

**M.S. in Mathematics Handbook**  
**Department of Science and Mathematics**  
**Texas A&M University—Central Texas**



**TEXAS A&M**  
UNIVERSITY  
**CENTRAL TEXAS**

2017-2018

This handbook provides students the information they need to enter and complete the Masters of Science in Mathematics. Questions about the information contained in this document should be directed to the Graduate Coordinator for Mathematics.

## **Welcome**

Welcome to the Masters of Science in Mathematics(MSMTH) program, set within the College of Arts and Sciences and the Department of Science and Mathematics at Texas A&M University-Central Texas (TAMUCT). The MSMTH program is a general mathematics program in the sense that students will have a variety of coursework and project work across many subfields of mathematics and statistics. However, a large selection of electives and options for completing the program provide some individual freedom in designing a students plan to meet their needs and/or interests. Throughout the MSMTH program students will conduct independent research, work in small groups for team problem-solving, and master both theoretical and applied techniques of mathematics and statistics.

## **Program Learning Outcomes**

The program is designed to:

- Establish students' competency in utilizing important mathematical techniques and ideas
- Develop students' abilities in analytical reasoning and quantitative thinking
- Improve students' ability to communicate mathematical ideas and quantitative results both verbally and in writing.

The program provides sufficient resources and opportunities for MSMTH students to obtain adequate preparation for entry-level positions in a number of quantitative fields including but not limited to: Data Science/Analytics, Higher Education, Consulting, and Actuarial Science.

## **Mutual Expectations and Responsibilities**

The MSMTH program, the Department of Science and Mathematics, the College of Arts and Sciences, and the Office of Graduate Studies all expect and demand your intellectual engagement and curiosity, academic integrity, and professionalism. Those who meet these expectations and demands can expect the faculty who contribute to this program to provide you a challenging and safe learning environment, to hold you to high academic standards, and to be professional in all their contact with you. Furthermore, you can expect TAMUCT to offer you the necessary academic resources and ancillary services needed during your career here. Please contact the MSMTH Graduate Coordinator should you have concerns about your ability to meet your expectations or requirements, or should you find a faculty member, a program, or our institution failing to deliver on our promise.

## **MSMTH Directory**

The primary point of contact for the MSLS program is the Graduate Coordinator, Dr. Christopher Thron. You can reach Dr. Thron by email ([thron@tamuct.edu](mailto:thron@tamuct.edu)). Emails will normally be returned promptly. You can also email Dr. Thron directly to arrange a face-to-face, telephone, or online meeting.

Students admitted into the MSMTH are required to meet with the MSMTH coordinator before registering for upcoming semester(s) to discuss course and graduation options. Courses are generally offered on a biannual schedule but some some electives may be offered more or less often due to student interest/demand.

If you have questions about a specific discipline before beginning the MSLS degree, contact the graduate coordinator for the plan that best meets your needs and goals. Potential MSMTH students would do well to consult the faculty members of their desired areas of focus to learn the opportunities and limitations of an MSMTH degree before declaring themselves an MSMTH student.

### **Other Important Contact Information**

*Table 1: Contact Information for Additional Offices*

<i>Office</i>	<i>Location</i>	<i>Phone</i>	<i>Website</i>
College of Arts and Sciences	217 FH	(254) 519-5441	<a href="http://tamuct.edu/departments/artsandsciences/">tamuct.edu/departments/artsandsciences/</a>
Counseling Center	207 WH	(254) 501-5955	<a href="http://tamuct.edu/departments/counseling/">tamuct.edu/departments/counseling/</a>
Information Technology Services	113 FH	(254) 519-5466	<a href="http://tamuct.edu/departments/informationtechnology">tamuct.edu/departments/informationtechnology</a>
Office of Graduate Studies	424 FH	(254) 519-5468	<a href="http://tamuct.edu/departments/graduatestudies">tamuct.edu/departments/graduatestudies</a>
Student Financial Assistance	108 FH	(254) 501-5854	<a href="http://tamuct.edu/departments/financialaid/">tamuct.edu/departments/financialaid/</a>
Student Government Association	105 WH	(254) 501-5909	<a href="http://tamuct.edu/departments/studentgovernment/">tamuct.edu/departments/studentgovernment/</a>
University Library	Warrior Hall	(254) 519-5798	<a href="http://tamuct.edu/departments/library/">tamuct.edu/departments/library/</a>

### **MSMTH Overview**

The MSMTH degree at TAMUCT provides students an opportunity to master theoretical understanding, problem solving skills, and technical skills for applications in a variety of areas and with a variety of relevant software packages.

