



1. General information

Course: CONSTRUCTION II
Type: CORE COURSE
Degree: 315 - UNDERGRADUATE DEGREE IN BUILDING ENGINEERING
Center: 308 - SCHOOL POLYTECHNIC OF CUENCA
Year: 1

Main language: Spanish

Use of additional languages:

Web site:

Code: 59308
ECTS credits: 6
Academic year: 2020-21
Group(s): 30
Duration: C2
Second language: Spanish
English Friendly: Y
Bilingual: N

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|--|--------------------------------------|---------------|----------------------------|--------------|
| Lecturer: FRANCISCO JAVIER CASTILLA PASCUAL - Group(s): 30 | | | | |
| Building/Office | Department | Phone number | Email | Office hours |
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| Lecturer: DAVID VALVERDE CANTERO - Group(s): 30 | | | | |
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2. Pre-Requisites

Since the course corresponds to the second semester, previous knowledge of Construction I is recommended

3. Justification in the curriculum, relation to other subjects and to the profession

Every building is a complex of construction systems, each of which must meet certain requirements and provide the necessary benefits. Each constructive element can be built with different techniques and materials depending on the technological advances and the

Basic Knowledge for the rest of the subjects of the CONSTRUCTION itinerary is provided. The set of objectives is formulated to ensure that the future graduate consolidates the basic knowledge about Construction, providing an overview of the modern building and

4. Degree competences achieved in this course

Course competences

| Code | Description |
|------|---|
| E15 | Ability to identify the elements and construction systems, define their function and compatibility, and their implementation in the construction process. Formulate and resolve constructive details. |
| E29 | Ability to analyze, design and execute solutions that facilitate universal accessibility in buildings and their surroundings. |
| G01 | Ability for analysis and synthesis |
| G06 | Critical thinking |
| G07 | Teamwork |
| G12 | Autonomous learning |
| G15 | Sensitivity to environmental issues |
| G22 | Correct oral and written communication |

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Physical and mechanical characteristics that define the construction systems.

Understanding the evolution of construction systems and their application to old or modern works.

Understanding the way of working of the constructive elements, defining their function and compatibility.

Additional outcomes

IDENTIFY the basic requirements associated with the systems and constructive elements in modern buildings

INTERPRET the function of each of its components and USE the vocabulary and basic terms that define them appropriately.

REPRESENT properly the main construction elements.

Modeling constructive elements through work tools in BIM environment with minimum level LOD 100

Modeling constructive elements through work tools in BIM environment with minimum level of development (LOD 100) and define their characteristics at LOD 200

6. Units / Contents

Unit 1: CONSTRUCTION PRINCIPLES

Unit 1.1 Adaptation to space-Types of actions and contemporary structural typology

Unit 1.2 Adaptation to the Environment I. Heat, water

Unit 1.3 Adaptation to the environment II. Light, noise, pollution

Unit 1.4 Integrity of buildings. Fire, earthquake

Unit 1.5 Security of Use and Accessibility

Unit 2: THE STRUCTURE SYSTEM. Support of space

Unit 2.1 Constructive organization of the structures. Vertical and horizontal elements

Unit 2.2 Underground structures. Foundations

Unit 2.3 Spatial structures and singular geometries

Unit 2.4 Tall Buildings

Unit 2.5 The structure as a constructive unit

Unit 3: THE BUILDING ENVELOPE. The outer envelope and the partition of space.

