DEGREE CURRICULUM

BUDGETS AND MEASUREMENTS

Academic year 2014-15

2014-15

Subject's general information

Subject name	Budgets and Measurements
Code	101425
Semester	1st semester
Typology	Compulsory
ECTS credits	6
Theoretical credits	2
Practical credits	4
Office and hour of attention	CREA building, 1.04. Thursday 4 PM to 5 PM.
Department	Computer and Industrial Engineering
Modality	Presencial
Important information on data processing	Consult this link for more information.
Language	Catalan
Degree	Degree in Technical Arquitecture
Distribution of credits	Lídia Rincón Villarreal 8.4 credits
Office and hour of attention	CREA building, 1.04. Thursday 4 PM to 5 PM.
E-mail addresses	lrincon@diei.udl.cat

Lídia Rincón Villarreal

Subject's extra information

Subject from the 1st semester of the 3rd year of the degree.

Learning objectives

See competences

Competences

Degree-specific competences

- Aptitude for the development of market studies, valuations and assessments, studies of real estate viability, economical specialist's report and assessment of risks and damage during the building.

  Goals

  - Determining the cost of a project, the economic viability of a development plan and the clinical judgment of damages in a building.
- Ability to analyse and realise projects of building evacuation.

  Goals

  - Without Translate - Determinació del cost d'un projecte.
- Ability to prepare and calculate basic, auxiliary, unitary and estimated prices of the work units; analyse and control the costs during the construction process; elaborate budgets.

  Goals

  - Without Translate - Desglossar les diferents partides d'obra d'un pressupost en els seus preus bàsics.
- Knowledge of the regulation of management and town planning discipline.

  Goals

  - Without Translate - Determinació dels costos d'un desenvolupament urbanístic.

Degree-transversal competences

- Ability to reunite and interpret relevant data, inside an area of study, to express reasons which include reflecting upon relevant subjects of a social, scientific or ethical nature.

  Goals

  - Without Translate - Estudi, pressa de decisions i extracció de conclusions a partir de diferents projectes i pressupostos per tal de determinar els mes adecuats per a cada situació social.
- Ability to pan and organise the personal work.

  Goals

  - Without Translate - Distribució del temps personal per tal de poder abordar els diferents treballs i exercicis platejats tant a classe com fora de les sessions.
- Ability to consider the socio-economical context as well as the criteria of sustainability in the solutions of

engeneering.

Goals

- Without Translate - Decidir la millor alternativa social/sostenible entre diferents opcions amb diferents costos.

- Ability to work in situations where information is lacking or you are under pressure.

  Goals

  - Without Translate - Determinació dels preus de les partides d'obra d'un projecte de les que no es té informació en les bases de dades utilitzades habitualment.

Subject contents

CHAPTER 1. Project Morphology

1.1 Project.

1.2 Stepsof a project.

1.3Documents of the project.

CHAPTER 2. Economic prediction.

2.1Objective of the budget.

2.2Prediction of the cost.

CHAPTER 3. Measurement units.

3.1Definition.

3.2Price tables.

CHAPTER 4. Measurements.

4.1Introduction.

4.2 Units.

4.3Classification and grouping of chapters.

4.4 Typesof measurements.

CHAPTER 5. The budget.

5.1Definition and basic conditions.

5.2 Typesof budgets.

5.3 Budgetelaboration.

5.4 Detailedbudget.

CHAPTER 12. Steel structures.

CHAPTER 13. Wood structures.

CHAPTER 14. Masonry and stone.

- 14.1 Masonry.
- 14.2 Stone.

CHAPTER 15. Roofs and insulation.

- 15.1 Roofs.
- 15.2 Insulation.

CHAPTER 16. Wood and metallic closure.

- 16.1 Woodclosure.
- 16.2 Metallicclosure.

CHAPTER 17. Coating and glassworks.

- 17.1 Coatings.
- 17.2 Glassworks.

CHAPTER 18. Installations.

- 18.1 Electricalinstallations.
- 18.2 Plumbinginstallations.
- 18.3 Gasinstallations.
- 18.4 HVAC installations.
- 18.5 Heatinginstallations.
- 18.6 Transportinstallations.
- 18.7 Especialinstallations.

CHAPTER 19. Urbanization.

- 19.1Generalities.
- 19.2 Measurementcriteria.
- 19.3 Influencefactors.

CHAPTER 20. Health and Safety.

20.1Concept.

20.2 Measurementunits.

20.3 Measurementcriteria.

CHAPTER 21. Refurbishing.

21.1Concept.

21.2 Degreeof actuation.

21.3 Measurementcriteria.

CHAPTER 22. Budget development usingTCQ software.

