

# RIVER-COASTAL SCIENCE AND ENGINEERING, PHD

## Overview

The River-Coastal Science and Engineering program is an effort by faculty and students to understand a key component of the Earth system—the linked environments of river basins, deltaic river mouths, and coastal ocean systems. Much of our focus surrounds the nexus issue of water: water exerts a strong control over landform evolution and ecosystem health, and is a priority human need for agriculture, industry, and health.

## Requirements

Tulane requires 48 credit hours of graduate coursework (typically comprised of 16 courses each carrying 3 credit hours) as part of the Ph.D. requirements. For students entering with a Master's degree, the RCSE graduate advisor may approve up to 24 credits of graduate coursework toward the Ph.D. total—this classwork can be earned in SSE or externally. To maintain maximum flexibility in tailoring an interdisciplinary program to the RCSE Ph.D. student, required coursework will be limited to research and writing skill augmentation, as well as typical registration (e.g., dissertation research) required when a student reaches candidacy. To support this tailored program and to rapidly transition decision-making away from the RCSE graduate committee in these matters, we have chosen to institute a very early dissertation committee composition (end of the first semester of matriculation). The Ph.D. student will be required to submit a full program of study (including classwork) approved by their dissertation committee to the RCSE graduate committee by the end of the 2nd full semester of matriculation.

- PhD students can transfer up to 24 credit hours from previous graduate-level coursework to the degree. The RCSE Graduate Advisor must approve all transfer credits.
- Students hoping to transfer graduate credits should prepare and submit the paperwork at the start of their second semester at Tulane. SSE will only transfer credits when the student has completed one semester (it is at that point that a Tulane transcript is available).
- RCSE Ph.D. students will be anticipated to be supported through fellowship, scholarship, or other of the various kinds of assistantships. Hence, they will be required under SSE rules to be registered for at least nine hours of graduate credit until admitted to candidacy to maintain full-time residence status. These nine hours of graduate credit, following SSE standards, may be a combination of course work and research or solely research credit.
- Approved academic graduate electives from other departments can be applied to the degree up to a limit of 12 credit hours. All other courses must originate from RCSE. If a class is not on the approved list, a student may petition the Graduate Advisor for it to be accepted as an elective.
- Note that Ph.D. students must register for credits during the summer due to health insurance reasons
- Unless students have been exposed previously to the material offered, thesis committees will strongly urge students to take two introductory technical course offered by RCSE—the existing RCSE 6800 Introduction to River Science and Engineering, and RCSE 6802 Introduction to Coastal Science and Engineering.

| Course ID | Title   | Credits |
|-----------|---|---------|
| RCSE 6010 | Water Resources Engineering II (offered Fall semester)  | 3       |
| RCSE 6030 | Water Resources Engineering III (offered Spring semester, even years)                                 | 3       |
| RCSE 6040 | Coastal Marine Geology (offered Fall semester, odd years)   | 3       |
| RCSE 6660 | Special Topics (Offered periodically)   | 1-3     |
| RCSE 6710 | Open Channel Flow (offered Spring semester, odd years)  | 3       |
| RCSE 6800 | Intro to River Science & Eng (offered every Spring semester)  | 3       |
| RCSE 6802 | Introduction to Coastal Science and Engineering (offered every Fall semester)                         | 3       |
| RCSE 6810 | River and Stream Restoration (offered Fall, even years)   | 3       |
| RCSE 6820 | Introduction to River-Coastal Hydrologic and Hydraulic Modeling (offered Spring semester, even years) | 3       |
| RCSE 6830 | River Mechanics & Management (offered Spring, even years)   | 3       |
| RCSE 6840 | Methods in River Sampling (offered Spring, odd years)   | 3       |
| RCSE 6850 | Estuarine Processes (offered Spring semester, odd years)  | 3       |
| RCSE 6900 | Independent Study (Every semester)  | 1-3     |
| RCSE 7100 | Seminar in River Coastal Science and Engineering (Every semester)                                     | 1       |
| RCSE 9990 | Dissertation Research   | 3       |

Ph.D. students must enroll in three semesters of the 1 credit Seminar course (RCSE 7100 Seminar in River Coastal Science and Engineering (1 c.h.)). The goal of this is to expose students to state-of-the-art research topics and methodologies in concert with the departmental seminar series. They must also enroll in the 3 credit Technical Writing course (RCSE 7020) that is offered each Fall. Generally students take this class in their third semester.

Additionally, students must enroll in 3 credits of Dissertation Research (RCSE 9990) over two semesters (6 credits total). This is a requirement to advance to candidacy. The student may register for more Dissertation Research credits if desired in previous semesters; however, these credits do not count toward the 48 course credits necessary for the degree. Dissertation Research credits are an additional and different type of credit, and they bring the total credits up to  $24+6=30$ . Note that if all other credit requirements are met, the student can enroll in ONLY 3 hrs of Masters Research to maintain enrollment, i.e. this maintains full time enrollment.

- PhD students must undertake a general (preliminary or qualifying) examination by the beginning of the third academic year of study (5<sup>th</sup> semester). Following SSE guidelines, a student who fails to take the test within a reasonable length of time will be judged not to be making adequate progress towards the degree and will be advised by RCSE not to continue graduate study. Prior to scheduling the examination, the student will give an in person preliminary dissertation prospectus presentation to their committee where they outline the proposed topic of original research, a background of the state of knowledge of the topic, and the progress to date in their work.

Following successful completion of the oral qualifying examination, the student will prepare a dissertation prospectus that focuses on the individual novel research projects that will result in dissertation chapters and eventual peer-reviewed publications. This document will be approved by the dissertation committee for submission to SSE, at which point the student will be advanced to candidacy. Preliminary drafts of this prospectus will be produced in the required RCSE 7020 Technical Writing course.

At the time of submission of dissertation for approval by the committee, a Ph.D. student will be required to have submitted at least one, and preferably two manuscripts for peer-reviewed publication as supervised by their dissertation committee.