UFV
Teaching guide

IDENTIFICATION DETAILS

Degree:	Architecture

Scope	Architecture, construction, building and urban planning, and civil engineering

Faculty/School:	Higher Polytechnic School

Course:	INFORMATION TECHNOLOGY (MEASUREMENTS)

Type:	Optional	ECTS credits:	3

Year:	5	Code:	3766

Teaching period:	Tenth semester

Subject:	Projects

Module:	Projectual

Teaching type:	Classroom-based

Language:	Spanish

Total number of student study hours:	75

SUBJECT DESCRIPTION

COMPUTER SCIENCE (Measurements) is a subject that allows students to learn to use a measurement software to manage the measurements and budget of an Execution Project, the organization of chapters, work units and price bases, carry out pre-dimensioned studies by chapters, and organize the management of deadlines and costs of the work in an integrated manner.

GOAL

Learn to manage a computer measurement program in order to manage the measurements and budget of an Execution Project, make pre-dimensioned budget estimates by chapters and learn to organize the management of

deadlines and costs of the work in an integrated manner.

PRIOR KNOWLEDGE

To take this course, it is highly advisable to have taken Construction I, II, III and IV subjects. It is recommended to have already taken the subjects of Structures and Installations. It is advisable to simultaneously take the course Measurements, Budgets and Evaluations and to have taken the optional course Management, Organization and Control of Works.

COURSE SYLLABUS

Basic concepts of management of the construction budget management program.
Organization of the Budget in the program.

Definitions:

Concepts
Decomposition of concepts
Hierarchical tree
Root concept
Chapters
Partida
Auxiliary
Basic

Example of a hierarchical tree:

Root concept
Chapters
Subchapters
Work Units or Partitions
Auxiliary Prices
Basic pricing.

The fields in the Program.
Encoding:

Chapters
Subchapters
Matches
Auxiliaries
Labor Force
Machinery

Materials

Information: drawing, entities, documents, terms, image, precedences, measurement, specifications, lower, higher, text 1, text 2, phases, deadlines and associated files.
Prices and quantities.
Percentage type concepts.
Parametric concepts.
Calculation and rounding.
Menus

The carrying out of the measurements and budgeting of an execution project.

Organization and description of the chapters of a work.
Collection and organization of work units: Descriptive text of the departure and process of measurement lines.
Creation of decomposed prices. Use of basic and ancillary prices.
Direct costs, auxiliary means, indirect costs.
Management of the program menu for field adjustments, prices, indirect costs, and construction phases.

Reports.

Report types.
Organization of information.
Report designs, incorporation of logos, graphics and other data.
General expenses, Industrial Benefit, other necessary expenses and taxes to reflect the Contractual Budget.

Management of the work.

Management of work schedules and phased planning.
Management of work certifications.
Control of costs and purchases.
Health and Safety Management and Quality Control.
Integration with other management systems.

Predimensioning of Budgets.

Estimation of projects by pre-dimensioning by chapters.
Adjustment for building comparison.

EDUCATION ACTIVITIES

1. FACE-TO-FACE ACTIVITIES
1.1. Expository classes: Presentation of content and activities by the teacher, commentary, recommended reading, and with the participation of students in the debate and resolution of doubts about the topics proposed in class.
1.2. Carrying out exercises: Solve, individually, on the blackboard or on the table exercises proposed in class to apply the fundamental knowledge received.
1.3. Project workshop: Correction in groups of different sizes of the projects that students carry out in the classroom or at home, and they clarify in the light of the exercises of their classmates and the instructions of their teachers.
1.4. Group work: I work in small groups to deepen the fundamental teaching principles and stimulate coordination capacity among students.
1.5. Tutorial:
1.5.1. Personalized: Individual attention to the student with the objective of reviewing and discussing the topics presented in class and clarifying doubts that the student cannot understand in their personal study.
1.5.2. Group Tutoring: Attention to a small group of students who need additional help to follow the subject. 1.6. Evaluation: Carrying out knowledge assimilation checks throughout the course and with the greatest possible continuity.
2. NON-FACE-TO-FACE ACTIVITIES
2.1. Preparing projects for class discussion: Design and prepare a public presentation of a proposed exercise in class.
2.2. Group work: Group design and development of works.
2.3. Theoretical and practical study: Study of the theoretical and practical contents of the program and preparation of recommended readings.

