1.1.1 Geodesy I

GENERAL

SCHOOL	Engineering		
ACADEMIC UNIT	CIVIL ENGINEERING		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	ΣΥΓ001	**SEMESTER**	1st
COURSE TITLE	Geodesy I		

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**	**CREDITS**
Lectures and Practice	4	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Scientific Field
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No
COURSE WEBSITE (URL)	https://elearning.cm.ihu.gr

LEARNING OUTCOMES

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*

• Understand the principles of operation of basic surveying instruments.
• Conduct field measurements using a theodolite and the tachymeter-stadia system.
• Possess the theory of basic surveying applications: measurement of horizontal and vertical angles, distance measurement, photogrammetric mapping, geometric and trigonometric leveling, and apply them in practice.
• Be able to draw topographic diagrams.

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
Adapting to new situations
Decision-making
Working independently
Team work
Project planning and management
Respect for difference and multiculturalism
Respect for the natural environment
Showing social, professional and ethical responsibility and sensitivity to gender issues
Criticism and self-criticism

Working in an international environment *Working in an interdisciplinary environment* *Production of new research ideas*	*Production of free, creative and inductive thinking* *……* *Others…* *…….*

The course contributes to the following skills:
_Search for, analysis and synthesis of data and information, with the use of the necessary technology
_Decision-making
_Working independently
_Team work
_Applying knowledge
_Respect for difference and multiculturalism
_Criticism and self-criticism
_Production of free, creative and inductive thinking

SYLLABUS

Topics covered in the course include:
Introduction to topography. Error theory. Instruments and methods for angle measurements. Instruments and methods for distance measurements. Instruments and methods for altitude differences measurements. Advances in instrument and measurement technology. Mapping of detailed points. Area and volume calculations. Land distribution. Production of a topographic diagram.

TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face to face.
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Powerpoint presentations, E-learning platform for educational material.
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 non-directed study according to the principles of the ECTS*	

Activity	***Semester workload***
Lectures	26
Practice/exercises	26
Project(s)	26
Individual study	52
Course total (26 hours workload per ECTS credit)	***130***

STUDENT PERFORMANCE EVALUATION *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.*	Inferential Assessment. • Laboratory assignment • Oral examination • Written final examination including: o Theoretical Extended Response Questions (formative and/or inferential) o Problem-solving exercises The present course description with the assessment criteria is accessible to students in the Department's Study Guide (Department Website).

ATTACHED BIBLIOGRAPHY

- [In Greek] Μαθήματα Γεωδαισίας, 2η Έκδοση, Γεωργόπουλος Γ., Εκδόσεις Τζιόλα.
- [In Greek] Γεωδαισία Ι: Γεωδαιτικές μετρήσεις και υπολογισμοί, Σαββαΐδης Π., Υφαντής Ι., Δούκας Ι., Εκδόσεις Κυριακίδη.
- [In Greek] Εφαρμοσμένη Γεωδαισία, Λάμπρου Ε., Πανταζής Γ., Εκδόσεις Ζήτη.
- [In Greek] Στοιχεία Τοπογραφίας, Στυλιανίδης Ε., Εκδόσεις Δίσιγμα.
- [In Greek] Εφαρμοσμένη Τοπογραφία, Τόμος Α', 3η Έκδοση, Καριώτης Γ., Παναγιωτόπουλος Ε., Εκδόσεις Δίσιγμα.