George Mason University
Graduate Course Approval/Inventory Form

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:  CEIE    Graduate Council Approval Date:  
Course Abbreviation:  CEIE    Course Number:  680

Full Course Title: Introduction to Infrastructure and Security Engineering

Abbreviated Course Title (24 characters max.): Intro. Infrastructure and Secur. Eng.

Credit hours:  3    Program of Record:  CEIE

Repeatable for Credit?  
_ _ D=Yes, not within same term Up to hours  
_ _ T=Yes, within the same term Up to hours  
_ _ 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)  _600 GA(700+)____

Maximum Enrollment:  20    For NEW courses, first term to be offered: As 690 special topics, taught Fall and Spring 2002 and 2003; as 680 first time taught, Fall 2004
Prerequisites or corequisites:  BS in Civil Engineering or permission of instructor

Catalog Description (35 words or less)  Please use catalog format and attach a copy of the syllabus for new courses.: Provides an in-depth review of present and proposed practices and issues in the management of civil infrastructure, focusing on performance and security through the full life-cycle, including the planning, designing, and construction of new, rehabilitated, modified, and recycled or decommissioned components.

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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<thead>
<tr>
<th>Unit:</th>
<th>Head of Unit’s Signature:</th>
<th>Date:</th>
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Graduate Council approval: ____________________________ Date: __________
Graduate Council representative: ______________________ Date: __________
Provost Office representative: ________________________ Date: __________
COURSE PROPOSAL TO THE GRADUATE COUNCIL
BY
SCHOOL OF INFORMATION TECHNOLOGY AND ENGINEERING

I. CATALOG DESCRIPTION

A. CEIE 680 Introduction to Infrastructure and Security Engineering (3:3:0)

B. Prerequisite: BS in Civil Engineering or permission of instructor

C. Catalog Description:

Provides an in-depth review of present and proposed practices and issues in the management of civil infrastructure, focusing on performance and security through the full life-cycle, including the planning, designing, and construction of new, rehabilitated, modified, and recycled or decommissioned components. Covers asset management methods and their effectiveness in managing all types of risk. The course profiles the policies leading the civil infrastructure industry toward adoption of such methods; and examines industry case studies. Special attention is given to vulnerability assessment and risk management in the context of a broad sampling of potential threats.

II. JUSTIFICATION

Course necessity: This course is a new course in the CEIE M.S. degree program. The course supports both the Graduate Certificate in Civil Infrastructure and Security Engineering, and the infrastructure management specialization of the CEIE M.S. degree. It provides fundamental knowledge related to the security of infrastructure systems in the context of a life-cycle approach, including design, construction, operation, and maintenance.

Relationship to other courses: This course is directly related to the remaining courses in the CEIE Graduate Certificate Program “Civil Infrastructure and Security Engineering.” It provides unique knowledge relevant both for planners and designers of infrastructure systems, as well as engineers in charge of their operation, maintenance and security.

III. APPROVAL HISTORY

A. Approved by the Civil, Environmental & Infrastructure Engineering Department on October 29, 2003.
B. Approved by the IT&E Graduate Studies Committee on.
C. Approved by the IT&E Dean on

IV. SCHEDULING

Time of Initial Offering: Has been taught twice as CEIE 690, Special Topics, and has been rated highly by the students. First offering as CEIE 680 will be Fall 2004.

Existing Faculty With Expertise in Subject Area

All current CEIE faculty members
V. COURSE OUTLINE

1. Infrastructure engineering and security engineering
2. Threat and vulnerability assessment, risk management
3. Analysis of system security scenarios
4. Cyber-terrorism
5. Transportation systems security; site visit
6. Security of water supply systems
7. Security of buildings and structural systems
8. Information technology and infrastructure
9. Global infrastructure issues
10. Student team presentations

Texts


Course Requirements and Grading

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<tr>
<th>Component</th>
<th>Weight</th>
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<td>Papers (two, each 15%)</td>
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<tr>
<td>Term Project</td>
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<tr>
<td>Class Discussion</td>
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<td>Final Exam</td>
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