

I. COURSE TITLE: Policy Implications of Sustainability Approaches to Civil Infrastructure.

II. ACADEMIC TERM: Second Semester (spring) of Academic Year

III. PROFESSOR: Cecilio Ortiz Garcia, PhD (University of Puerto Rico, Mayagüez);
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IV. COURSE DESCRIPTION: The student will apply the concept of sustainability to the planning, design, implementation and evaluation of civil infrastructure. Furthermore, students will explore the infrastructure policy arena, identifying both challenges and opportunities to sustainable infrastructure development. Infrastructure policy is not only a normative/ legal frame but a process in which stakeholders interact in a strategic manner to move issues into the agenda for action. As such, students will engage in a number of stakeholder analysis activities to gain an appreciation of the complexities inside the infrastructure policy arena. The course will utilize a matrix mixing levels of control/organization on the one hand, and their interphase with different environmental media and other infrastructure programs and projects. Due to the shared characteristics of the municipal/city level of government, our students will engage Comparative analysis between such units. The social economic and environmental attributes of development at various levels as well as the utilization of sustainability as a unifying theme will guide such comparisons.

V. TOPICS TO BE COVERED IN THE COURSE:

1. Introduction: The Social Basis for Infrastructure Development
2. The study of "Public Policy": Conceptualization and Definitions
3. Sustainability Science: Concepts and Applications
4. Private vs Public: Civil Infrastructure as a Public Good
5. Sociology of development and the role of infrastructure.
6. Normal accidents and the vulnerability of Complex Systems
7. Social Construction of Risk
8. The political economy of disasters
9. Managing the environment
10. Research design and methods in the social sciences
11. Qualitative and quantitative analysis of sociological data.

VI. INSTRUCTIONAL STRATEGIES: Conferences, guest speakers, literature reviews, Group exercises and extra curricular activities deemed congruente and complementary to the objectives of this course. Substantial independent and Group study will be undertaken. **The course is taught at UPRM with Web Streaming Capabilities to Northeastern University.**