

MS in SOFTWARE ENGINEERING



THE DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

UNIVERSITY OF MINNESOTA

[MSSE.UMN.EDU](https://msse.umn.edu)

CONTACT US

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MASTER OF SCIENCE IN SOFTWARE ENGINEERING

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COLLEGE OF
Science & Engineering





THE SOLUTION IS NOT IN THE TEXTBOOK

Software Engineering is a creative discipline, combining art and science, requiring leadership and pragmatism. Our focus is not to train, but to educate. We help students build

a strong foundation of theory and best-practice knowledge, which they can apply in a variety of technical and business environments today and in the future.

AN ADVANCED DEGREE IN TWO YEARS

Our Master of Science in Software Engineering (MSSE) program is designed for working professionals. The curriculum builds on the experience of participants. We keep class sizes small and most homework is team-oriented. Our students often learn as much from each other as from the faculty and course materials. MSSE students find that they learn something each week that can be applied immediately in their professional practice.

STUDY WITH THE BEST

Why an SE degree from the University of Minnesota? The University of Minnesota is the region's premier research institution and the Department of Computer Science and Engineering (CS&E), under which the University of Minnesota Software Engineering Center (UMSEC) and the MSSE program is housed, is the only Ph.D. granting computer science department in the state. The CS&E department enjoys an international reputation for its excellence in research. You will study with top researchers and highly-experienced professionals who have proven themselves as superb teachers. You will have access to cutting-edge research and the people who are engaged in it. If you are so inclined, you may join a research group and make your own contributions. You will find a wealth of resources and ideas that will enhance your educational experience and your own professional practice.

CONTINUED SUPPORT

Learning does not stop at the end of the semester. Our program boasts a lifelong professional and personal network.

MSSE PROGRAM FORMAT

The MSSE program is a two-year, full-time program that meets on alternating Fridays and Saturdays from 8:00 a.m. until 5:00 p.m. with a break for lunch. Students commonly negotiate about 8 Fridays off per semester with their employers. The average time spent on the program is between 16 and 24 hours per week, including time spent in class. There is a summer break from June until September between the first and second years of the program.

CURRICULUM

The MSSE curriculum is fixed for the first three semesters. The fourth semester includes electives, one of which is an optional, independent project. A total of 30 semester credits and satisfactory performance on at least three class projects is required for graduation.

Curriculum

Fall	Spring	Fall	Spring
Software Engineering 1	Software Design	Software Architecture	User Interface Design & Eval.
Data Modeling	Software Process & QA	Project Management	Elective I
Industrial Seminars	Software Test & Verif.	Industrial Seminars	Elective II
7 credits	8 credits	7 credits	8-9 credits



SEMINARS

Examples:

- Legal & Intellectual Property Issues for Software Engineers
- Software Re-Engineering and Maintenance
- Configuration Management
- Internet Commerce
- Data Warehousing & Data Mining
- Software Engineering Ethics
- Extensible Programming Languages
- Robotics & Real-Time Systems
- Software Engineering in a Start-Up Environment
- Peer-to-peer networking and botnets

ELECTIVES

Choices vary year-to-year based on faculty availability and class vote.

Examples:

- Real-Time & Embedded Systems
- Big Data Strategies & Analytics
- Enterprise Application Development
- Web Application Development
- Dynamic Languages
- Independent Project
- Data Network Security
- Mobile Application Development

PROGRAM COMPARISON

Program	Length	First Year Cost	Total Cost
MSSE	2 years	\$20,400.00	\$40,800.00
St. Thomas MSE	3.5 years	\$13,118.00	\$47,987.45
UMN CS&E Master's	2.5 years	\$19,045.54	\$48,815.15
UMN CS&E Master's	5 years	\$10,564.48	\$49,875.62

*Based on AY 2016-2017 data

*St. Thomas requires 14 credits; UMN MS requires 31 credits; MSSE requires 30 credits

*Tuition increases for other programs taken as average over last 5 years: 3.4% for St. Thomas and 3.0% at UMN

*Figures compiled from publicly available sources

*Comprehensive fee for students entering in Fall 2017 has not been determined

TUITION AND FEES

The MSSE features one comprehensive fee per semester for each entering class. The fee is guaranteed to stay the same throughout your program if you attend 4 consecutive semesters, excluding summer. The comprehensive fee includes textbooks, tuition, mandatory fees, parking, breakfast catering and more. The comprehensive fee for students who started fall 2016 is \$10,200 per semester for four semesters. The fee for students entering fall 2016 has not yet been determined. Other potential fees include a one-time installment fee per semester if you are paying your student bill incrementally and late fees if the student bill is not paid by the due date.

FINANCIAL AID

Financial aid is available for the MSSE program. For more information, see the financial aid website:

admissions.tc.umn.edu/CostsAid/finaid.html or

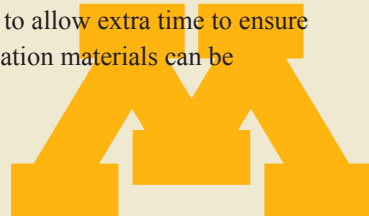
contact Jim Parker at j-park1@umn.edu or 612-626-0750.

ENTRANCE REQUIREMENTS

The MSSE program is selective, and applicants are expected to have professional work experience prior to joining the program. Applicants are normally required to be currently employed with at least one year of work experience, a BS or BA in Computer Science or a related field, and at least a 3.0 grade point average. Other educational backgrounds are considered if professional experience in the field is substantial. GRE results are not required.

INTERNATIONAL STUDENTS

International students should meet the standard entrance requirements and also have a Green Card or Work Visa, official transcripts in English, and have a Minimum Internet Based TOEFL score of 79 or above (with section scores of 21 on writing and 19 on reading), a minimum MELAB score of 80, or 6.5 overall IELTS with 6.5 section scores for both reading and writing. It is recommended that international students apply by May 15th to allow extra time to ensure that visas can be confirmed and all application materials can be obtained from non-US institutions.



APPLICATION PROCEDURE

- www.msse.umn.edu/application-procedure
- **Early application deadline - March 31, 2017**
- **Final application deadline - July 1, 2017**

1. Complete the Graduate School Online Application

You may start, save, and return to it at a later time. The application fees are \$75 for U.S. and \$95 for International applicants. Send all official transcripts from previous academic institutions to the Graduate School. Use the same “statement of purpose” that you will submit with your MSSE Online Application. Do not include recommenders in this application.

2. Complete the MSSE Online Application

This form must be completed and submitted in one session. There is no application fee.

Include your Graduate School Application number (Apply Yourself ID). Provide the names and e-mail addresses of two people who will recommend you for the MSSE program. Two colleagues are acceptable (with at least one person who has supervised your work). Only enter this information in the MSSE application, and do NOT include it in the application to the graduate school.

Upload a file that contains the statement of purpose AND curriculum vitae (CV) or resume in one document.

- Your statement of purpose should be limited to one page, explaining your immediate and long-range occupational objectives in relation to software engineering, being specific about your particular areas of interest. Please describe your current job responsibilities, career goals, and how these fit into the MSSE program. Also include your professional experiences with software engineering.
- Your CV or resume should include your educational background and degrees, professional experience, any teaching or research experience, a list of papers or publications (URLs included), computer languages in which you are proficient and any other information that will advance your application.

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