

Electives:

The MSE program is designed to reflect a diverse and varied field of work by allowing for a significant amount of flexibility with regards to elective courses, including those outside of the School of Chemistry and Materials Science.

Courses for elective credit are chosen from the 600 and 700 numbered courses. Courses below the 600 level can not be chosen to fulfill the graduate Materials Science and Engineering course requirement.

Provided is a list of suggested course tracks and the associated elective courses based upon general student interest. These tracks can help students locate courses that will be particularly useful, given their career interests. Course tracks are merely suggestions based upon faculty suggestion and historical enrollments. There is no requirement to declare an interest track or take courses from only a single track.

[MSENG-MS Course Tracks](#)

Grading

Any course in which a grade of C-, D, or F is obtained will not apply toward the courses required to graduate. However, courses in which a grade of C+, C, C-, D, or F is received *may be repeated*. Keep in mind that repeating a course will incur additional financial burdens. Grades, for the same course, will be averaged, and not replaced. Only successful completion of a course will count toward the credit total. F grades most often occur if an incomplete grade in a course (grade of "I") has not been remedied within one academic semester of the official end of the course.

Obtaining less than a B- as a graduate student should be treated as a worrisome development. A student that is performing poorly in coursework should endeavor to work closely with the faculty members delivering their courses, as well as their advisor to ensure a positive outcome. In order to certify with a degree upon completion of the required credits, the cumulative graduate GPA must be 3.0 or higher. If a GPA is below this average, additional coursework may be required until the graduate grade point average requirement is fulfilled.

Enrollment

All course enrollment and scheduling occurs using the Student Information System (SIS).

Elective courses that are outside of the College of Science may require the “home department” to register the student for the course. **Students must reach out to that department regarding electives they manage**, as these courses may require approval from the instructor. If all else fails, reach out to the MSE Program Director and staff specialist for additional assistance.

MTSE-777, MTSE-790, MTSE-793, and MTSE-799 can only be added to a schedule by submitting a formal email request to the MSE Program Director and staff specialist. Student’s must include their UID and Research Advisor in their request.

If full-time equivalency (FTE) is required (typically toward the end of the plan of study), a request to the MSE Program Director and staff specialist must be made in writing (email). An FTE is typically requested when a student remains active on campus while completing final degree requirements, or for financial or immigration status reasons. If a student plans to complete final degree requirements off-campus, an FTE is typically not required.

Program Faculty

[Program Faculty | Materials Science and Engineering](#)

Thesis

The Thesis Option is a focused study within a specific field of Materials Science & Engineering, culminating with the submission and defense of a written thesis. Students will register for nine credit hours of research under the supervision of a member of the Materials Science and Engineering Graduate Faculty. This research should be original research that can lead to a publication in a scientific journal and presentation at a scientific meeting. The Thesis Option is recommended for students planning to further their education in a doctoral program.

Schedule

Once a Research Advisor has been established for a student, the advisor and student will work together to outline the pathway of courses to be pursued through the program. An example of an MSEN-MS Thesis schedule:

	Year One		Year Two		
Semester	Fall	Spring	Fall	Spring	Credits
Core Courses	MTSE-601	MTSE-705			9
	MTSE-704				
Electives	Elective - 1	Elective - 2 & 3	Elective - 4		12
Research	MTSE-790				9
	----- <i>Variable up to 9 credits, as determined by the student & research advisor. To be taken over the course of at least 2 semesters.</i>				
	A minimum of 30 semester credit hours beyond a BS degree is required to obtain an MSENG-MS degree				Total: 30

Students have the responsibility of maintaining their schedule and program of study. Reach out to the School of Chemistry and Materials Science Department Head and/or the Director of the MSE Program to ask questions and obtain answers regarding scheduling.

