Course Outline

CE-730, Engineering Project Management

(1) General

Faculty	Faculty of Engineering		
Academic Unit	Department of Civil Engineering		
Level of Studies	*Undergraduate*		
Course Code	**CE-730**	**Semester**	7
Course Title	**Engineering Project Management**		

Independent Teaching Activities *if credits are awarded for separate components of the course e.g. lectures laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**Weekly Teaching Hours**	**ECTS**
Lectures	4	4
Laboratory exercises		
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).	**4**	**4**

Course Type *general background, special background, specialised general knowledge, skills development*	Special background
Pre-requisite Courses:	None
Teaching Language:	Greek, English, French, Italian
Is the course offered to ERASMUS students?	YES
Course Website (URL)	https://eclass.uniwa.gr/modules/auth/opencourses.php?fc=69

(2) Module aims – Learning outcomes

Module aims – Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course, are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

Module aims

Today's professional environment is highly competitive, continuously changing and difficult to manage. The aim of this course is to provide to the students the tools and techniques to more effectively and successfully manage projects.

Learning outcomes

On successfully completing this course unit, students will be able to:

- Understand both people-related and technical requirements necessary for the successful management of engineering projects
- Develop the work breakdown structure of a project
- Apply network analysis methods for project scheduling and develop Gantt charts
- Estimate activity resources and develop resource scheduling

- Estimate project budgets and plan cost management
- Utilize project management software
- Understand the quality management philosophy and be familiar with quality management systems.
- Understand the essential tasks for achieving healthy and safe construction sites.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*
Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Production of new research ideas	*Others…*
	…….

The course aims to the following general competences:

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Working independently
- Team work
- Working in an international environment
- Decision making

(3) Module syllabus

Theory Lectures

- Introduction to Project Management – Basic definitions: project definition, project life cycle, project environment in which civil engineering projects are carried out, project complexity, project management bodies of knowledge, project management standards, benefits of project management, project stakeholders
- Scope management, Work Breakdown Structure (WBS), Product Breakdown Structure (PBS), Organisation Breakdown Structure (OBS).
- Project Time Management:
  - Plan schedule management – Define Activities - Sequence of Activities.
  - Schedule Network Analysis
  - Generalized Precedence Relations
  - The Critical Path Method (CPM) – The Program Evaluation and Review Technique (PERT)
  - Scheduling using Gantt Chart
  - Time/Cost Schedulling Trade-Offs – Project Crashing
  - Resource – Constrained Project Schedulling
  - Project Control – S curves

- Project Quality Management: Quality Management Philosophy, Quality Assurance, Quality Planning, Quality Control, Quality Control Plan, Quality Costs, Total Quality Management (TQM), Quality management systems (ISO standards)
- Health and safety in construction: Rules and regulations, setting up the site, site access and boundaries, first aid, site management, working at height, etc.
- Lean construction management: Basic definitions, leaning thinking, the importance of value, learning to see waste, value stream

Tutorials

The analytical program of tutorials follows the program of the theoretical part mentioned above. Each laboratory exercise is designed to establish a grounded view of the relation between theory and application.

Computer Laboratory Lectures

During laboratory lectures students are introduced to the Microsoft Project Software (MS project), which is a powerful project management tool for project planning, managing and monitoring. It constitutes in practice one of the widespread used IT tool for mid-range project managers who are managing large project with up to about 2000 tasks.

In the last week of the semester, students need to sumbit their own project using the MS project software.

(4) Teaching and Learning Strategy – Assessment Strategy

Teaching Methods *Face-to-face, Distance learning, etc.*	This module is taught through a combination of lectures, tutorial exercises, laboratory sessions and coursework exercises.
Use of Information and Communications Technology *Use of ICT in teaching, laboratory, education, communication with students*	• Teaching using of Interactive board and projector • Support learning process through electronic e-class platform. Exercises and educational material are provided through e-class.
Teaching Methods *The manner and methods of teaching are described in detail.* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc. The student's study hours for each learning activity are given as well as the hours of nondirected study according to the principles of the ECTS*	

Activity	***Semester workload***
Lectures for the theoretical part of the course	60
• Computer Laboratory Exercises • Tutorial Exercises	25
Independent study	25
Coursework	20
Total	**130**

Assessment Method *Description of the evaluation procedure* *Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other* *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	Student performance is assessed through coursework completed during term time and through formal examinations. Written Examination (60%) – Coursework (40%)

(5) Reading List

Recommended Bibliography

1. Rory Burke, "Project Management – Tools and Techniques", Burke Publishing, 2013
2. Maylor, Harvey. "Project Management". 4. ed. Harlow London: Financial Times Prentice Hall, 2010.
3. Bowen, H. Kent. 'Project Management Manual' Harvard Business School Background Note 697-034 (13 September 1996).
4. APM, Body of Knowledge (BoK) 6th Edition. Ibis House, Regent Park, Summerleys Road, Princes Risborough, Buckinghamshire: Association of Project Management (APM), 2012.
5. PMI, A Guide to the Project Management Body of Knowledge 5th Edition (PMBOK Guide). Newtown Square, Pennsylvania: Project Management Institute, Inc, 2013.
6. Fellows, R., Langford, D., Newcombe, R. and Urry, S., "Construction management in practice", Blackwell Science, 2002.
7. Fink, S., "Health and Safety Law for the Construction Industry", Mason's Guide, Thomas Telford, 1997.
8. Walker, A., "Project management in construction", 5th edition, Wiley Blackwell,2007
9. Hughes P. and Ferrett E., Introduction to Health and Safety in Construction, Butterworth-Heinemann, 2006
10. BS 6079- Part 1. Project Management. Principles and Guidelines for the Management of Projects. British Standards Institute, Milton Keynes., 2010.
11. Institute, Project Management. The Standard for Portfolio Management. 2 Original edition. Newtown Square, PA: Project Management Inst, 2008.

-Related scientific journals

1. International Journal of Project Management, ELSEVIER
2. Project Management Journal, SAGE Publications