

# BSE Chemical Engineering/MSE Environmental Engineering SUGS Program

## Introduction/Summary

This sequential graduate/undergraduate study (SUGS) program provides outstanding students in chemical engineering with an interest in environmental engineering the opportunity to receive an MSE degree in Environmental Engineering as part of an uninterrupted five-year program. A student can double count a maximum of 6 credit hours of coursework eligible for graduate credit. A student may also transfer a maximum of 9 credit hours of coursework eligible for graduate credit that they did not use towards their undergraduate degree program. Thus, a student may complete up to 15 credit hours of their MSE degree prior to entering the program; however, according to Rackham guidelines, a student must be registered fulltime for at least two semesters. Each degree is awarded upon completion of the corresponding requirements. Students pursuing dual degrees are not eligible to enroll in SUGS programs.

## Background

There are several reasons students pursue an Environmental Engineering MSE degree in the Environmental and Water Resources (EWRE) program within the Department of Civil and Environmental Engineering (CEE). Some students use it as a first step toward the Environmental Engineering PhD degree. Other students pursue the master's degree to build their knowledge base in order to enhance their qualifications for professional environmental engineering careers. The Master's degree is generally considered to be the first professional level degree for a practicing environmental engineer. Students select the masters-level courses in order to specialize in one of the following areas:

- Eco-hydrology
- Sustainable energy systems
- Water quality process engineering
- Water quality and resources engineering

## Program Description

ChE / EWRE SUGS students must complete all the requirements for the BSE ChE degree. In fulfillment of the technical and some free electives, SUGS students must elect courses that are approved for EWRE graduate credit. The double counted courses, typically CEE 460 or CEE 582, are counted toward fulfilling both the BSE and MSE degrees.

A minimum of 18 hours of the total 30 credit hours required for the MSE in Environmental Engineering must be elected from courses offered by the Department of Civil and Environmental Engineering. It is expected that students will have breadth in the fundamentals of environmental engineering. The following three core classes (9 credit hours) must be completed to fulfill this requirement:

CEE 581 Aquatic Chemistry  
CEE 582 Environmental Microbiology  
CEE 591 Environmental Fluid Mechanics

For additional program requirements, check the MSE Environmental Engineering guidelines, available at <https://cee.engin.umich.edu/academics/graduate/masters/>

**Admission procedure**

Undergraduate students who will be within 6 credit hours of graduation the term in which they start the SUGS program and have a cumulative GPA of at least 3.5 may apply. Students should apply using the regular online Rackham admissions application by January 15 for Fall admission or by October 1 for Winter admission. Applicants should also complete the SUGS election form, which can be found in the CEE Graduate Program Office (2166 GGB) or online at:

<http://www.rackham.umich.edu/downloads/oard-sugs-election-form.pdf>.

Once a student has 6 or fewer credit hours remaining for the undergraduate degree, he/she must officially enroll in the EWRE MSE program for a minimum of two full terms, normally the last two semesters, and pay full graduate tuition for these two terms.

**See the *Sequential Undergraduate/Graduate study (SUGS) Programs for ChE Students* handout for more information regarding how SUGS works.**

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Rackham SUGS website:  
<http://www.rackham.umich.edu/current-students/policies/academic-records/sugs-information>