Thesis Components

Research Advisor:

During or immediately after the second semester, graduate students in the thesis option should choose a faculty member who will serve as their Research Advisor. Any member of the Program or Program Allied Materials Science and Engineering Faculty can serve as an advisor. In some cases, other RIT faculty may serve in this capacity. In both cases, the selection must be approved by the potential advisor and the MSE Program Director.

Graduate Committee:

Students completing a thesis must arrange for **two (2) additional graduate committee members**. Any full time RIT faculty may serve as a graduate committee member. Committee members from outside RIT are possible with approval, such as when a student is working closely with a company or research

group at another institution. In all cases, the MSE Program Director will serve as one of the committee members.

White Form (Thesis Intent) is in Appendix (No signatures are required). This White Form is turned into Director toward the end of the first semester where MTSE 790 is scheduled.

Proposal Meeting:

Toward the end of the first MTSE 790 term, the MS Thesis Option student is required to organize a Thesis Proposal Meeting with the Committee. This is an informal, usually one hour, meeting where the student presents their thesis plan and progress to the Graduate Committee (usually 15 or 20 minutes) as described in the Thesis Intent form. The student will then obtain advice and direction. There is no form associated with this activity.

Public Seminar:

The thesis seminar is given in conjunction with the thesis defense. This seminar is based on the thesis research and is followed by a question and answer period conducted by the seminar audience and the Thesis Committee. A thesis draft must be provided to the Graduate Committee at least two weeks before this event. In rare cases, the closed door session with the Graduate Committee may be scheduled at a separate time, but is not advised. The Thesis student will reach out to the staff assistant to plan and announce the presentation.

Oral Examination:

Thesis students must also pass an oral thesis defense. Every oral exam is to be culminated by a discussion (in the student's absence) of the student's performance and progress. The Graduate Committee's decision and recommendations will be shared with the examinee.

Thesis Grading Sheet – See Appendix

Written Thesis:

A written thesis including a student's research progress is the final product for the Thesis Option MSE degree. The thesis must be approved by the student's Graduate Committee, the Director of the Materials Science and Engineering Graduate Program, and accepted by the RIT library as an approved publication.

[ProQuest Submission Guide | RIT Libraries](#)

Certification:

Students in the Thesis Option MSE program will be certified for their degrees when the following materials are presented to the Director of the Materials Science and Engineering Graduate Program:

- Proof of matriculation
- Completion of required 30+ credit hours with an overall GPA of 3.0 or higher
- **Completed and signed Thesis Grading Form**
- **Copy of the ProQuest Accepted Publication email**
- **Copy of the filled out Signature Page**
- **By the date set by the Registrar for Certification: [Certification Calendar 2026-2027.pdf](#)**

Thesis Guidelines

[Thesis Calculator – Project Management Tool | RIT Libraries](#)

[Thesis Submission Guidelines | RIT Libraries](#)

[Proper Title Page | RIT Libraries](#)

[Abstract Example | RIT Libraries](#)

[Signature Page | RIT Libraries](#)

[Thesis Checklist | RIT Libraries](#)

[Copyright Basics | RIT Libraries](#)

Project

The Project Option is for students desiring more course study in their academic program. Students fulfill the degree requirements through course work and completion of a capstone project. The capstone project accounts for three semester credit hours and must culminate in a capstone work product (e.g., public presentation or report) of the project results. Students may use industrial projects to complete their MS degree requirements within the context of this option. The Project Option is ideal for part-time students or those wishing to complete a multi-disciplinary MS degree.

Schedule

Example of an MSENG-MS Project Option Course Grid:

	Year One		Year Two		
Semester	Fall	Spring	Fall	Spring	Credits
Core Courses	MTSE-601	MTSE-705			9
	MTSE-704				
Electives	Elective - 1	Elective - 2 & 3	Elective - 4, 5, & 6		18
Research				MTSE-777	3
	A minimum of 30 semester credit hours beyond a BS degree is required to obtain an MSENG-MS degree				Total: 30

Students have the responsibility of maintaining their schedule and program of study. Reach out to the School of Chemistry and Materials Science Department Head and/or the Director of the MSE Program to ask questions and obtain answers regarding scheduling.

