

Department of Civil and Environmental Engineering

AY 2021-22 MASTER'S DEGREE PLAN OF STUDY ENVIRONMENTAL & ENERGY SYSTEMS

| Name: | Student ID Number: |
|--|--------------------|
| Qrt/Year Expected to Advance to Candidacy: | Email Address: |
| Qrt/Year Expected to Graduate: | GPA: |
| Thesis or Non-Thesis Option: | Thesis Advisor: |

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|----------------------------------|------------------|-------|-------|--------|---|---|
| CORE COURSES (12 Units) | COURSE Number | UNITS | GRADE | QTR/YR | NON-THESIS OPTION 48 Units Total See below for details | THESIS OPTION48 Units TotalSee below for details |
| ADVANCED MATH | | 4 | | | One course required (see page 2) | One course required (see page 2) |
| WATER | | 4 | | | One course required (see page 2) | One course required (see page 2) |
| ENERGY, AIR QUALITY & CLIMATE | | 4 | | | One course required (see page 2) | One course required (see page 2) |
| TOTAL UNITS FOR THIS | SECTION: | | | | | |
| COURSE TITLE | COURSE | UNITS | GRADE | QTR/YR | Electives: 28 Units | Electives: 16 units |
| | | | | | Students must fulfill a minimum of 28 elective units from graduate courses listed on attached list (see page 2). | Students must fulfill a minimum of 16 elective units from graduate courses listed on attached list (see page 2). |
| | | | | | | Thesis Research: 10 units Students can fulfill a maximum of 10 units of CEE 296 MS Thesis Research. |
| TOTAL UNITS FOR THIS | SECTION: | I | | | | |
| COURSE TITLE | COURSE | UNITS | GRADE | QTR/YR | <u>Seminars/Other:</u> (8 out of 48 Units) | <u>Seminars/Other:</u> (10 out of 48 Units) |
| | | | | | <u>Required:</u> 3 units of <u>CEE 295</u> : <u>Seminars in CEE</u> (Max. of 3 units apply to degree requirements). | <u>Required:</u> 3 units of <u>CEE 295</u> : <u>Seminars in CEE</u> (Max. of 3 units apply to degree requirements). |
| | | | | | | Options for the remaining 7 unit |

TOTAL UNITS FOR MS PROGRAM:

| SIGNATURES: | | MS THESIS COMMITTEE MEMBERS: |
|-----------------------------|-------|------------------------------|
| CANDIDATE: | DATE: | CHAIR: |
| FOCUS AREA FACULTY ADVISOR: | DATE: | MEMBER: |
| CEE GRADUATE ADVISOR: | DATE: | MEMBER: |

undergraduate units (10 units max.) undergraduate units (10 units max.)

Please submit form to the Grad. Coordinator by the end of the FIRST quarter of enrollment. Any changes MUST be approved by the Faculty Graduate Advisor.

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Core Requirements (12 Units):

Students entering the program without a M.S. degree must complete the following core requirements before petitioning to Advance to Candidacy for the M.S. Degree:

| Area: | Requirements: | Courses: | |
|---------------------------|------------------------------------|-----------------------|---------------------------------------|
| Advanced | One of the five options (4 units): | ENGRCEE 283 | Math. Methods in Eng. Analysis (F) |
| Mathematics | | ENGRMAE 200A | 0 0 |
| | | ENGRMAE 200B | Engineering Analysis II (W) |
| | | CBE 200 | Applied Engineering Mathematics I (F) |
| | | PHYSICS 229A | Computational Methods (F) |
| Areas of | One course from each of the | | |
| Emphasis | two primary Areas of Emphasis: | | See below under: |
| | (1) Water (4 units) | | |
| | | <mark>'Core Co</mark> | ourses by Areas of Emphasis' |
| (2) Energy, Air Quality & | | | |
| | Climate (4 units) | | |

Elective Courses: Additional course requirements can be fulfilled by using any of the courses below. Other courses can be included with the prior approval of the Faculty Graduate Advisor and Graduate Director (Professor Russell Detwiler: <u>detwiler@uci.edu</u>). Note: For non-CEE courses, please check individual Department schedules to confirm course offerings.

Core Courses by Areas of Emphasis (the following courses can all be used as electives as well)

| Water: | Energy, Air Quality & Climate: | | | |
|--|---|--|--|--|
| ENGRCEE 260 Desalination (*) | ENGRCEE 264 Carbon & Energy Footprint Analysis (S) | | | |
| ENGRCEE 262 Environmental Chemistry (F) | ENGRCEE 267 Energy, Climate Change & Urban AQ (*) | | | |
| ENGRCEE 263 Adv. Biological Treatment Processes (S) | ENGRCEE 274 Climate Data Analysis (W) | | | |
| ENGRCEE 265 Physical-Chemical Treatment Processes (W) | ENGRCEE 298 Wildfires Science & Engineering (S) | | | |
| ENGRCEE 269 Beach Dynamics (S) | EARTHSS 240 Atmospheric Chemistry and Physics | | | |
| ENGRCEE 270 Flood Risk & Modeling (W) | EARTHSS 242 Advanced Atmospheric Chemistry | | | |
| ENGRCEE 271 Flow in Unsaturated Porous Media (F) | ENGRMAE 210 Combustion | | | |
| ENGRCEE 272 Groundwater Hydrology (F) | ENGRMAE 214A Fuel Cell Fundamentals & Tech. | | | |
| ENGRCEE 273 Watershed Modeling (W) | ENGRMAE 215 Advanced Combustion Technology | | | |
| ENGRCEE 276 Hydrology (F) | ENGRMAE 218 Sustainable Energy Systems | | | |
| ENGRCEE 277 Hydrologic Transport Fundamentals (S) | ENGRMAE 260 Current Issues Related to Tropospheric and | | | |
| ENGRCEE 278 Fluid Mechanics of Open Channels (*) | Stratospheric Processes | | | |
| ENGRCEE 279 Environmental Transport Modeling (W) | | | | |
| ENGRCEE 289 Analysis of Hydrologic Systems (S) | Key: (F) Fall Quarter; (W): Winter Quarter; (S): Spring | | | |
| ENGRCEE 290 Merging Models and Data (S) | Quarter; (*): Not offered in 2021/2022. | | | |
| ENGRCEE 291 Hydrologic Remote Sensing (S) | | | | |
| ENGRCEE 292 Wavelets in Hydrology, Eng, & Geoscience (W) | | | | |
| ENGRCEE 298 Intro to Env. Fluid Mechanics & Turbulence (F) | | | | |
| | Other Approved Elective Courses: | | | |
| | ENGRCEE 214 GIS for CEE (F) | | | |
| NOTE: The following can ONLY be included with the prior approval of the Graduate Director. Please email your request to Prof. | | | | |
| Detwiler: detwiler@uci.edu. | | | | |
| 1) Upper-division undergraduate courses. Include a description of the course in your email request | | | | |

1) Upper-division undergraduate courses. Include a description of the course in your email request.

2) MS Thesis Research units can be extended to 16 units. Include email approval from Thesis Advisor in request to Prof. Detwiler.