

Advanced Studies for Civil Engineering



Ciudad Real, 1 June - 1 July 2011

ENROLLMENT IN THE COURSE

Between 1 June to 30 June 2011 students could be enrolled in this course. Inscription must take place at the Secretary of the School of Civil Engineering.

Water Resources: max. 5 vacants. **Structural Design:** máx. 5 vacants.

Time Table: Mainly, from Monday to Thursday

Classroom: Aula 0.07

Classroom: Aula 1.07

Hours: 80 hours attending.

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Payment for inscription: Scholarships are given with payment exemptions.

Credits Validation: The student will ask for the credits validation according to the UCLM regulations. The course will have 2 credits as an official validation.

Director of the course: Porfirio Sanz Camañes, Dir. Académico Relaciones Internacionales. Porfirio.Sanz@uclm.es

Secretary of the course: Dr. Luis Rodríguez Romero: Luis.RRomero@uclm.es

Introduction and objectives

One of the aims of the internacionalization of the UCLM is to promote courses on Sciences and Engineers matters mainly in English. Texas A&M University is one of the most important institutions for the formation of Engineers in the United States of America.

The courses offered in Structural Design and Water Resources are prepared to expose civil engineering students and to introduce them to the application of fundamental mathematical and scientific knowledge and use to computer to solve these problems. Courses are offered in English.

Topics covered in the courses

STRUCTURAL DESIGN

CVEN 444 - **Structural Concrete Design:** Behavior, design, and detailing of reinforced concrete structural members according to the ACI Building Code Requirements. Design for ultimate limit states (flexure, shear, and axial loads) and serviceability requirements (cracking and deflection). Applications include continuous beams and moment frames. Homework and project assignments will be based on the design of members for building and bridge infrastructure systems throughout Spain.

CVEN 483 - **Analysis and Design of Structures:** Overall procedure of design including structural analysis, load determination, codes and standards, structural systems, design drawings and specifications and cost comparisons as applied to buildings, bridges or special structures. Homework and project assignments will be based on the design of building and bridge infrastructure systems throughout Spain.

Professor: **Dr. Joseph Bracci**, Professor Zachry Department of Civil Engineering Texas A&M University

WATER RESOURCES

CVEN 339 - **Water Resources Engineering:** A wide range of water resources engineering topics will be presented in this course, including fundamentals of surface water hydrology, groundwater hydrology, pipe hydraulics and open channel hydraulics. Emphasis will be made on the affect of local conditions and data availability in hydrologic analysis and hydraulic design. Homework and project assignments will e based on study areas in Spain (preferably in Castilla-La Mancha). The course will be complemented by a number of visits to small and large hydraulic structures related to the items being discussed in class.

CVEN 423 - **Geomatics of Civil Engineering:** Geographic Information Systems (GIS) and their application to civil engineering problems will be presented in this course. The course will discuss obtaining and creating GIS data, spatial analysis with vector and raster data, and basic hydrologic and land-development applications. Homework and project assignments will be based on study areas in Spain. Emphasis will be given to the comparison and spatial analysis of land use in the surroundings of Madrid and Houston and their effect on runoff generation. The course will be complemented by visits to the Madrid area being studied in class.

Professor: **Dr. Francisco Olivera**, Division Head of Environmental and Water Resources Engineering and Associate Professor of Civil Engineering, Texas A&M University