

# CE 231: MODERN HYDROLOGIC TECHNIQUES

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## In Workflow

1. CE Committee Chair (fogarty@csus.edu)
2. CE Chair (fellb@csus.edu)
3. ECS College Committee Chair (figgess@csus.edu)
4. ECS Dean (kevan@csus.edu)
5. Academic Services (torsetj@csus.edu;%20cnewsome@skymail.csus.edu)
6. Senate Curriculum Subcommittee Chair (curriculum@csus.edu)
7. Dean of Undergraduate (james.german@csus.edu;%20celena.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. Thu, 17 Sep 2020 02:35:48 GMT  
Julie Fogarty (fogarty): Approved for CE Committee Chair
2. Thu, 17 Sep 2020 16:12:55 GMT  
Benjamin Fell (fellb): Approved for CE Chair
3. Thu, 01 Oct 2020 16:28:21 GMT  
Gareth Figgess (figgess): Approved for ECS College Committee Chair
4. Fri, 16 Oct 2020 17:18:59 GMT  
Kevan Shafizadeh (kevan): Approved for ECS Dean

## New Course Proposal

Date Submitted: Thu, 17 Sep 2020 02:24:32 GMT

**Viewing: CE 231 : Modern Hydrologic Techniques**

**Last edit: Fri, 16 Oct 2020 17:18:51 GMT**

Changes proposed by: Julie Fogarty (218645519)

### Contact(s):

Name (First Last)	Email	Phone 999-999-9999
Cristina Poindexter	cristina.poindexter@csus.edu	916-278-6982

### Catalog Title:

Modern Hydrologic Techniques

### Class Schedule Title:

Modern Hydrologic Techniq

### Academic Group: (College)

ECS - Engineering & Computer Science

### Academic Organization: (Department)

Civil Engineering

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

No

### Catalog Year Effective:

Fall 2021 (2021/2022 Catalog)

### Subject Area: (prefix)

CE - Civil Engineering

### Catalog Number: (course number)

231

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

107726

**Units:**

3

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

Spring term only - even years

**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:**

Graduate CE courses are being renumbered to clarify course topic areas to help students plan their path to graduation and be consistent with the undergraduate CE course numbers. Prerequisites numbers (not courses) are being changed to reflect course number changes that occurred in the undergraduate program in 2019-2020.

This is not a new course. It is being proposed as a new course so that the existing number can be reused for another course. There is no change to the content (course description, ELOs, assessment) for this course. It is simply a number change.

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

Analyses of hydrologic and meteorologic phenomena by mathematical, statistical, and system methods, linear and non linear, stochastic and parametric hydrology, computer applications in hydrology.

**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?**

Yes

**Prerequisite:**

CE 130 or CE 131 and ENGR 203 or instructor permission.

**Prerequisites Enforced at Registration?**

Yes

**Does this course have corequisites?**

No

**Graded:**

Letter

**Approval required for enrollment?**

No Approval Required

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

Seminar

**Seminar Classification**

CS#05 - Seminar (K-factor=1 WTU per unit)

**Seminar 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.'**

After successfully completing this course, you will be able to:

1. Construct mass and heat budgets to solve problems in hydrology
2. Describe temperature and wind speed profiles in the atmosphere and the effects of atmospheric stability
3. Apply the technique of eddy covariance to determine energy and water fluxes
4. Identify and quantify different components of a surface energy budget
5. Use and compare different methods for quantifying evaporation such as the Penman and Penman-Montieth models
6. Describe how radar is used to quantify precipitation
7. Apply the technique of singular spectrum analysis to understand hydrologic cycles
8. Summarize and critique a journal article in the area of hydrology

**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.**

Homework Assignments (ELO's 1-7)

Exams (ELO's 1-7)

Project (ELO 8)

**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?**

Yes

**Indicate which department(s) will be affected by the proposed course:****Department(s)**

Civil Engineering

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****Graduate (Masters) Learning Goals:**

Critical thinking/analysis

Communication  
Information literacy  
Disciplinary knowledge  
Professionalism

**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

**Is this a Graduate Writing Intensive (GWI) course?**

No

Key: 14322