

# WATER RESOURCES SCIENCE AND TECHNOLOGY, MASTER OF SCIENCE

## Overview

The WATR Program at A&M-SA is designed with a vision to help our students with gaining a holistic understanding of our water resource system, and to acquire the necessary skills to be successful in their future water-related careers:

- To provide foundational and specialty courses that ensure students' competence at their prospective jobs.
- To instill the concept of a water-centered nexus that expands students' vision imperative for career advancement.
- To expose students to a hands-on learning environment (lab work & internships) that help prepare students with skill sets needed for the water industry.
- To improve our students' ability to process and analyze information through problem-based learning.

## Administrative Officers

Dr. Walter Den, *Graduate Coordinator (Water Resources Science and Technology)*, SciTech Building 349D

## Admissions

### Admission Process

#### Prerequisites

Students must have 18 semester hours of undergraduate courses in:

- Biology,
- Chemistry,
- Geology,
- Physics,
- Environmental Science,
- Engineering, and
- Aquatic Science.

or a combination of these disciplines, including:

- 12 advanced semester hours in these disciplines, and an undergraduate cumulative grade point average
  - between 2.60-2.99 or an undergraduate grade point average of 3.00 or higher for the last 60 semester credits (or 90 quarter credits), and a minimum GRE composite (Q+V) score of 297 (score times 1000 for tests taken prior to August 2011) or
  - between 3.00-4.00 and a minimum GRE composite (Q+V) score of 285 (score times 800 for tests taken prior to August 2011). The Department has the right to examine students' prerequisites and to accept equivalent hours or to require additional work if necessary.

International applicants must demonstrate English proficiency by scoring a minimum TOEFL score of 550 (paper-based), 213 (computer-based) or 79 (Internet-based).

## Degree Requirements

### Curricula

#### Research Track

Code	Title	Credits
<b>Prerequisites</b>		
WATR 5111	Graduate Seminar	1
WATR 5312	Water Laws, Rules and Policy	3
WATR 5314	Pollutants in Environmental Systems	3
WATR 5315	Advanced Municipal and Industrial Wastewater Treatment and Recycling Systems	3
WATR 5320	Statistical Methods in Research	3
WATR 5330	Water Resources Science and Technology Internship	3

#### Research Track

WATR 5306	Thesis (Thesis Proposal and Thesis Completion)	6
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#### Elective Courses

Select 14 hours of WATR 5000 level courses		14
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WATR 5214	Nexus of Water, Energy, and Food	
WATR 5322	Wastewater Treatment for Direct and Indirect Uses	
WATR 5325	Natural and Constructed Green Systems for Wastewater Management	
WATR 5335	Desalination Processes and Emerging Technologies	
WATR 5345	Environmental Impact Assessment of Water Resources	
WATR 5350	Groundwater Management and Field Investigations	
WATR 5355	Institutions and Their Role in Water Resources Management	
WATR 5360	Water Resources Sustainable Use and Conservation Policy and Practice	
WATR 5365	Water Policy Institution Internship	
WATR 5370	US-Mexico Borderlands and Interjurisdictional Water Issues and Policies	

<b>Total Credits</b>		<b>36</b>
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### Professional Track

Code	Title	Credits
<b>Prerequisites</b>		
WATR 5111	Graduate Seminar	1
WATR 5312	Water Laws, Rules and Policy	3
WATR 5314	Pollutants in Environmental Systems	3
WATR 5315	Advanced Municipal and Industrial Wastewater Treatment and Recycling Systems	3
WATR 5320	Statistical Methods in Research	3
WATR 5330	Water Resources Science and Technology Internship	3

#### Professional Track

WATR 5305	Research Project	3
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#### Elective Courses

Select 17 hours of WATR 5000 level courses	17
WATR 5214 Nexus of Water, Energy, and Food	
WATR 5322 Wastewater Treatment for Direct and Indirect Uses	
WATR 5325 Natural and Constructed Green Systems for Wastewater Management	
WATR 5335 Desalination Processes and Emerging Technologies	
WATR 5345 Environmental Impact Assessment of Water Resources	
WATR 5350 Groundwater Management and Field Investigations	
WATR 5355 Institutions and Their Role in Water Resources Management	
WATR 5360 Water Resources Sustainable Use and Conservation Policy and Practice	
WATR 5365 Water Policy Institution Internship	
WATR 5370 US-Mexico Borderlands and Interjurisdictional Water Issues and Policies	
<b>Total Credits</b>	<b>36</b>

## Plan of Study

*This suggested plan of study is intended to be used as a guide in conjunction with official degree requirements outlined in the catalog. While this plan demonstrates a course of study that covers eight semesters, each student's academic path is unique and your timeline may look different. Students should regularly consult with academic advisors as they plan their course schedules as course offerings may vary.*

## Research Track

### First Year

First Semester		Credits
WATR 5314	Pollutants in Environmental Systems	3
WATR 5315	Advanced Municipal and Industrial Wastewater Treatment and Recycling Systems	3
Elective		3
<b>Credits</b>		<b>9</b>

### Second Semester

WATR 5312	Water Laws, Rules and Policy	3
WATR 5320	Statistical Methods in Research	3
Elective		3
<b>Credits</b>		<b>9</b>

### Third Semester

WATR 5330	Water Resources Science and Technology Internship	3
<b>Credits</b>		<b>3</b>

### Second Year

#### First Semester

WATR 5111	Graduate Seminar	1
WATR 5306	Thesis	3
Elective		3
<b>Credits</b>		<b>7</b>

#### Second Semester

WATR 5306	Thesis	3
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Elective	3	
Elective	2	
<b>Credits</b>		<b>8</b>
<b>Total Credits</b>		<b>36</b>

## Professional Track

### First Year

First Semester		Credits
WATR 5314	Pollutants in Environmental Systems	3
WATR 5315	Advanced Municipal and Industrial Wastewater Treatment and Recycling Systems	3
Elective		3
<b>Credits</b>		<b>9</b>

### Second Semester

WATR 5312	Water Laws, Rules and Policy	3
WATR 5320	Statistical Methods in Research	3
Elective		3
<b>Credits</b>		<b>9</b>

### Third Semester

WATR 5330	Water Resources Science and Technology Internship	3
<b>Credits</b>		<b>3</b>

### Second Year

#### First Semester

WATR 5111	Graduate Seminar	1
Elective		3
Elective		3
<b>Credits</b>		<b>7</b>

#### Second Semester

WATR 5305	Research Project	3
Elective		3
Elective		2
<b>Credits</b>		<b>8</b>
<b>Total Credits</b>		<b>36</b>

## Available Electives

Code	Title	Credits
Fall		
WATR 5335	Desalination Processes and Emerging Technologies	
WATR 5370	US-Mexico Borderlands and Interjurisdictional Water Issues and Policies	
WATR 5345	Environmental Impact Assessment of Water Resources	
WATR 5355	Institutions and Their Role in Water Resources Management	
Spring		
WATR 5325	Natural and Constructed Green Systems for Wastewater Management	
WATR 5350	Groundwater Management and Field Investigations	
WATR 5360	Water Resources Sustainable Use and Conservation Policy and Practice	

WATR 5214 Nexus of Water, Energy, and Food

WATR 5322 Wastewater Treatment for Direct and Indirect Uses

Summer

WATR 5365 Water Policy Institution Internship