

# GEOL 122: HYDROLOGY RESEARCH EXPERIENCE

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## In Workflow

1. GEOL Committee Chair (steven.skinner@csus.edu)
2. GEOL Chair (amy.wagner@csus.edu)
3. NSM College Committee Chair (mikkel.jensen@csus.edu)
4. NSM Dean (datwyler@csus.edu)
5. Academic Services (torsetj@csus.edu; cnewsome@skymail.csus.edu)
6. Senate Curriculum Subcommittee Chair (curriculum@csus.edu)
7. Dean of Undergraduate (james.german@csus.edu; celena.showers@csus.edu)
8. Dean of Graduate (cnewsome@skymail.csus.edu)
9. Catalog Editor (torsetj@csus.edu)
10. Registrar's Office (w lindsey@csus.edu)
11. PeopleSoft (PeopleSoft@csus.edu)

## Approval Path

1. Mon, 04 Oct 2021 18:55:39 GMT  
Amy Wagner (amy.wagner): Approved for GEOL Committee Chair
2. Mon, 04 Oct 2021 18:56:11 GMT  
Amy Wagner (amy.wagner): Approved for GEOL Chair
3. Sun, 10 Oct 2021 21:15:42 GMT  
Thomas Krabacher (tsk): Rollback to GEOL Committee Chair for NSM College Committee Chair
4. Thu, 14 Oct 2021 14:55:44 GMT  
Steven Skinner (steven.skinner): Rollback to Initiator
5. Mon, 18 Oct 2021 20:15:45 GMT  
Steven Skinner (steven.skinner): Approved for GEOL Committee Chair
6. Mon, 18 Oct 2021 21:12:04 GMT  
Amy Wagner (amy.wagner): Approved for GEOL Chair
7. Wed, 20 Oct 2021 23:26:56 GMT  
Thomas Krabacher (tsk): Approved for NSM College Committee Chair
8. Wed, 20 Oct 2021 23:45:03 GMT  
Shannon Datwyler (datwyler): Approved for NSM Dean

## New Course Proposal

Date Submitted: Mon, 18 Oct 2021 19:42:30 GMT

**Viewing: GEOL 122 : Hydrology Research Experience**

**Last edit: Mon, 18 Oct 2021 19:42:29 GMT**

Changes proposed by: Amelia Vankeuren (218611017)

**Contact(s):**

Name (First Last)	Email	Phone 999-999-9999
Amelia Vankeuren	vankeuren@csus.edu	916-278-7385

**Catalog Title:**

Hydrology Research Experience

**Class Schedule Title:**

Hydrology Research Experience

**Academic Group: (College)**

NSM - Natural Sciences & Mathematics

**Academic Organization: (Department)**

Geology

**Will this course be offered through the College of Continuing Education (CCE)?**

No

**Catalog Year Effective:**

Fall 2022 (2022/2023 Catalog)

**Subject Area: (prefix)**

GEOL - Geology

**Catalog Number: (course number)**

122

**Course ID: (For administrative use only.)**

202829

**Units:**

3

**Is the primary purpose of this change to update the term typically offered or the enforcement of prerequisites at registration?**

No

**In what term(s) will this course typically be offered?**

Fall term only

**Does this course require a room for its final exam?**

Yes, final exam requires a room

**Does this course replace an existing experimental course?**

No

**This course complies with the credit hour policy:**

Yes

**Justification for course proposal:**

This is a new course that is designed to follow a mandatory 10-day Hydrology summer field experience (students receive a stipend for participating in the field experience, so do not register for it). The field experience and course are part of a funded National Science Foundation GEOPATHs Undergraduate Preparation award to develop a Hydrology learning ecosystem. This course will teach research skills like data interpretation and hypothesis testing using the data collected during the field experience, as well as professional development skills like science communication, applying for internships, and networking with hydrology professionals.

NSF funding will be used to run the first three years of the field experience. Data about student outcomes from the first 2 years will be used to support the submission of larger grants that will allow the field experience and this course to continue in the long term. At least 2 larger grant proposals are planned for programs such as the U.S. Department of Agriculture (USDA) Hispanic-Serving Institutions Education Grants (HSI) Program, the Department of Education Hispanic- Serving Institutions Science, Technology, Engineering, or Mathematics and Articulation (HSI STEM) Program, and the U.S. Forest Service (USFS) Pacific Southwest Research Station Focused Initiatives Program.

**Course Description: (Not to exceed 80 words and language should conform to catalog copy.)**

Hydrology research and professional development experience. Students will learn hypothesis development and testing, data interpretation, and science communication skills focusing on data collected during a summer Hydrology field experience. Students will also learn about Hydrology career paths, apply for internships, and present research findings. Students must participate in the summer Hydrology field experience prior to taking this class.

**Are one or more field trips required with this course?**

No

**Fee Course?**

No

**Is this course designated as Service Learning?**

No

**Does this course require safety training?**

No

**Does this course require personal protective equipment (PPE)?**

No

**Does this course have prerequisites?**

No

**Does this course have corequisites?**

No

**Graded:**

Letter

**Approval required for enrollment?**

Instructor Approval

**Course Component(s) and Classification(s):**

Lecture

**Lecture Classification**

CS#02 - Lecture/Discussion (K-factor=1WTU per unit)

**Lecture Units**

3

**Is this a paired course?**

No

**Is this course crosslisted?**

No

**Can this course be repeated for credit?**

No

**Can the course be taken for credit more than once during the same term?**

No

**Description of the Expected Learning Outcomes: Describe outcomes using the following format: "Students will be able to: 1), 2), etc."**

Students will be able to:

- 1) Develop and test multiple hypotheses
- 2) Analyze and interpret data they collected
- 3) Prepare and present findings through a poster/oral presentation
- 4) Describe Hydrology degree tracks and career opportunities
- 5) Prepare a resume and internship application appropriate to a specific job announcement

**Attach a list of the required/recommended course readings and activities:**

GEOL 122 Draft Syllabus.docx

**Assessment Strategies: A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above.**

- Final presentation (ELO 1,2,3)
- Submit internship application (ELO 5)
- Exams (ELO 1,2,4)
- Homework (ELO 1,2,4)

**For whom is this course being developed?**

Majors in the Dept

**Is this course required in a degree program (major, minor, graduate degree, certificate?)**

No

**Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer)?**

No

**Will there be any departments affected by this proposed course?**

No

**I/we as the author(s) of this course proposal agree to provide a new or updated accessibility checklist to the Dean's office prior to the semester when this course is taught utilizing the changes proposed here.**

I/we agree

## **University Learning Goals**

### **Undergraduate Learning Goals:**

Competence in the disciplines  
Knowledge of human cultures and the physical and natural world  
Intellectual and practical skills

**Is this course required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?**

No

## **GE Course and GE Goal(s)**

**Is this a General Education (GE) course or is it being considered for GE?**

No

### **Reviewer Comments:**

**Thomas Krabacher (tsk) (Sun, 10 Oct 2021 21:15:42 GMT):** Rollback: This course is an NSF proposal collaboration with the Forest Service. Due to its funding, clarification is needed on how the course will function in the long term. Is it the intention of the department to continue this course, along with the summer field experience after funds have run out? The course has been approved by the college CRC pending submission of justification specifications.

**Steven Skinner (steven.skinner) (Thu, 14 Oct 2021 14:55:44 GMT):** Rollback: See request for details from college committee.

Key: 14594