

28620 - Works Equipment

Syllabus Information

Academic year: 2023/24

Subject: 28620 - Works Equipment

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

Within the studies of Technical Architecture, knowledge of what we call "construction equipment and auxiliary means" is essential, providing students with knowledge of the main characteristics, uses, functions, performance, productions, main components, etc., of the equipment, machines and tools that are commonly used in building and urbanisation works.

This will familiarise you with the design and planning for the correct choice of such equipment, tools and machinery for each type of work and/or each phase of the work, as well as their most favourable location.

"These approaches and goals are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>), such that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to their achievement."

Goal 4: Quality Education.

Goal 9: Industry, innovation and infrastructure.

2. Learning results

1. Have knowledge of the most important characteristics of the equipment, machinery and tools, their uses, performance, components, etc., as well as the installations and auxiliary means necessary for the execution of any building and/or urbanisation project, choosing those that best adapt to the construction system in accordance with the type of work to be carried out, economic conditions or deadlines.
2. Have the necessary knowledge for the correct implementation and positioning of the machinery so that its use is adequate, especially in safety conditions, without forgetting the compatibilities that have to be produced in terms of the space occupied and that this is linked to the highest yields and productivity
3. Know how to plan and resolve the necessary means for the control of the adequate use on site, as well as being able to calculate the needs for supplies (energy, water, etc.), for the operation of machinery, installations and assisted tools.
4. Be able to apply technical regulations to the building process and to generate technical specification documents of procedures and construction methods of buildings.
5. Calculate the costs derived from the use of machinery and auxiliary means through their cost of amortization, consumables and labor necessary for its operation.

3. Syllabus

DIDACTIC UNIT I: EARTH MOVING PROCEDURES

UNIT 1. EARTH MOVING AND EARTH MOVING MACHINERY

UNIT 2. VOLUMES OF LAND

UNIT 3. TRACTION AND ROLLING CONDITIONS

UNIT 4. PRODUCTION AND COST OF MACHINERY

UNIT 5. DIGGING AND PUSHING:

UNIT 6. EXCAVATION AND LOADING: LOADING SHOVEL

UNIT 7. LOADING AND HAULING: MOTORCYCLES

UNIT 8. EXCAVATION EQUIPMENT: EXCAVATORS

UNIT 9. HARBORING: TRUCKS AND DUMPERS

UNIT 10. SPREADING AND LEVELING: MOTOR GRADERS

UNIT 11. COMPACTING

DIDACTIC UNIT II: GENERAL CONSTRUCTION PROCEDURES

UNIT 12. AUXILIARY RESOURCES

UNIT 13. AGGREGATES PRODUCTION

UNIT 14. FLEXIBLE PAVEMENTS: MACHINERY AND SITE INSTALLATION

UNIT 15. CONCRETE: MACHINERY AND SITE INSTALLATION

UNIT 16. SHORING, FORMWORK, REINFORCING, SHORING AND FALSEWORK

UNIT 17. CRANES AND LIFTING SYSTEMS

UNIT 18 CASE STUDIES OF CONSTRUCTION PROCEDURES

4. Academic activities

There will be the following activities:

- **Face-to-face activities:**

1. Theoretical classes: The theoretical concepts of the subject will be explained and practical examples will be developed.
2. Tutorial practices, problem classes: Students will develop examples and carry out practical problems or cases related to the theoretical concepts studied.

- **Tutored autonomous activities:** These activities will be tutored by the faculty of the subject. The student will have the possibility to carry out these activities at the center, under the supervision of a teacher of the branch/department.
- **Reinforcement activities:** Through a virtual teaching portal (Moodle), various activities will be conducted to reinforce the basic contents of the subject (). These activities will be personalized and controlled through.

5. Assessment system

Two forms of assessment will be followed, a continuous one with two tests taken throughout the term and a global and a final global assessment, this last one with two tests.

Attendance to face-to-face activities must be at least 80%, students who do not meet this requirement will be excluded from the continuous assessment

If the two continuous assessment tests are passed, it is not necessary to take the final comprehensive test.

In the case of not reaching this condition, the student will have to take the final test, even if he/she has passed by continuous assessment any of the tests (regardless of the grade obtained)

The indicative weights of the **continuous assessment** are:

Concept	Percentage	Condition
First Test	60%	Minimum grade of ≥ 4.0
Second Test	30%	Minimum grade of ≥ 4.0
Coursework	10%	Minimum grade of ≥ 4.0

Mean score, between tests, ≥ 5.0

The indicative weights for the **overall assessment** are:

Concept	Percentage	Condition
Single exam	90%	Minimum grade of ≥ 4.0
Term paper	10%	Minimum grade of ≥ 4.0

Mean score, between tests, ≥ 5.0

No parts or grades will be kept from one academic year to the next.