



UNIVERSIDAD
DE GRANADA



CENTRO DE
LENGUAS
MODERNAS

HISPANIC STUDIES COURSE (CEH)

SCIENCE AND TECHNOLOGY

CIVIL ENGINEERING AND TERRITORY



CIVIL ENGINEERING AND TERRITORY

GENERAL DESCRIPTION

Knowledge of the role of civil engineering infrastructures in the transformation and development of territories. Theoretical-practical knowledge is sought by approaching the history of civil engineering works and through the analysis of the location of public works in the territory and their territorial impact. Infrastructure development will be addressed from the knowledge of the bases of sectoral planning and its relationship with territorial planning. The impact of civil engineering infrastructure on the different territorial and urban models will be assessed, such as transport and hydraulic infrastructure in their areas, or port infrastructure on the coast. The need for landscape integration of infrastructures in their surroundings will be shown, as well as urban infrastructures and services as construction elements of the city and its public spaces. In metropolitan areas, the role of transport and mobility infrastructures and current technological applications will be studied, giving rise to "Smart Cities". Through the study of national and international cases, students will be given a global vision of the role of civil engineering infrastructures in the transformation and development of different territories. In addition, field visits will be carried out to illustrate the theoretical-practical contents in situ.

CONTENTS

THEORETICAL AGENDA:

- Topic 1. Presentation: Civil engineering infrastructures in the transformation and development of territories.
- Topic 2. Historical public works and their assessment: main Roman, medieval, Renaissance and 18th and 19th century works in urban and territorial conformation.
- Topic 3. Planning and development of infrastructure within the framework of territorial planning.
- Topic 4. The location of public works and their territorial impact.
- Topic 5. Roads and road infrastructure and the openings of the territories. The main peninsular passes.
- Topic 6. Railways and railway infrastructure and urban systems. The conventional and high-speed railway network in Spain.
- Topic 7. Canals, dams and hydraulic infrastructures. Irrigation and supply of the territories. The basins of southeast Spain
- Topic 8. Ports and port infrastructure and coastal territories: The Spanish Mediterranean.
- Topic 9. Infrastructure and logistics platforms in large Spanish production and consumption centers.

CONTENTS

- Topic 10. Urban infrastructure and services. Mobility and Smart Cities in large Spanish metropolitan areas.

PRACTICAL AGENDA:

- Practical sessions: Various practical sessions will be developed around the case studies with analysis of cartography and orthophotos.
- Seminars: Students must prepare a work on some infrastructures and/or particular territories of their country (prior agreement with the teacher), which will later be presented in class, through a presentation.
- Field Practices: Two field practice outings will be carried out, where the theoretical-practical contents presented in class will be illustrated in situ.

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In-person training activities. They include:

- Theoretical classes: Presentation of content by the teacher that will be discussed in class. It will be accompanied by appropriate teaching materials to facilitate learning (especially photographic and cartographic documents, etc., essential for correct geographical learning). These classes are intended to be interactive, so the participation of attendees is recommended, as they serve to acquire knowledge, consolidate the fundamental contents of each thematic unit, resolve doubts and expand on some questions that arise in the classroom.
- Practical classes, seminars and field trips. They will be developed to learn practically and in their own context the role of civil engineering infrastructures in the transformation and development of territories. The seminars should be oriented towards the exchange of ideas and the sharing of knowledge and experiences, always in relation to the contents and objectives of the subject.
- Commitment and involvement for the individual tutorial attention plan: a training space in which the student and teacher generate an interactive process that includes, among other factors, the subject study methodology, the search for the best academic results or guidance training that promotes autonomous learning and teamwork. It must contemplate the maximum use of the potential offered by all useful technologies for the training process. Certain classroom sessions will be reserved for collective tutorials, but the student is urged to regularly attend individualized tutorials, since they are decisive for resolving doubts or monitoring the activities and tasks carried out during the course.
- Evaluation of knowledge according to what is stated in the corresponding section

Non-face-to-face training activities. They include:

- Autonomous learning activities. Its general purpose is to make the student

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responsible for their own learning. They must facilitate the acquisition of skills, seeking the appropriate use of communication skills, both oral and written, without forgetting training for the interpretation of the contents of the subject. They must be related to the academic and professional profile most appropriate to the subject.

- Practical teamwork activities in the classroom: They will seek the creation and development of teamwork dynamics applied to the contents of the subject. They must be coordinated, supported by the complementarity, trust and commitment of the team members and be subject to continuous and close monitoring by the teacher. They may consist of or translate into presentations, seminar debates, case simulations or projects.

EVALUATION

To have the right to be evaluated, attendance at 80% of the classes is mandatory.

CONTINUOUS EVALUATION: 60%

- Practical activities. They will be delivered on the last day of class in the form of a practice report. It represents 30% of the final grade.
- Seminars and oral presentation. On a specific topic in which the presentation will be evaluated, it represents another 30%.

PARTIAL AND FINAL EXAMS: 40%

- Midterm exam: 20%
- Final exam: 20%

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- Actas de los Congresos de Ingeniería Civil, Territorio y Medio Ambiente.
- AGUILÓ, M. (1999): El paisaje construido. Colegio de Ingenieros de Caminos, Canales y Puertos.
- GÓMEZ OREA, D. (2013): Ordenación Territorial. Mundi Prensa, Madrid
- GÓMEZ ORDÓÑEZ, J.L. Y GRINDLAY MORENO, A.L. (dirs.) (2008): "Agua, Ingeniería y Territorio: La Transformación de la Cuenca del río Segura por la Ingeniería Hidráulica". Ed. Confederación Hidrográfica del Segura. 680 pp.
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- GRINDLAY MORENO, A.L. (2008): Puerto y Ciudad en Andalucía Oriental. Ed. Universidad de Granada. 503 pp.
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 - MOLERO-MELGAREJO, E., RODRÍGUEZ-ROJAS, M.I., GRINDLAY-MORENO, A.L (2015): *La enseñanza del urbanismo de los ingenieros civiles y los sistemas de información geográfica*. Universidad de Granada. Departamento de Urbanística y Ordenación del Territorio. Disponible en <http://hdl.handle.net/10481/36646>

Recommended Links:

- *Revistas Ingeniería y Territorio, Obras Públicas y Cauce. Colegio de Ingenieros de Caminos, Canales y Puertos*. Disponibles en <http://www2.ciccp.es/index.php/publicaciones>
- www.cehopu.es
- www.fundicot.org
- www.juntadeandalucia.es/organismos/fomentoyvivienda.html
- www.traianus.com
- www.urbanred.aq.upm.es/
- www3.ciccp.es
- <https://es.goolzoom.com/>
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