All MSMTH students are required to take MATH 5305: Probability and Statistics, MATH 5308: Abstract Algebra, MATH 5320: Real Analysis, and MATH 5350: Applied Linear Algebra. Each of these courses are offered once every two years and only one is offered each Fall/Spring semester.

All MSMTH students are required to take 12 hours of Mathematics Electives. These courses

are offered throughout the year including summer semesters and rotate biannually with some variation depending on student demand/interest.

6 additional credit hours of the degree may be taken in math or approved math-related graduate-level electives from an outside department. Because of the close relationship between math and computer science, students are encouraged to take classes in the IS department. Another common choice is statistics—several departments offer statistics at the graduate level: however, only one out-of-department statistics course may be counted towards the degree.

The final 6 credit hours of the MSMTM degree can be completed in one of the following ways:

- Comprehensive Exam Option: An additional 6 elective hours in math or approved graduate-level math related electives from an outside department must be completed along with a comprehensive exam during the final semester prior to graduation. See below for more information on comprehensive exams.
- Thesis Option: Student must complete 6 hours of thesis to be used for research and project completion with a thesis faculty advisor. Thesis projects vary in scope and nature. Specific project guidelines must be determined and communicated by the thesis faculty advisor. In general, this option requires a student to communicate with faculty to establish the project goals, thesis document style/format, and thesis presentation date/time. With this option, a student should identify a faculty member with expertise most closely related to the projects focus area. Students must consult the University Thesis Manual for other general guidelines.

### Statement on the Comprehensive Exam

**Important Note: The semester that the student is to sit for the comprehensive exam, he/she needs to enroll in the non-credit zero (0) hour course, MATH 5090. Please contact the MSLS Coordinator prior to the semester in which you need to enroll in these courses. A student successfully completes the comprehensive exam when he/she earns a “pass” for each part of the exam.**

With the comprehensive exam option, there are two options:

Option 1: The student must discuss with faculty to decide on 3 fundamentally different courses. These courses form the basis of each part of the comprehensive exam. The student can select 2 parts to take as a written exam and 1 part to give as a presentation to the comprehensive exam committee. Preparation materials for each part of the comprehensive exam will be provided.

Option 2: The student takes and passes the actuarial P1 examination.

## **Students Transferring into the MSMTH Program**

Students that transfer into the MSMTH program from another university or after starting another program at TAMUCT should expect to forfeit some if not all prior course work. Students must petition the MSMTH graduate coordinator at the time they are admitted into the MSMTH program to have any previous coursework count toward their new program. The final determination of what will and will not count toward the MSMTH degree resides with the MSMTH graduate coordinator.

## **Guidelines and Procedures for MSMTH Students**

The following guidelines and procedures provided here intend to acquaint students with the general operations of the program and to provide a succinct statement of certain degree requirements. Students are also urged to read carefully the requirements and regulations for the MSMTH degree as listed in the Graduate Catalog.

1. Administration: The MSMTH degree program is administered by the MSMTH Graduate Coordinator.
2. General Admission Requirements: the following policies and requirements apply to all incoming students:
  - a. All students must have either a BS/BA degree in mathematics or a BS/BA degree with sufficient mathematics related coursework including but not limited to Calculus I-III(or equivalent). Students without a BS/BA degree in mathematics will be required to complete leveling courses prior to admittance into the MSMTH program. The amount and nature of the leveling courses are defined on a case-by-case basis and determined by the MSMTH Graduate Coordinator.
  - b. Students must fulfill all requirements for admittance into the Graduate School at TAMUCT.
  - c. Students must complete a Graduation Application by the deadlines set by the Office of Graduate Studies.
  - d. Upon admittance into the MSMTH program, a student must complete a degree plan acknowledgment form with the MSMTH Graduate Coordinator.
  - e. The decision between the thesis or non-thesis option must be made prior to the students completion of 18 hours of coursework.

These guidelines and procedures are not a replacement or correction for the expectations conveyed in the Graduate Catalog. MSMTH students should familiarize and follow the

guidelines described in that document.

### **Graduate Assistantships**

The MSMTM program has limited openings for graduate assistantships each year. Most graduate assistants are assigned to Graduate Coordinators and to other faculty contributing to the MSMTM program. Duties tend to relate to assisting faculty with responsibilities associated with college level instruction and research. Graduate assistantships are generally awarded to the strongest students in the program as a form of meritorious recognition but seniority and availability will be considered as well. The College of Arts and Sciences, the Department of Science and Mathematics, and the MSMTM graduate coordinator award graduate assistantships. Important factors in obtaining a graduate assistantship include: educational background, research interests, career ambitions, applicable skillsets, and academic merit. The Office of Graduate Studies determines eligibility and other rules and regulations pertaining to graduate assistantships.

