

CE 273: GROUND MODIFICATION ENGINEERING

In Workflow

1. CE Committee Chair (fogarty@csus.edu)
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3. ECS College Committee Chair (mohammed.eltayeb@csus.edu)
4. ECS Dean (arad@csus.edu)
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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. Tue, 14 Sep 2021 18:32:27 GMT
Julie Fogarty (fogarty): Approved for CE Committee Chair
2. Fri, 17 Sep 2021 22:42:46 GMT
Ghazan Khan (khan): Approved for CE Chair
3. Fri, 24 Sep 2021 18:15:29 GMT
Mohammed Eltayeb (mohammed.eltayeb): Approved for ECS College Committee Chair
4. Tue, 28 Sep 2021 05:38:33 GMT
Behnam Arad (arad): Approved for ECS Dean

Date Submitted: Mon, 13 Sep 2021 21:54:57 GMT

Viewing: CE 273 : Ground Modification Engineering

Formerly known as: CE 283

Last edit: Fri, 24 Sep 2021 18:15:21 GMT

Changes proposed by: Julie Fogarty (218645519)

Contact(s):

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Catalog Title:

Ground Modification Engineering

Class Schedule Title:

Ground Modification Engr

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 2022 (2022/2023 Catalog)

Subject Area: (prefix)

CE - Civil Engineering

Catalog Number: (course number)

273

Course ID: (For administrative use only.)

107796

Units:

3

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

No

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:

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.

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

Principles of soil stabilization and earth reinforcement; mechanical compaction and treatment of difficult soils, including expansive soils, collapsible soils, oversize materials, and compressible fill; prefabricated vertical drains and preloading; dynamic deep compaction; vibro compaction; vibro-replacement; rammed aggregate pier; compaction grouting; jet grouting; slurry grouting; chemical grouting; deep soil mixing; slurry trench walls.

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 170 and CE 170L or equivalent.

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."

- 1) Evaluate subsurface conditions and apply dynamic deep compaction for ground improvement.
- 2) Evaluate subsurface conditions and design vibro compaction and vibro replacement methods for ground improvement.
- 3) Design aggregate piers for foundation support.
- 4) Evaluate and apply slurry grouting, chemical grouting, compaction grouting, jet grouting, and fracture grouting.
- 5) Design deep soil mixing method for foundation support and seepage control.
- 6) Design prefabricated vertical drains for settlement control.
- 7) Design slurry walls for seepage control and lateral earth support.
- 8) Evaluate other methods of ground modifications, e.g., dynamic replacement, rapid impact compaction, blast densification, vibro concrete columns, micropiles, ground freezing, heat treatment, electro-treatment, and bio-treatment.

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 (ELOs 1-8)

Exams (ELOs 1-8)

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

Please attach any additional files not requested above:

CE273 SyllabusV2.pdf

Key: 593