Unit 3.1 Facades I. Blind parts

Unit 3.2 Facades II. Openings

Unit 3.3 The lower face of the enclosure

Unit 3.4 Sloped roofs

Unit 3.5 Flat Covers-Terraces

Unit 3.6 Interior partitions

7. Activities, Units/Modules and Methodology

| Training Activity | Methodology | Related Competences (only degrees before RD 822/2021) | ECTS | Hours | As | Com | Description |
|---|---------------------------|---|--------------------------------------|-------|----|-----|--|
| Class Attendance (theory) [ON-SITE] | Lectures | E15 E29 | 1.44 | 36 | N | | Introduction of each unit by the teacher. The most significant topics and difficult aspects will be exposed. |
| Problem solving and/or case studies [ON-SITE] | Guided or supervised work | G06 | 0.24 | 6 | N | | Practical exercises of graphic representation in BIM environment and exposition of cases to be analyzed in different sessions |
| Study and Exam Preparation [OFF-SITE] | Self-study | E15 E29 G12 | 1.8 | 45 | N | | Search of information and reading of complementary bibliography by the student. |
| Writing of reports or projects [OFF-SITE] | Self-study | E15 G07 | 1.8 | 45 | Y | Y | Tasks commissioned to students (individually or in groups, depending on the number of students) throughout the course. The teachers will guide in the realization of these works and resolution of the arising problems. In tutoring hours. Each task will follow for its complementation the guidelines established in the classes and tutorials. |
| Group tutoring sessions [ON-SITE] | Guided or supervised work | G01 | 0.32 | 8 | N | | Follow-up tutoring for the tasks commissioned |
| Project or Topic Presentations [ON-SITE] | Assessment tests | G01 G22 | 0.08 | 2 | Y | Y | Oral Presentation of course work and tasks commissioned by the teacher |
| Other on-site activities [ON-SITE] | Assessment tests | E15 E29 G12 | 0.16 | 4 | Y | N | Evidence of knowledge and achievement of the specific objectives of each of the topics exposed |
| Final test [ON-SITE] | Assessment tests | E15 E29 | 0.16 | 4 | Y | Y | Evidence of knowledge and achievement of the specific objectives of each of the topics exposed |
| Total: | | | 6 | 150 | | | |
| Total credits of in-class work: 2.4 | | | Total class time hours: 60 | | | | |
| Total credits of out of class work: 3.6 | | | Total hours of out of class work: 90 | | | | |

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System

| Evaluation System | Continuous assessment | Non-continuous evaluation* | Description |
|-------------------------------|-----------------------|----------------------------|--|
| Oral presentations assessment | 10.00% | 20.00% | Individual or group exposition of the work or part of the work done during the course. |

| | | | |
|---|----------------|----------------|--|
| Test | 20.00% | 0.00% | They will be done according to the course calendar. They will be weighted according to the number of tests performed. A score greater than or equal to 3 out of 10 is required in each of them in order to perform the weighted average with other activities |
| Final test | 20.00% | 80.00% | The weighting will be 30% or 60% depending on the results of the progress tests. It will serve as a recovery for students who have not passed any of the progress tests. A score greater than or equal to 4 out of 10 is required in order to perform the weighted average with other activities. It will be held on the date established in the official exam calendar of the EPC |
| Practicum and practical activities reports assessment | 50.00% | 0.00% | Elaboration and presentation of the proposed course tasks that may be coordinated with other subjects according to guidelines established at the beginning. Attendance at scheduled group tutoring will be mandatory. |
| Total: | 100.00% | 100.00% | |

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences).

Evaluation criteria for the final exam:

Continuous assessment:

The final mark of the course will be the weighted media of the qualifications (over 10 points) according to the system and the percentages established in the previous section. A grade equal to or greater than 5 is required to pass the course.

Non-continuous evaluation:

The final mark of the course will be the weighted media of the qualifications (over 10 points) according to the system and the percentages established in the previous section. A grade equal to or greater than 5 is required to pass the course.

Specifications for the resit/retake exam:

tudents who have been continuously evaluated in the Final exam and have not passed the course will be able to keep the grades and recover the parts that have not reached the minimum grade.

Specifications for the second resit / retake exam:

tudents who have been continuously evaluated in the Final and retake exam and have not passed the course will be able to keep the grades and recover the parts that have not reached the minimum grade.