### **Graduate Student Awards**

Each year the Office of Graduate Studies and Research sponsors a series of awards for graduate students. Awards granted that apply to the MSLS degree program include awards for 1) Scholarship, 2) Professionalism, and 3) Community Service. The Office of Graduate Studies and Research extends a call for nominations for each of these awards during each spring semester. The MSLS program will forward a nominee for any student it deems deserving of one of these awards, with the goal being to nominate one student for each award. If you have questions about these awards or the process of nomination, ask the MSLS Graduate Coordinator.

### **How to Register for Classes**

Online registration through Warrior Web may be the easiest way to register for class. Detailed instructions on how to register through Warrior Web may be found at the following link: <http://www.tamuct.edu/departments/registrar/registrationinstructions.php>. A Registration FAQs is available here: <http://www.tamuct.edu/departments/registrar/registrationfaq.php>. If you have any trouble, you should contact the Office of the Registrar at (254) 519-5452.

### **How to Track Degree Progress**

Students are encouraged to track their progress toward their degree during their career at TAMUCT. You should check your degree progress at least once a semester to ensure that the information is accurate. You can use DegreeWorks as a way to see the courses you have taken and to know what is left to take. Should you find a discrepancy in your record, your first point of contact should be the Officer of the Registrar. If that office is unable to rectify your record, you should consult the MSMTM Graduate Coordinator. Please keep in mind that a course must be taken within six years of your graduation date to count on your degree. No course more than

six years old at the time you graduate will count toward your degree.

NOTE: Tracking your progress is no substitute for academic advisement. MSMTH students are expected to work with the MSMTH Graduate Coordinator before registering for any course taken to satisfy the MSMTH degree. Not every graduate course will count toward the MSMTH degree. Students who “self-advise” (take courses without consulting with the MSMTH Graduate Coordinator) may find that the course they have selected will not satisfy the expectations of the MSMTH degree or may not be offered during a particular semester.

### **Questions about Graduate Study at TAMUCT**

This handbook may leave unanswered or even raise some questions about graduate study at TAMUCT. Should this document fail to answer one of your questions, you might check the website for the Office of Graduate Studies. If you still cannot find your answer, you should contact the MSMTH Graduate Coordinator. Another good point of contact is the administrative assistant for the College of Arts and Sciences. This person can be reached by phone at (254) 519-5449. Students should contact the Student Government Association at TAMUCT for matters affecting graduate students most generally.

### **Your Degree, Your Responsibility**

You are ultimately responsible for your education. The MSMTH program, the Department of Humanities, the College of Arts and Sciences, the Office of Graduate Studies, and TAMUCT will do all they can to allow you to meet program requirements in a timely fashion. However, it is your responsibility to remain aware of all deadlines, to fill out all required forms, and to make sure you are fulfilling educational and administrative requirements. You also need to remain in contact with the MSMTH graduate coordinator to ensure that you are taking courses in the right sequence. In other words, you are responsible for making sure that you fulfill all academic and financial obligations associated with being a graduate student in the MSLS program.

**Texas A&M University-Central Texas  
Advisement Plan  
Master of Science  
Mathematics**

Student Name: \_\_\_\_\_ UIN: \_\_\_\_\_ Date: \_\_\_\_\_

Catalog Year: \_\_\_\_\_ Email Address: \_\_\_\_\_

Telephone: (hm) \_\_\_\_\_ (wk) \_\_\_\_\_

**Core Requirements**

Required Courses	Anticipated Semester	Advising Date	Approval Date	Student Signature	Coordinator Signature	Next Meeting
MATH 5305 Probability and Statistics						
MATH 5308 Abstract Algebra						
MATH 5420 Real Analysis						
MATH 5350 Applied Linear Algebra						
Approved Courses*						

\*Students must meet with the MSMTM Coordinator to receive approval for all courses in the Approved Courses Section. Departments may require some prerequisite courses so students are encouraged to consult the course descriptions in the TAMUCT catalog at <http://catalog.tamuct.edu/course-information/tamuct/> Some courses may not be available for this degree for reasons of licensure or certification.

Students should inform the MSMTM Coordinator the semester before they plan to take the Comprehensive Exam. Students must enroll in MATH 5090 when they are ready to take the Comprehensive Exam. In order to earn degree conferral, a student pursuing the Master of Science in Mathematics must successfully complete the comprehensive exam or a thesis. All approved courses should aid students in creating a foundation for this exam. NOTE: This is a tentative guide to be used for advisement of students. It is not considered an official degree plan by Texas A&M University-Central Texas, and it is subject to review and change by the Texas Higher Education Coordinating Board.