

## **Emphasis in Advanced Water Technology Requirements – Prior to September 2021**

### **Updated July 14, 2021**

**NOTE:** Students who began their MEng studies prior to September 2021 can qualify for the Advanced Water Technology using the previous requirements listed below.

MEng students who start their studies September 2021 and after must meet the most recent Advanced Water Technology requirements listed on the [Emphasis in Advanced Water Technology website](#).

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Through the Emphasis in Advanced Water Technologies, students are able to gain in-depth knowledge of water treatment methods and design of treatment processes.

Students who complete the emphasis will have their emphasis notated on their transcript.

Students who are pursuing more than one emphasis, can only use maximum of one course that is shared between two emphases.

**Eligibility:** All MEng students in Chemical, Civil, and Materials Science and Engineering.

**Course Requirements:** Same as MEng requirements for the home department.

Civil Engineering: 10 courses, or 8-9 courses and 1 project.

Chemical Engineering: 10 courses, or 7 courses and 1 project.

Materials Science & Engineering: 10 courses, or 7 courses and 1 project.

*Some courses may satisfy the requirements of multiple emphases. Students may double-count a maximum of one course towards the requirements of any two emphases.*

Students cannot earn more than two emphases.

## 2 Core Courses

1. CHE 1150, Industrial Water Treatment
2. At least one of the following (any of the other three can count as a specialization course):
  - CIV 541, Environmental Biotechnology
  - CIV 549, Groundwater Flow and Contamination
  - CIV 550, Water Resources Engineering
  - CHE 565, Aqueous Process Engineering
  - CIV 1303, Water Resources Systems Modeling
  - CIV 1308, Physical/Chemical Treatment Processes

- CIV 1311, Advanced and Sustainable Drinking Water Treatment
- CIV 1319, Chemistry and Analysis of Water and Waste
- CIV 1399, Special Studies in Civil Engineering (*e.g., Water Sanitation and Hygiene; Treatment Wetlands; the topic is subject to obtaining approval from the student's graduate unit*)
- CIV 1499, Special Studies in Civil Engineering (*e.g., Fundamentals of Acid Mine Drainage; the topic is subject to obtaining approval from the student's graduate unit*).
- CME 500, Fundamentals of Acid Mine Drainage

## 2 Specialization Courses

Pick from the following list, or from #2 above:

- - CHE 1213, Corrosion
  - CHE 1430, Hydrometallurgy Theory and Practice
  - JCC 1313, Environmental Microbiology
  - JNC 2503, Environmental Pathways
  - MIE 1807, Principles of Measurements
  - STA 1004, Introduction to Experimental Design

## 6 Additional Courses and/or Project

May include courses not selected from above. Must comply with Departmental requirements.

**Enrolment:** Contact CivMin Graduate Programs Coordinator, [civ.gradprograms@utoronto.ca](mailto:civ.gradprograms@utoronto.ca) after being admitted into the normal MEng program. Enrollment is permitted at any time during your MEng.

**Questions:** Contact CivMin Graduate Programs Coordinator, [civ.gradprograms@utoronto.ca](mailto:civ.gradprograms@utoronto.ca)