Please complete this form and attach a copy of the syllabus for new courses. Forward it as an email attachment to the Secretary of the Graduate Council. A printed copy of the form with signatures should be brought to the Graduate Council Meeting. Complete the Coordinator Form on page 2, if changes in this course will affect other units.

Please indicate:  ___X__ NEW  ____ MODIFY  ____ DELETE

Local Unit: Civil, Environmental, and Infrastructure Engineering  Graduate Council Approval Date: 10/21/04

Course Abbreviation:  CEIE  Course Number: 767

Full Course Title: Traffic Engineering Modeling and Analysis

Abbreviated Course Title (24 characters max.): Traffic Engg Model & Analy

Credit hours:  3  Program of Record: MS CEIE

Repeateable for Credit?  ___ D=Yes, not within same term  Up to hours  
___ T=Yes, within the same term  Up to  hours  
___X_ N=Cannot be repeated for credit

Activity Code (please indicate):  ___X__ Lecture (LEC)  ___ Lab (LAB)  ___ Recitation (RCT)  
___ Studio (STU)  ___ Internship (INT)  ___ Independent Study (IND)  ___ Seminar (SEM)

Catalog Credit Format  3 : 3 : 0  Course Level:  GF(500-600)  ___ GA(700+)  767___

Maximum Enrollment: 20  For NEW courses, first term to be offered: SP 05

Prerequisites or corequisites:  Prerequisite: CEIE 561; Co-requisite: CEIE 601

Catalog Description (35 words or less)  Please use catalog format and attach a copy of the syllabus for new courses.:
Basic principles of simulation; queuing theory; traffic signal operations at individual intersections, arterials and networks; application of models related to traffic signalization, optimization and traffic simulation; development of skills to select appropriate model for given scenario

For MODIFIED or DELETED courses as appropriate:
Last term offered:  Previous Course Abbreviation:  Previous number:

Description of modification:

APPROVAL SIGNATURES:
Submitted by:  ________________________________ email:  ________________

Department/Program:  ________________________________ Date:  __________________

College Committee:  ________________________________ Date:  __________________

Graduate Council Representative:  ________________________________ Date:  ________________
GEORGE MASON UNIVERSITY
Course Coordination Form

Approval from other units:

Please list those units outside of your own who may be affected by this new, modified, or deleted course. Each of these units must approve this change prior to its being submitted to the Graduate Council for approval.

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<tr>
<th>Unit:</th>
<th>Head of Unit’s Signature:</th>
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Graduate Council approval: ________________________________________ Date: __________

Graduate Council representative: _________________________________ Date: __________

Provost Office representative: _________________________________ Date: __________
I. CATALOG DESCRIPTION

A. CEIE 767 Traffic Engineering Modeling and Analysis (3:3:0)

B. Prerequisite: CEIE 561

C. Corequisite: CEIE 601

D. Catalog Description:

Basic principles of simulation; queueing theory; traffic signal operations at individual intersections, arterials and networks; application of models related to traffic signalization, optimization and traffic simulation; development of skills to be able to select the most appropriate model for a given scenario.

II. JUSTIFICATION

Course necessity: This course will provide students with advanced modeling skills to better understand the implications of their design choices or existing operational conditions.

Relationship to other courses: This course builds upon the skill set introduced in CEIE 561 Traffic Engineering. It will also follow the concepts of modeling introduced in CEIE 601.

III. APPROVAL HISTORY

A. Approved by the Civil, Environmental & Infrastructure Engineering Department on October 14, 2004
B. Approved by the IT&E Graduate Studies Committee on
C. Approved by the IT&E Dean on

IV. SCHEDULING

Time of Initial Offering: This course has been offered in the Spring of 2002. It is one of three elective courses offered in the Spring Semester for Transportation Majors and it is scheduled to be offered again in Spring 2005.

Existing Faculty With Expertise in Subject Area
CEIE faculty members Aimee Flannery, Mohan Venigalla

V. COURSE OUTLINE

1. Simulation Basics
2. Queuing Theory
3. Deterministic Isolated Intersection Analysis
4. Deterministic Segment Analysis
5. Deterministic Systems Analysis
6. Signal Timing Optimization and Coordination
7. Urban Street Corridor Analysis
8. Microsimulation

Course Text: Various journal articles, portions of texts on simulation, traffic modeling, etc.

Course Requirements and Grading

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<th>Component</th>
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<td>Homework</td>
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<td>Term Project</td>
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