

CE 130L: HYDRAULICS LABORATORY

In Workflow

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Approval Path

1. Sat, 12 Oct 2019 03:21:36 GMT
Julie Fogarty (fogarty): Approved for CE Committee Chair
2. Mon, 14 Oct 2019 17:59:55 GMT
Benjamin Fell (fellb): Approved for CE Chair
3. Fri, 25 Oct 2019 16:31:01 GMT
Troy Topping (troy.topping): Approved for ECS College Committee Chair
4. Fri, 25 Oct 2019 16:52:38 GMT
Kevan Shafizadeh (kevan): Approved for ECS Dean

History

1. Sep 20, 2019 by Julie Fogarty (fogarty)

Date Submitted: Sat, 12 Oct 2019 03:08:09 GMT

Viewing: CE 130L : Hydraulics Laboratory

Formerly known as: CE 135

Last approved: Fri, 20 Sep 2019 14:01:02 GMT

Last edit: Sat, 12 Oct 2019 03:08:08 GMT

Changes proposed by: Julie Fogarty (218645519)

Contact(s):

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|-------------------|----------------|--------------------|
| Benjamin Fell | fellb@csus.edu | (916) 278-8139 |

Catalog Title:

Hydraulics Laboratory

Class Schedule Title:

Hydraulics Lab

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 2020 (2020/2021 Catalog)

Subject Area: (prefix)

CE - Civil Engineering

Catalog Number: (course number)

130L

Course ID: (For administrative use only.)

202957

Units:

1

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

Fall, Spring

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:

The lecture course corresponding with this laboratory course Water Resources Engineering (CE 130) will become a co-requisite. Making the corresponding lecture course a co-requisite will improve student learning because students will participate in the laboratory experiments related to the lecture course material the same semester not one or more semesters later (as is often the case currently).

Undergraduate CE courses are being renumbered to clarify course pre- and co-requisites and topic areas to help students plan their path to graduation. CE 135 will become CE 130L. CE 130 and 130L will be co-requisites meaning students must take CE 130 and CE 130L together unless a student has already successfully completed one course in the co-requisite pair.

The writing prerequisite is simplified to be consistent across upper division civil engineering lab courses.

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

Laboratory experiments relating the principles of fluid mechanics to real fluid flow. Laboratory three hours.

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 101. WPJ Score of 70+ or equivalent. Not currently enrolled in CE 130L.

Prerequisites Enforced at Registration?

Yes

Does this course have corequisites?

Yes

Corequisite:

CE 130

Corequisites Enforced at Registration?

Yes

Graded:

Letter

Approval required for enrollment?

No Approval Required

Course Component(s) and Classification(s):

Laboratory

Laboratory Classification

CS#16 - Science Laboratory (K-factor=2 WTU per unit)

Laboratory Units

1

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."

- 1) Apply concepts from hydraulics to civil engineering problems
- 2) Write organized lab reports that provide adequate evidence for claims and effectively integrate figures and tables.
- 3) Operate three different devices for flow measurement in pipes and evaluate the advantages and disadvantages of each.
- 4) Measure energy losses in pipes and fittings and contrast energy losses in rough and smooth pipes and different types of fittings.
- 5) Measure pump performance and identify the best operating point for a particular pump and system.
- 6) Operate weirs to measure open channel flow and evaluate the accuracy of these flow measurement devices.
- 7) Operate an acoustic flow measurement device and identify how velocity varies across a channel
- 8) Measure the characteristics of a hydraulic jump including head loss and compare them to theoretically obtained values

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

CE130L (F19).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.

Pre-lab exercises (ELO 1)
 Lab reports (ELO 1-8)
 Exam (ELO 1,3-8)

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

Yes

Has a corresponding Program Change been submitted to Workflow?

Yes

Identify the program(s) in which this course is required:**Programs:**

BS in Civil Engineering

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

Integrative learning

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

Key: 534