

# CE 243: TRAFFIC FLOW THEORY

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## In Workflow

1. CE Committee Chair (fogarty@csus.edu)
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3. ECS College Committee Chair (figgess@csus.edu)
4. ECS Dean (kevan@csus.edu)
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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 02:36:01 GMT  
Julie Fogarty (fogarty): Approved for CE Committee Chair
2. Thu, 17 Sep 2020 16:13:46 GMT  
Benjamin Fell (fellb): Approved for CE Chair
3. Thu, 01 Oct 2020 16:30:51 GMT  
Gareth Figgess (figgess): Approved for ECS College Committee Chair
4. Fri, 02 Oct 2020 15:49:31 GMT  
Kevan Shafizadeh (kevan): Approved for ECS Dean

## New Course Proposal

Date Submitted: Thu, 17 Sep 2020 02:27:32 GMT

### Viewing: CE 243 : Traffic Flow Theory

Last edit: Thu, 17 Sep 2020 02:27:32 GMT

Changes proposed by: Julie Fogarty (218645519)

#### Contact(s):

Name (First Last)	Email	Phone 999-999-9999
Ben Fell	fellb@csus.edu	916-278-8139

#### Catalog Title:

Traffic Flow Theory

#### Class Schedule Title:

Traffic Flow Theory

#### 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)

243

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

107681

**Units:**

3

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

Fall 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.)**

Study of traffic flow characteristics including flow rate, speed, and density, at both the microscopic and macroscopic levels. Traffic flow analysis using the theoretical methods including capacity analysis, traffic stream models, shockwave analysis, and queuing analysis. Emphasis is on theory with demonstration of practical applications.

**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 140 or CE 142; 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):**

Lecture

**Lecture Classification**

CS#02 - Lecture/Discussion (K-factor=1 WTU 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) Describe traffic flow characteristics at the microscopic and the macroscopic levels.
- 2) Implement theoretical traffic analysis techniques including capacity analysis, traffic stream models, shock waves, and queuing theory.
- 3) Apply theoretical methods to selected practical problems.

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

CE 243.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.**

- Homework (ELO1, ELO2, and ELO3)
- Project (ELO3)
- Exam (ELO 2)

**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  
Disciplinary knowledge

**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: 14321