

## COURSE OUTLINE

### 1. GENERAL

|   |   |                              |                     |
|---|---|------------------------------|---------------------|
| <b>SCHOOL</b>                               | APPLIED SCIENCES  |                              |                     |
| <b>DEPARTMENT</b>                           | Department of Environmental Engineers/<br>Division of Environmental Geo-technology Engineering                        |                              |                     |
| <b>LEVEL OF STUDY</b>                       | Undergraduate   |                              |                     |
| <b>COURSE UNIT CODE</b>                     | <b>GE5420</b>   | <b>SEMESTER OF STUDY</b>     | 4th                 |
| <b>COURSE TITLE</b>                         | Management of Mineral and Geotechnical Projects   |                              |                     |
| <b>COURSEWORK BREAKDOWN</b>                 |   | <b>TEACHING WEEKLY HOURS</b> | <b>ECTS Credits</b> |
| Lectures, Laboratory Exercises              |   | 4                            | 5,5                 |
| <b>COURSE UNIT TYPE</b>                     | SC  |                              |                     |
| <b>PREREQUISITES :</b>                      | None  |                              |                     |
| <b>LANGUAGE OF INSTRUCTION/EXAMS:</b>       | Greek/English   |                              |                     |
| <b>COURSE DELIVERED TO ERASMUS STUDENTS</b> | Yes   |                              |                     |
| <b>MODULE WEB PAGE (URL)</b>                | <a href="http://geope.teikoz.gr/undergraduate/ug_studies.htm">http://geope.teikoz.gr/undergraduate/ug_studies.htm</a> |                              |                     |

### 2. LEARNING OUTCOMES

|   |
|---|
| <b>Learning Outcomes</b>  |
| <p>The course aims to provide specialized knowledge for the organization and management of geotechnical and mineral projects so that the students will be able:</p> <ul style="list-style-type: none"> <li>• To organize worksites of geotechnical and mineral projects</li> <li>• To administrate production units of geotechnical and mineral projects</li> <li>• To apply worksites organizational methods in geotechnical and mineral projects administration.</li> </ul> <p>To manage state owned projects.</p>  |
| <b>General Skills</b>   |
| <p><i>Upon successful completion of the programme students will:</i></p> <ul style="list-style-type: none"> <li>-have the basic theoretical and practical knowledge in the fields of the subject area of Geotechnology and Environmental Engineering</li> <li>-be able to properly apply the theoretical and practical knowledge acquired during the study period</li> <li>-be able to cover a wide spectrum of scientific and technical knowledge related to mining and geotechnical projects as well as the sector of environmental reclamation</li> <li>-have gained the necessary competencies to proceed to their second cycle study.</li> </ul> |
| <p>On successful completion of this module the learner will be able to :</p> <ol style="list-style-type: none"> <li>1. To be able to apply the basic project management rules in the geotechnical and mineral projects</li> <li>2. To be able to organize and manage a geotechnical or mineral project.</li> </ol> <p>To know and apply the law for the state owned projects.</p>   |

### 3. COURSE CONTENTS

Introduction in project planning and management, Project Planning and Control using the Critical Path Method (CPM): The problem of planning (analysis into partial tasks or activities, time & quantity restrictions). Depiction of the problem, Critical Path, dates for earlier and later commencement of activities, activity boundaries, project log). Planning of available means for the execution of the works, Project Financial Aspects (Feasibility Preliminary Design, Feasibility Design, Project Finance, Offers Preparation. GANNT Diagram, Preparation of Cash Flow, Doubtfulness in the estimation of duration. Program Evaluation and Review Technique, PERT). Computer utilization in the resolution of problems relevant to project planning.

Project Life Cycle, milestone activities, intermediate time limits, overlapping phases, analysis level, product life cycle.

Managing public works, determining a public work, procedures for an auction, project contract, project quality program, project's insurance, ESPEL, management of the project, project's daybook, duration of the project, new prices, organizing health and safety procedures, completion of the project.

Feasibility Study, initial planning, setting the team, programming the study, studying future perspectives, determining the needs of the client, evaluating the restrictions, evaluating alternative solutions, selecting information, cost-benefit analysis.

Project selection, models for project selection, numerical models, Payback period, return on investment, discount cash-flow, net present value, internal rate of return, scoring models.

### 4. TEACHING METHODS - ASSESSMENT

|  |  |                                 |
|--|--|---------------------------------|
| <b>MODE OF DELIVERY</b>                                | Face – to - face   |                                 |
| <b>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY</b> | Power point presentations and self-assessment test in the Blackboard.<br>Students are contacted by e-mail. |                                 |
| <b>TEACHING METHODS</b>                                | <b><i>Method description</i></b>   | <b><i>Semester Workload</i></b> |
|  | Lectures   | 45                              |
|  | Field Work   | 10                              |
|  | Laboratory Exercises   | 45                              |
|  | Autonomous Study   | 12,5                            |
|  | Total  | 112,5                           |
| <b>ASSESSMENT METHODS</b>                              | Written Examination, Oral Presentation, tests, written   |                                 |

|  |  |
|--|--|
|  | <p>assignments.</p> <ol style="list-style-type: none"> <li>1. Each lab exercise is examined orally and by a written test. The laboratory examination of each subject must be successful.</li> <li>2. At the end of each lecture, students are asked to answer a number of questions related to the lecture.</li> <li>3. For the final grade counts the performance in the laboratory exercises (45%), the field work (10%) and the written exam at the end (45%).</li> </ol> |
|--|--|

## 5. RESOURCES

### - Recommended Book Resources:

1. D. Soldatos «Public Works » Editions M. Dimopoulos 2005.
  2. P. Paulopoulos «The contract for the implementation of public works – articles » edition. A.Sakoula 1997.
  3. A. Tsika-Xanthopoulou «Construction of Public Works» edition Papatiriu 1994.
  4. A. Dimitriadis «Management– Project Management» editions New Technologies1998.
  5. R. Burke “Project Management Planning and Control” John Wiley 1993.
  6. R. Stone “Management of Engineering Projects” MacMillan 1988.
  7. P. Ypsiladis – K. Sirakoulis “Project Management – the Greek experience” ed. Propompos 2005.
  8. D. Goleman, R. Boyatzus, A. Mckee «The new leader – the power of emotional intelligence in managing organizations» ed. Greek Letters 2002.
  9. S. Polyzos «Project Management – Methods and Techniques» ed. Kritiki 2002.
- Nokes and Greenwood «The absolute guide for project management» ed. Kerkyra 2003.

SC: Specialization Courses