Project Components

Research Advisor:

During or immediately after the second semester, graduate students in the project option should choose a faculty member who will serve as their Research Advisor. Any member of the Program or Program Allied Materials Science and Engineering Faculty can serve as an advisor. In some cases, other RIT faculty may serve in this capacity. In both cases, the selection must be approved by the potential advisor and the MSE Program Director.

Graduate Committee: There is NO graduate committee for a Project Student. The Research Advisor will determine the grade of the work product. Any issues may be addressed by consultation with the Program Director.

White Form (Project Intent) – see Appendix. This form is submitted to the Program Director within the first two weeks MTSE 777 is scheduled.

Project:

Students choosing the project option take 3 credits of a capstone project (MTSE-777). Students may perform their project at an industrial or government site. External industrial research can be proprietary within the context of the project option, but all of the student's committee must have access to the project. A non disclosure agreement (NDA) may be required in the case of proprietary work.

Work Product:

In the Project Option, mastery of the subject area is demonstrated by a capstone experience project. Students must produce a work product as indicated in the approved Project Intent form. Evaluation of the project will be completed by the Research Advisor, but input from the Graduate Committee is welcome, but not required.

Yellow Form (Project Completion Form) – See Appendix.

Certification:

Students in the Project Option MSE program will be certified for their degrees when the following materials are presented to the Director of the Materials Science and Engineering Graduate Program:

- **Proof of matriculation**
- **Completion of required 30+ credit hours with an overall GPA of 3.0 or higher**
- **Completed Project Intent Form**
- **Completed and signed YELLOW form (Project Completion Memo)**

Project Guidelines

[Thesis Calculator – Project Management Tool | RIT Libraries](#)

[Capstones and Projects | RIT Libraries](#)

[Chicago Manual of Style | RIT Libraries](#)

[RIT Scholar Works | RIT Libraries](#)

Advanced Certificate

Additionally, SCMS offers a graduate **certificate** in materials science and engineering that develops the foundation of materials-oriented knowledge, conceptualization, product development, and production decisions needed to thrive in engineering.

The advanced certificate in materials science and engineering is specially designed to establish a common base of materials-oriented knowledge for students with baccalaureate degrees in chemistry, chemical engineering, electrical engineering, mechanical engineering, physics, and related disciplines. The program provides a new intellectual identity to those interested in the study of advanced materials and offers a serious interdisciplinary learning experience in materials studies, crossing over the traditional boundaries of such classical disciplines as chemistry, physics, and electrical, mechanical, and microelectronic engineering.

[Materials Science and Engineering Advanced Certificate | RIT](#)

What is a Graduate Certificate?

A graduate certificate, also called an advanced certificate, is a selection of up to five graduate level courses in a particular area of study. It can serve as a stand-alone credential that provides expertise in a specific topic that enhances your professional knowledge base, or it can serve as the entry point to a master's degree. Some students complete an advanced certificate and apply those credit hours later toward a master's degree.

Course Academics

The advanced certificate may be completed on a full- or part-time basis. Part-time students are normally limited to a maximum of two courses, or 6 credit hours, each semester.

Core Courses:

MTSE-601	MTSE-704	MTSE-705
Intro to Materials Science 3 credits	Theoretical Methods 3 credits	Experimental Techniques 3 credits

Electives:

The MSE program is designed to reflect a diverse and varied field of work by allowing for a significant amount of flexibility with regards to elective courses, including those outside of the School of Chemistry and Materials Science.

Courses for elective credit are chosen from the 600 and 700 numbered courses. Courses below the 600 level can not be chosen to fulfill the graduate certificate course requirement.

