

28620 - Works Equipment

Información del Plan Docente

Academic Year	2017/18
Faculty / School	175 - Escuela Universitaria Politécnica de La Almunia
Degree	422 - Bachelor's Degree in Building Engineering
ECTS	6.0
Year	3
Semester	First semester
Subject Type	Compulsory
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

Presentation general methodology

The learning process designed for this subject is based on the following:

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The teaching methodology is based on a strong interaction teacher / student. This interaction is materialized by a division of labor / responsibilities among students and teachers.

- **Classroom activities :**

1. Theoretical classes: theoretical concepts of the subject will be explained and practical examples will be developed.
2. Tutored practices: Students will develop examples and case studies made reference to the theoretical concepts studied.
3. Assessment tests

- **Tutored autonomous activities :**

1. These activities will be tutored by teachers of the subject.
2. The student will be able to perform these activities in the center or outside, under the supervision of a teacher departmental area.

- **Reinforcement activities:**

1. Through tutorials and / or virtual learning portal Moodle various activities that reinforce the basic contents of the subject be addressed.

- **Individual tutorials:** That may be presential or virtual, as appropriate, to aid in the learning process.

- **Face tutoring Group:** Scheduled monitoring and complement learning in which the teacher meets with a group of students to guide their work autonomous learning and targeted protection work, with resolution of doubts activities.

5.2.Learning tasks

The program that the student is offered to help you achieve the expected results includes the following activities and processes: It involves the active participation of students, so as to achieve the learning outcomes will be developed, non redound to the above, the following activities:

- **face generic activities :**

1. Theoretical classes: theoretical concepts of the subject will be explained and illustrative practical examples to support the theory will be developed when deemed necessary.
2. Practical classes: problems and case studies to complement the theoretical concepts studied will be made.
3. Practices in class: Students using notes, rules and bibliography, will make practical, real work, in class, which will be delivered for review before finalizing it.
4. Magnas classes: on aspects covered in the course, taught by renowned professionals.
5. Visits: to companies and works in which to see firsthand linking the topics covered in the course with the professional reality.

- **not face generic activities:**

1. Study and assimilation of the theory presented in lectures.
 2. Understanding and assimilation of the problems and solved in practical classes practical cases.
 3. Autonomously resolution of problems and proposed examples.
 4. Preparation of practices, information search, group meetings, preparation of scripts and reports.
 5. Preparation of the written tests of continuous assessment and / or final exams overall assessment.
- **tutored autonomous activities :** Although have more of a face character, have been taken into account in a differentiated manner because of its own idiosyncrasies, as they will be primarily focused on seminars and tutorials under the supervision of the teacher.
 - **Reinforcement activities:** In marked face character, and / or virtual through a virtual learning portal Moodle various activities that reinforce the basic contents of the subject in those aspects that will be directed deems appropriate.

The course consists of six (6) ECTS credits which represents 150 hours of work the student / a in this course , ie 10 hours per week during the fifteen (15) weeks of teaching consisting of the course. An indicative summary of the temporal distribution of a school week is shown in the following table. These values are obtained from the record of the subject of the verification report of the Degree, taking into account the degree of experimentalism considered for this subject is low. Activity Hours week lectiva Lectures 3 Practices in Class 1 Other activities 6

5.3.Syllabus

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Class 1 PRESENTATION Brief presentation of the subject, content and methodology
 Class 2 INTRODUCTION General considerations. Need for mechanization of works. Features work teams. Criteria for the choice of machinery. Acquisition costs. Amortization. Rentals. Production. unit costs
 Class 3 HAND TOOL AND SMALL MACHINERY Hand tools. Small machinery. Compressed air equipment. gensets. small dumpers
 Class 4 earthworks. STUDY OF LAND Prospecting techniques and machinery used. Caracterización materials. Excavability terrain. General concepts of Earthworks. Volume changes, swelling and Consolidation and compaction
 Class 5 earthwork. EXCAVATION EQUIPMENT Excavation equipment and drive. tractors Excavation equipment in a fixed position. hydraulic excavators. Digging and loading equipment. loaders. Machines digging, loading and transportation combined. scrapers draglines
 Class 6 earthworks. TRANSPORT Transport equipment: Trucks and Haulers Extended and leveling: Grader Compacting soil: Sealers
 Class 7 MACHINERY AND EQUIPMENT DEMOLITION
 Class 8 AUXILIARY STRUCTURES DESMONTABLES Falsework and formwork. Scaffold
 Class 9 LIFTING EQUIPMENT. part 1 Elevators. Lift truck. telehandler
 Class 10 LIFTING EQUIPMENT. part 2 Truck cranes. erecting cranes. tower cranes
 Class 11 SPECIAL FOUNDATIONS. SCREEN WALLS Piling Equipment: In situ, banded micropiling
 Class 12 EQUIPMENT AND MORTAR CONCRETE raw material: gravel and sand. Cement Production. Concrete plants
 Class 13 EQUIPMENT AND MORTAR CONCRETE Transport. Placing of concrete Storage silos

5.4.Course planning and calendar

The schedule of classroom theory sessions and to carry out works and practices will be as follows Theory and

practice evaluable
 Week 1 Presentation of the subject. Introduction to the mechanization of the works
 week 2 General considerations. Need for mechanization of works. Features work teams. Criteria for the choice of machinery. Acquisition costs. Amortization. Rentals. Production. unit costs
 week 3 Hand tools and small machinery.
 week 4 PRACTICE 1: Calculation rush of work. Depreciation of machinery and equipment. Unit prices
 week 5 Earth movements. Materials digging. Excavation
 week 6 Earth movements. Loading and Transportation. Laying and compaction
 week 7 PRACTICE 2: Earthworks. Calculation of the equipment necessary to carry out this type of work depending on the terrain, volumes, yields and / or deadlines
 week 8 Machinery and equipment Demolition
 week 9 Auxiliary structures Desmontables
 week 10 Lifting equipment
 week 11 PRACTICAL 3: Election model most suitable crane for a work and its better positioning according floor of the building; choice depending on loads, height, reach necessary. Mounting stability
 week 12 Elevators. Lift truck. telehandler
 week 13 Special machinery for foundations and walls Screen
 week 14 Equipment concretes and mortars. Production and Transportation. Start Work
 week 15 PRACTICE 4: Equipment concrete and mortars. Plant design, location and means for starting work
Theory assessment tests Week 8 (approximately) 1st Partial Evaluation Test week 15 2nd Partial Evaluation Test

5.5.Bibliography and recommended resources

- Tiktin, Juan. Movimiento de tierras : utilización de la maquinaria, producciones y casos prácticos, compactación de materiales , utilización de compactadores / Juan Tiktin . - 3a. ed. Madrid : E.T.S. Ingenieros de Caminos, Canales y Puertos, 1997
- Abásolo, Andrés. Construcción y máquinas en edificación / Andrés Abásolo Madrid : Munilla-Lería, D. L. 2005
- Lagarde Abrisqueta, Eduardo. Organización y equipos. U.D. 3, Equipos de obra y medios auxiliares / Eduardo Lagarde Abrisqueta Madrid: Fundación Escuela de la Edificación, D.L. 1995
- Jiménez López, Luis. Operador de grúas torre / Luis Jiménez López. - 1 ed Barcelona : CEAC, 2002

Material support

Material	Soporte
Notes (personal) of the subject	Paper / Digital

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Annexes Technical Documentation - comercial of Manufacturers	Paper / Digital
Annexes photographic execution	Digital / Digital
Practices	Paper / Digital / Exhibition
Interest rules	Digital /Papel /internet