

# M.S. in Environmental Engineering - Non-Thesis Option (Plan B)

## General Requirements

The Degree of M.S., Environmental Engineering is awarded through either the Civil or Chemical and Biological Engineering Departments, depending on the student's background and professional focus. Degree candidates correspondingly must meet the requirements of the appropriate Department as enumerated below, as well as the requirements of the Graduate School. Each student's graduate adviser and committee will work with the student to prepare a Program of Study listing the courses the student will take. This program must be submitted to the The Graduate School before the end of the second semester of study.

Common requirements for both Departments include:

- Minimum 30 credits total (4xx or 5xx-level)
- Maximum of 9 credits taken at the 4xx level may be included in the program of study
- Courses graded below C- cannot be used to satisfy degree requirements
- Defense of professional paper
- Three credits (minimum) registration required during term of:
  - Comprehensive examination
  - Graduation (or 1 credit with *in absentia* request on file)

Additional specific requirements by department are listed below.

## Civil Engineering Department Specific Requirements

Curriculum requirements for the M.S. degree in Environmental Engineering in the Civil Engineering Department are highly individualized and established in consultation with and approved by the student's graduate committee. The courses listed below are often considered when establishing the program of study for a particular student. There are also many other courses offered at MSU that may support a student's academic goals. The Civil Engineering Department also requires all students to take one credit of graduate seminar - ECIV 594 - during their final semester, which is in addition to the 30 credit minimum.

|          |   |     |
|----------|---|-----|
| EENV 534 | Environmental Engineering Investigation   | 3   |
| EENV 540 | Water Chemistry for Envr Engr             | 3   |
| EENV 561 | Environ Eng Reactor Theory                | 3   |
| EENV 562 | Water Treatment Process/Design            | 3   |
| EENV 563 | Wastewater Treat Proc/Design              | 3   |
| EENV 575 | Research or Prof Paper/Project (Required) | 1-4 |
| EENV 591 | Special Topics                            | 1-3 |
| EENV 592 | Independent Study                         | 1-3 |
| EENV 598 | Internship                                | 2   |
| ECIV 529 | Groundwater Contamination                 | 3   |
| ECIV 594 | Seminar (Required)                        | 1   |
| EBIO 566 | Fundamentals of Biofilm Engr              | 3   |
| ECHM 503 | Thermodynamics                            | 3   |
| ECHM 510 | Reaction Engineering/Modeling             | 3   |
| ECHM 533 | Transport Phenomena                       | 3   |

## Chemical and Biological Engineering Department Specific Requirements

Master of Science in Environmental Engineering degree requirements through the Chemical and Biological Engineering Department are:

## Course Requirements

|                        |  |     |
|------------------------|--|-----|
| ECHM 594               | Seminar (may be taken twice for credit)                                    | 1   |
| ECHM 503               | Thermodynamics   | 3   |
| ECHM 533               | Transport Phenomena  | 3   |
| EBIO 566               | Fundamentals of Biofilm Engr *   | 3   |
| EENV 561               | Environ Eng Reactor Theory   | 3   |
| or                     |  |     |
| ECHM 510               | Reaction Engineering/Modeling  |     |
| EENV 562               | Water Treatment Process/Design *   | 3   |
| EENV 563               | Wastewater Treat Proc/Design *   | 3   |
| EENV 575               | Research or Prof Paper/Project   | 1-4 |
| or EENV 534 & EENV 575 | Environmental Engineering Investigation and Research or Prof Paper/Project |     |
| ECIV 529               | Groundwater Contamination *  | 3   |

\* Substitutions for these course requirements may be approved by the committee after carefully considering the background and professional goals of the student.

Each student's graduate adviser and committee are to work with the student to prepare a program of study listing the courses the student will take. This program must be submitted to The Graduate School before the end of the second semester of study. Note: If the student is attempting to graduate in two semesters, the program of study and application for degree must be submitted by the third week of the second semester.