APPENDIX:

Gant Chart for Thesis

Project Intent Form (White)

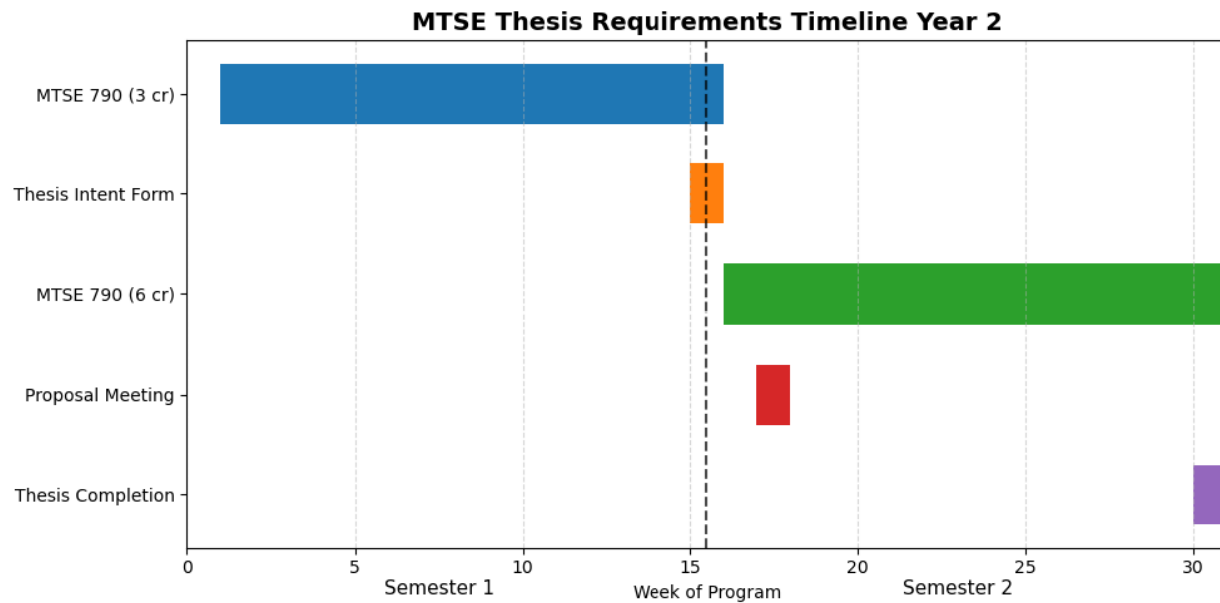
Thesis Intent Form (White)

Thesis Grading Form (Yellow)

Project Grading Memo (Yellow)

GANT CHART FOR THESIS – MTSE 790 and 799 need to be registered by the Director. Student is to email the Director with name, UID and advisor's name during the registration period BEFORE the thesis work begins.

Project Students – must send an email to the director to sign up for MTSE 777 with name, UID and advisor's name during registration in the term before taking Project.



Materials Science & Engineering MS Program

Thesis Intent (White Form) 2026-2027

Student and Advisor Information			
	Name (No Signatures Required)		Date
Student Name/UID			
Research Advisor			
Committee Member			
Committee Member			

MSE Thesis Description (Fill Out Each Section; See Example Provided in Appendix.)

Title for Proposed Work:

Description or Abstract of Proposed Research:

Objectives and Anticipated Timeline: (Timeline is agreed upon once submitted. It may be amended but a new form needs to be received by the Director's office within the term.)

Anticipated Date for Proposal Review:

Proposed Thesis Presentation and Defense Date:

This form is due by the LAST WEEK of the term you are signed up for MTSE790. You must not do all nine (9) credits in one term. It is usually 3crs Fall and 6cr Spring. Your Proposal Review is usually Week 2 or 3 of the second term you are taking MTSE790 credits.

