

COURSE OUTLINE
CIVE 578 – Infrastructure Management and Security

Credits: 3

Term(s) to be offered: Spring

Prerequisite: Ten credits of engineering, economics, public administration, or planning courses.

Catalog description: Infrastructure planning, management and security. Systems approach to life cycle management. Problems, analysis, decision support systems.

Instructor: Neil S. Grigg, B 207 Engr, Phone: 491-3369

Text: *Infrastructure Engineering and Management*, Neil S. Grigg, Wiley, Second edition 2005

Additional Class Materials: Handouts and current issue briefs.

Course Objectives: Civil infrastructure comprises the physical systems for six critical sectors (transportation, water, environment, energy, built environment, and telecommunications). The course prepares students to plan and manage infrastructure systems through jobs in civil engineering, construction, public works management and planning. In addition to basic management principles, it covers current topics such as electricity deregulation, infrastructure security, and technology applied to underground infrastructure. Each student will develop and present a case study for discussion by the class.

Upon completion of this course, the student should be able to:

- Describe the components of civil infrastructure and their interrelationships;
- Describe the elements of an infrastructure management plan;
- Describe the components of an infrastructure security plan ;
- Describe the impacts of new technology on infrastructure management.

Course Topics/Weekly Schedule:

Week	Topic
1.	Civil infrastructure systems and systems approach
2.	Planning principles and technologies
3.	Growth management and infrastructure planning
4.	Infrastructure systems finance, including asset management
5.	Public works organizations and management
6.	Utility structure and management
7.	Critical infrastructure systems security, Politics of infrastructure
8.	Complex regional issues, such as traffic congestion
9.	Public sector economics and industrial policy
10.	Environmental impacts and mitigation
11.	Non-destructive evaluation technologies and systems
12.	Operation and maintenance strategies
13.	Privatization of infrastructure
14.	Project management
15.	Service sector operations and productivity, Workforce issues

Instructional Methodology: Three lectures per week.

Mode of Delivery: Traditional lectures in class and via the course website for distance students.

Methods of Evaluation: The course grade will be based on the following distribution:

Homework and Paper	40%
Two Exams	40%
<u>Final Exam</u>	<u>20%</u>
Total	100%