DISTRIBUTION OF WORK TIME

TEACHER-LED TRAINING ACTIVITIES	INDIVIDUAL WORK
30 Horas	45 Horas

SKILLS

Basic Skills

Students must have demonstrated knowledge and understanding in an area of study that is founded on general secondary education. Moreover, the area of study is typically at a level that includes certain aspects implying knowledge at the forefront of its field of study, albeit supported by advanced textbooks

Students must be able to apply their knowledge to their work or vocation in a professional manner and possess skills that can typically be demonstrated by coming up with and sustaining arguments and solving problems within their field of study.

Students must have the ability to gather and interpret relevant data (usually within their field of study) in order to make judgments that include reflections on pertinent social, scientific or ethical issues

Students must be able to convey information, ideas, problems and solutions to both an expert and non-expert audience

Students must have developed the learning skills needed to undertake further study with a high degree of independence

Ability to solve problems and to take decisions.

Ability to apply procedures.

An understanding of the problems involved in structural design, construction and engineering associated with building projects.

General Skills

Ability to solve problems and to take decisions.

Ability to apply procedures.

An understanding of the problems involved in structural design, construction and engineering associated with building projects.

Specific skills

Aptitude for the conception, practice and development of construction management. (T)

LEARNING RESULTS

Perform the measurements and complete budget of a building through the budget management program.

Organize the budget of the Implementation Project with all the necessary chapters, including the additional chapters determined by the regulations: Safety and Health, Waste Management and Quality Control.

Prepare a budget, write and calculate unit and decomposed prices of units of work, basic and auxiliary prices.

Calculate direct and indirect costs of a work, general expenses and industrial profit, as well as the fees and other expenses necessary to carry out the drafting, processing, management and construction of a building project.

LEARNING APPRAISAL SYSTEM

Evaluation in the ordinary and extraordinary call:

Practice 1. Pre-dimensioned budget (individual): 15%
Practice 2. Organization of the budget and realization of price types (individual): 15%
Practice 3: Building measurements and budgets (groups of 2 people): 50%
Tool exam (individual): 20%

Plagiarism, as well as the use of illegitimate means in evaluation tests, will be sanctioned in accordance with those established in the Evaluation Regulations and the University's Coexistence Regulations.

ETHICAL AND RESPONSIBLE USE OF ARTIFICIAL INTELLIGENCE

1.- The use of any Artificial Intelligence (AI) system or service shall be determined by the lecturer, and may only be used in the manner and under the conditions indicated by them. In all cases, its use must comply with the following principles:
a) The use of AI systems or services must be accompanied by critical reflection on the part of the student regarding their impact and/or limitations in the development of the assigned task or project.
b) The selection of AI systems or services must be justified, explaining their advantages over other tools or methods of obtaining information. The chosen model and the version of AI used must be described in as much detail as possible.
c) The student must appropriately cite the use of AI systems or services, specifying the parts of the work where they were used and describing the creative process followed. The use of citation formats and usage examples may be consulted on the Library website(https://www.ufv.es/gestion-de-la-informacion_biblioteca/).
d) The results obtained through AI systems or services must always be verified. As the author, the student is responsible for their work and for the legitimacy of the sources used.
2.- In all cases, the use of AI systems or services must always respect the principles of responsible and ethical use upheld by the university, as outlined in the Guide for the Responsible Use of Artificial Intelligence in Studies at UFV. Additionally, the lecturer may request other types of individual commitments from the student when deemed necessary.
3.- Without prejudice to the above, in cases of doubt regarding the ethical and responsible use of any AI system or service, the lecturer may require an oral presentation of any assignment or partial submission. This oral evaluation shall take precedence over any other form of assessment outlined in the Teaching Guide. In this oral defense, the student must demonstrate knowledge of the subject, justify their decisions, and explain the development of their work.

BIBLIOGRAPHY AND OTHER RESOURCES

Basic

Agustín Beltrán Moreno Measurements in works adapted to CTE
(Agustín Beltrán Moreno Measurements in works adapted to CTE , Reverté, 2009)