Title for Proposed Work:

Effects of crystalline structure on the specific catalytic activity for hydrogen production of hierarchally-structured Ti/TiO₂ catalysts

Description or Abstract of Proposed Research:

Transition to a hydrogen-based economy depends on our ability to develop economically-feasible, hydrogen-generation processes, for example via water electrolysis. One of the key elements for industrial hydrogen generation is the use of an affordable and scalable catalyst for water electrolysis. It was recently demonstrated that a hierarchically-structured Ti/TiO₂ catalysts can be used for water electrolysis at over-potentials comparable to other emerging hydrogen catalysts. The goal of the present work is to expand on that proof-of-principle, and explore whether tuning of the TiO₂-crystalline structure can improve the electrocatalytic activity of the catalysts. In order to answer this question, catalysts of identical hierarchical structure but two different crystalline structures, amorphous and anatase, will be synthesized and tested for their electrocatalytic activity to promote the hydrogen-evolution-reaction (HER) in acidic medium. Tafel slopes and other indicators of electrocatalytic activity will be compared among the samples in order to draw a conclusion.

Objectives and Anticipated Timeline:

The objectives of the work are as follows:

1. Build background and skills in electrochemical methods
2. Synthesize samples of identical hierarchical-structure or architecture
3. Tune the crystalline structure of the TiO₂ layer without changing the catalyst architecture
4. Test the identical samples for electrocatalytic activity
5. Analyze data and draw conclusions
6. Present findings in a written document and an oral presentation

TIMELINE:

- * Objective 1 - October through December 2020
- * Objectives 2, 3 & 4 - mid-January through March 2021
- * Objectives 5 & 6 - April 2021

Expectations for Completed Thesis or Project:

The expected educational outcomes of the proposed project are as follows:

1. Skill set and experience in experimental electrochemical methods
2. Exposure to electrocatalysis
3. Training in data analysis, and summary of findings

The expected deliverables are as follows:

1. Written technical document on methods and findings.
2. Oral technical presentation on methods and findings.

These questions may be answered in a separate document or email.

Materials Science & Engineering MS Program

Project Intent (White Form) 2026-2027

Student and Advisor Information			
	Name (No Signature Required)		Date
Student Name/UID			
Research Advisor			

MSE Project Description (Fill Out Each Section; See Example Provided in Appendix.)

Title for Proposed Work:

Description or Abstract of Proposed Research:

Objectives and Anticipated Timeline: (Timeline is agreed upon once submitted. It may be amended but a new form needs to be received by the Director's office within the term.)

Proposed Work Product:

This form is due by the SECOND WEEK of the term you are signed up for MTSE777.

ROCHESTER INSTITUTE OF TECHNOLOGY
 Rochester, New York 14623
 School of Chemistry & Materials Science
 MS Program in Materials Science & Engineering
Grading Sheet: Thesis Completion

TO: Head, School of Chemistry & Materials Science

The undersigned state that _____
CandidateStudent Number

a candidate for the Master of Science degree in Materials Science & Engineering has presented a thesis and has taken a thesis defense examination. **Write in a PERCENTAGE SCORE for each category.**

<u>Thesis Grade</u>	<u>Final Oral Grade</u>	<u>Signature</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

DateChairperson, Oral Committee

NOTE: No more than one negative vote on each required phase (thesis and thesis defense) is allowed for successful completion.

If oral examination is not passed, the candidate will be allowed one more chance to achieve this goal.

It is possible to complete the form on different dates. For instance, the oral examination may be given prior to the final evaluation of the written thesis document if the adviser and student wish things to be completed in that order.

DateDirector, Materials Science & Engineering

ROCHESTER INSTITUTE OF TECHNOLOGY
Rochester, New York 14623
School of Chemistry & Materials Science
MS Program in Materials Science & Engineering

Project Completion Memo

TO: Registrar

FROM: _____, Student's Advisor

This is to certify that _____
Candidate Student Number

has satisfactorily completed all the requirements for the degree of Master of Science in Materials Science
& Engineering in the School of Chemistry & Materials Science

This includes the successful completion of the Project entitled: _____

Date Project Advisor

Date Director, Materials Science & Engineering