

SYLLABUS

Chemistry 190 (Introductory Research) **Chemistry 290 (Sophomore Research)** **Chemistry 390 (Junior Research)**

These courses may be taken only with the consent of the Chemistry Department and are repeatable for credit. Credit obtained cannot be used towards an ACS approved degree and the 120 hour graduation credit minimum. Chem 190, 290, and 390 require Chem 195 as a pre- or co-requisite.

Course Goals and Rationale: These chemistry research courses involve faculty-directed research for first-year (Chem 190), second-year (Chem 290), and third-year (Chem 390) students. Although details of the experience will differ amongst the various faculty-led research groups, nevertheless, in general, the course is intended to: (1) engage student interest in original and forefront scientific research, (2) broaden and build student laboratory and/or computational skills, and (3) help the student develop observational, deductive, creative, and problem-solving skills in the chemical sciences.

Research Activities: Each student will be assigned a research project, which is selected through discussions with the faculty mentor. It will typically align with some aspect of the faculty member's overall research program. The research may involve any combination of the following activities: (1) laboratory experiments, (2) computations, (3) field-work, and (4) reading and contextualization of relevant scientific literature. In addition, the student will participate in research discussions with the faculty mentor and/or other research group members.

Credit Hours: Chem 190, 290, and 390 are one-credit courses. The W&M Credit Hour Policy requires a one-credit course to engage students for at least 45 hours of in-person faculty instruction and outside work per credit. The semester-long time commitment in Chem 190, 290 or 390 is at least 45 hours of student activity, which includes both advisor-supervised and independent activities. Chem 390 additionally requires student attendance at weekly departmental seminars.

Advisor/Student Meetings: The advisor and the student will meet for a minimum of three hours over the course the semester (the amount to be included as part of the 45 total student hours). Part of this time will be used for training of the student in relevant techniques and associated safety protocols.