# Page Title

**PURDUE UNIVERSITY**

REQUEST FOR ADDITION, EXPIRATION, OR REVISION OF AN UNDERGRADUATE COURSE (100-400 LEVEL)

**DEPARTMENT:** Engineering

**EFFECTIVE SESSION:** Spring 2011

**INSTRUCTIONS:** Please check the items below which describe the purpose of this request.

1. New course with supporting documents
2. Add existing course offered at another campus
3. Expiration of a course
4. Change in course number
5. Change in course title
6. Change in course credit type
7. Change in course attributes (department head signature only)
8. Change in instructional hours
9. Change in course description
10. Change in course requisites
11. Change in semesters offered (department head signature only)
12. Transfer from one department to another

**PROPOSED:**

- **Subject Abbreviation:** CE
- **Course Number:** 45000
- **Long Title:** Urban Transportation Planning
- **Short Title:** Urban Transp Planning

**EXISTING:**

- **Subject Abbreviation:**
- **Course Number:**

Abbreviated title will be entered by the Office of the Registrar if omitted. (22 characters only)

**TERMS OFFERED:**

- Summer
- Fall
- Spring

**CAMPUS(ES) INVOLVED:**

- Calumet
- Cont Ed
- Tech Statewide
- Ft. Wayne
- Indianapolis
- W. Lafayette

**CREDIT TYPE**

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<th>Instructional Type</th>
<th>Credit Hours</th>
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<td>Lecture</td>
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<td>Int. Study</td>
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<td>Pract/Oberv</td>
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**COURSE ATTRIBUTES:**

<table>
<thead>
<tr>
<th>Attribute Description</th>
<th>Department</th>
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**COURSE DESCRIPTION (INCLUDE REQUISITES):**

P: CE 21000. This class is an introduction to transportation planning in urban areas. The course will cover the history of urban transportation planning, transportation data sources and surveys, fundamentals of travel demand and network modeling, financial issues, transportation planning and environmental issues, local and federal regulations and policies, and contemporary issues.

**Signature:**

**Calumet Department Head**

**Calumet School Dean**

**Fort Wayne Department Head**

**Fort Wayne School Dean**

**Indianapolis Department Head**

**Indianapolis School Dean**

**North Central Department Head**

**North Central Chancellor**

**West Lafayette Department Head**

**West Lafayette College/School Dean**

**West Lafayette Registrar**

**OFFICE OF THE REGISTRAR**
Required Course: CE 45000 – Urban Transportation Planning
Offered each spring

Catalog Data
Class: 3. Credits: 3.
This class is an introduction to transportation planning in urban areas. The course will cover the history of urban transportation planning, transportation data sources and surveys, fundamentals of travel demand and network modeling, financial issues, transportation planning and environmental issues, local and federal regulations and policies, and contemporary issues.

Prerequisites
CE 210: Introduction to Geomatics or approval of the instructor.

Corequisite
N/A

Required Textbook

Reference

Course Objectives
Student will understand and apply basic concepts and methods of urban transportation planning in the US. Student will learn methods of designing, conducting and administering surveys to provide the data required for transportation planning. In addition students will understand and be able to apply travel demand modeling, project development and financing, regulations and policies, environmental related issues, land use and contemporary issues in transportation planning.

Schedule:
Two 75-minute classes per week.

Lecture Topics
1. Data collection and use of survey information 2 classes
2. Travel demand forecasting models of trip generation, trip distribution, mode choice, and trip assignment. 6 classes
3. Project development. 4 classes
4. Highway finance. 2 classes
5. Federal legislation and planning regulations. 4 classes
6. Environmental concerns and air quality conformity. 4 classes
7. Land use and transportation interaction. 2 classes
8. Emerging issues and information technologies for transportation planning. 4 classes
8. Quizzes/Exams 3 classes
Course Outcomes

Upon successful completion of this course, students shall be able to:

1. Design, conduct and administer surveys to provide the data required for transportation planning. [a(1), b(3)]
2. Learn and understand zonal demand generation and attraction regression models. [a(1), c(4)]
3. Learn and understand demand distribution models (gravity models). [a(1), c(4)]
4. Learn and understand modal split models for mode choice analysis. [a(1), c(4)]
5. Develop and calibrate trip generation rates for specific types of land use developments.
6. Estimate the traffic impact of new developments using the four-stage sequential models. [c(4)]
7. Understand transportation project planning and development. [c(4), h(9)]
8. Understand and apply the process of financing to transportation projects [a(1), c(4), h(9), i(9)]
9. Learn the federal legislation and planning regulations pertaining to transportation planning issues [e(2), f(7), h(9), i(9), J(9)]
10. Be familiar with the impact of transportation on the environment with focus on air quality conformity. [e(2), f(7), h(9), i(9), J(9)]
11. Impact of the transportation project on the land use. [e(2), f(7), h(9), i(9), J(9)]
12. Understate selected emerging contemporary transportation issues and their impact on the society. [e(2), f(7), h(9), i(9), J(9)].
13. Make final decisions among planning alternatives that best integrate multiple objectives such as technical feasibility and cost minimization. [e(2), f(7), h(9), i(9), J(9)]
14. Communicate effectively via class technical discussions and presentations. [g(8)]
15. Design transportation related project in a team of two or three students and submits a final report and conduct a presentation. [c(4), d(5), g(8)]

Letters and numbers in parentheses refer to ABET outcomes and their correspondence BSCE/BSME program outcomes.

ABET category: Engineering science: 2.5 credits or 87%
Engineering design: 0.5 credit or 17%