| 9. Assignments, course calendar and important dates | |
|---|--------------|
| Not related to the syllabus/contents | |
| Hours | hours |
| Group tutoring sessions [PRESENCIAL][Guided or supervised work] | 8 |
| Project or Topic Presentations [PRESENCIAL][Assessment tests] | 2 |
| Other on-site activities [PRESENCIAL][Assessment tests] | 4 |
| Final test [PRESENCIAL][Assessment tests] | 4 |
| General comments about the planning: The dates of the final test (for the final exam) and the resit test will be the day, time and place designated for this purpose by the Subdirectorate of Studies of the School. The student will have all the detailed information in the Moodle virtual platform of the subject. The time distribution of activities corresponding to each subject will be prepared in accordance with the school calendar of the semester | |
| Unit 1 (de 3): CONSTRUCTION PRINCIPLES | |
| Activities | Hours |
| Class Attendance (theory) [PRESENCIAL][Lectures] | 12 |
| Problem solving and/or case studies [PRESENCIAL][Guided or supervised work] | 2 |
| Study and Exam Preparation [AUTÓNOMA][Self-study] | 15 |
| Writing of reports or projects [AUTÓNOMA][Self-study] | 10 |
| Unit 2 (de 3): THE STRUCTURE SYSTEM. Support of space | |
| Activities | Hours |
| Class Attendance (theory) [PRESENCIAL][Lectures] | 12 |
| Problem solving and/or case studies [PRESENCIAL][Guided or supervised work] | 2 |
| Study and Exam Preparation [AUTÓNOMA][Self-study] | 15 |
| Writing of reports or projects [AUTÓNOMA][Self-study] | 25 |
| Unit 3 (de 3): THE BUILDING ENVELOPE. The outer envelope and the partition of space. | |
| Activities | Hours |
| Class Attendance (theory) [PRESENCIAL][Lectures] | 12 |
| Problem solving and/or case studies [PRESENCIAL][Guided or supervised work] | 2 |
| Study and Exam Preparation [AUTÓNOMA][Self-study] | 15 |
| Writing of reports or projects [AUTÓNOMA][Self-study] | 10 |
| Global activity | |
| Activities | hours |
| Class Attendance (theory) [PRESENCIAL][Lectures] | 36 |
| Problem solving and/or case studies [PRESENCIAL][Guided or supervised work] | 6 |
| Study and Exam Preparation [AUTÓNOMA][Self-study] | 45 |
| Writing of reports or projects [AUTÓNOMA][Self-study] | 45 |
| Group tutoring sessions [PRESENCIAL][Guided or supervised work] | 8 |
| Project or Topic Presentations [PRESENCIAL][Assessment tests] | 2 |
| Other on-site activities [PRESENCIAL][Assessment tests] | 4 |
| Final test [PRESENCIAL][Assessment tests] | 4 |
| Total horas: 150 | |

| 10. Bibliography and Sources | | | | | | |
|------------------------------------|--|------------------------------|--------------|--------------------|------|--|
| Author(s) | Title/Link | Publishing house | City | ISBN | Year | Description |
| Ching, Francis D.K. | Diccionario visual de arquitectura http://ggili.com.mx/es/tienda/productos/diccionario-visual-de-arquitectura | Gustavo Gili | | 978-84-252-2020-3 | 2008 | Diccionario básico con terminología en inglés |
| Ferri Cortes, J. (y otros) | Principios de Construcción http://www.editorial-club-universitario.es/libro.asp?ref=4526 | Editorial club Universitario | | 978-84-9948-385-6 | 2011 | Lecturas recomendadas asociadas a los temas 2 y 3 |
| González Moreno-Navarro, José Luis | Claves del construir arquitectónico (3 tomos) http://ggili.com/es/tienda/productos/claves-del-construir-arquitectonico-tomo-iii | Gustavo Gili | | 84-252-1695-8 | 2008 | Lectura básica como libro de texto que acompaña a los temas 2 y 3 |
| | Documentos Código Técnico Edificación http://www.codigotecnico.org/web/recursos/documentos/ | | | | | Normativa de referencia a utilizar durante el curso |
| Allen, Edward | Cómo funciona un edificio : principios elementales http://ggili.com/es/tienda/productos/como-funciona-un-edificio | Gustavo Gili | | 84-252-1089-5 | 2008 | Lectura recomendada paralela al primer tema de la asignatura |
| Allen, Edward. | Fundamentals of building construction | John Wiley & Sons | Hoboken, N.J | 978-0-470-07468-8. | 2009 | Bibliografía especializada en inglés |
| Ching, Francis D.K | Building Construction Illustrated https://www.academia.edu/31761487/Wiley_Building_Construction_Illustrated_5th_Edition_Feb_2014.ISBN.1118458346.pdf | Wiley | | 978-1-118-45834-1 | 2014 | Bibliografía en inglés. Lectura básica para los temas 2 y 3. |
| Allen, Edward | How Buildings Work: The Natural Order of Architecture https://www.academia.edu/33370905/How_Buildings_Work_-_The_Natural_Order_of_Architecture.pdf | Oxford University press | | 978-0-19-516198-4 | 2005 | Bibliografía en inglés. Lectura recomendada paralela al primer tema de la asignatura |