Methodology

The subject will be taught four hours weekly over 2 hours of lecture and two hours of practical class in half group. The lectures will be considered a theretical lecture with active student participation, where the contents of the subject will be exposed. During the same week, in practice class they will arise and solve problems related to the contents exposed during the previous theoretical session. During the course the student will be indicated in the literature and regulations that have to be based for a proper study of the issues. Given the importance of the active participation of student, the assistance is essential in both lectures and practices.

Development plan

Date	Description	Professor
Sep 16th	Presentation	L. Rincón
Sep 16th	Chapter 1. Project morphology	L. Rincón
Sep 17th	Chapter 2. Economic prediction	L. Rincón
Sep 17th	Exercices chapter 2	L. Rincón
Sep 23rd	Chapter 3. Measurement units Chapter 4. Measurement Chapter 5. The budget	L. Rincón
Sep 24th	Exercices chapter 2. Economic prediction	L. Rincón
Sep 30th	Chapter 6. Materials cost Chapter 7. Labour cost Chapter 8. Machinery cost Chapter 9. Auxiliary equipment cost	L. Rincón
Oct 1st	Exercices chapter 6-7-8-9	L. Rincón
Oct 7th	Chapter 10. Earthworks	L. Rincón

Oct 8th	Exercices chapter 10. Earthworks	L. Rincón
Oct 14th	Chapter 10. Foundations	L. Rincón
Oct 15th	Exercices chapter 10. Foundations	L. Rincón
Oct 21st	Chapter 10. Retaining walls	L. Rincón
Oct 22nd	Exercices chapter 10. Retaining walls	L. Rincón
Oct 28th/29-th	No class	
Nov 4th	Chapter 11. Reinforced concrete structures	L. Rincón
Nov 5th	Exercices chapter 11. Reinforced concrete structures	L. Rincón
Nov 10th-14th	Evalutation	L. Rincón
Nov 18th	Chapter 22. Budget development using TCQ software	L. Rincón
Nov 19th	Exercices chapter 22. TCQ software	L. Rincón
Nov 25th	Chapter 12. Steel structures Chapter 13. Wood structures	L. Rincón
Nov 26th	Exercices chapter 12. Steel structures	L. Rincón
Dec 2nd	Chapter 14. Masonry and stone Chapter 15. Roofs and insulation	L. Rincón
Dec 3rd	Exercices chapter 13. Wood structures + Practice	L. Rincón
Dec 9th	Chapter 16. Wood and metallic closure Chapter 17. Coating and glassworks	L. Rincón
Dec 10th	Exercices chapters 14-15-16-17	L. Rincón
Dec 16th	Chapter 18. Installations Chapter 19. Urbanization	L. Rincón
Dec 17th	Chapter 20. Helth and safety Chapter 21. Refurbishing	L. Rincón
Jan 7th	Exercices chapters 18-19-20-21	L. Rincón
Jan 12th-23rd	Evaluation	L. Rincón
Feb 2nd-6th	Recovery activities	L. Rincón

Evaluation

Evaluation activities (Criteria)	%	Date
Written test T1 (>=4)	30	Week 9
Written test T2 (>=4)	30	Week 16/17
Practice 1	15	Week 10
Practice 2	15	Week 16
Exercices at class	10	Continuous
Recovery written test (T1+T2)	30+30	Week 19

Bibliography

Recommended bibliography

- Ruiz Fernández, J.P. Aspectos económicos del Proceso de la Edificación. Ed. Del Autor. Cuenca, 2002.
- Andrés Baroja, B.; Baringo Sabater, P. (1998) Presupuestos de obra. Análisis y metodología. Barcelona: Departamento de Organización de Empresas. UPC. Depósito legal: B-40.147
- Andrés Baroja, B.; Baringo Sabater, P. (1997) Rendimientos de la mano de obra en la edificación. Barcelona: Departamento de Organización de Empresas. UPC.
- Andrés Baroja, B.; Baringo Sabater, P.; Vilajosana Béjat, J. (2002) Aplicación y control de presupuestos en obra. Introducción a las valoraciones inmobiliarias. Barcelona: Departamento de Organización de Empresas. UPC. Depósito legal: B-48.377.
- Ramirez de Arellano Agudo, A et al Recomendaciones sobre criterios de mediciones en construcción. Ed. Asociación Española de Profesores de Mediciones, Presupuestos y Valoraciones. Madrid, 1994.
- Garcia Muñoz, G. (2001) Precio, tiempo y arquitectura. Madrid: Mairena/Celeste.
- Ramirez de Arellano Agudo, A. (2000) Presupuestación de obras. Sevilla: Universidad de Sevilla.
- Sanchez Rodriguez, M. (1983) Control de costos en la construcción. Barcelona: C.E.A.C.
- Quadre de Preus referència d'edificació, d'enginyeria civil, d'urbanització, rehabilitació, seguretat i salut i assaigs de control de qualitat elements simples, elements compostos, partides d'obra i conjunts d epartides d'obra (2008). Barcelona: ITEC (Institut de Tecnologia de la Construcció de Catalunya).