

## COURSE OUTLINE

### (1) GENERAL

|                                                  |                                                                                                                                                               |                              |                |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------|
| <b>SCHOOL</b>                                    | SCHOOL OF SCIENCES                                                                                                                                            |                              |                |
| <b>ACADEMIC UNIT</b>                             | DEPARTMENT OF MATHEMATICS                                                                                                                                     |                              |                |
| <b>LEVEL OF STUDIES</b>                          | POSTGRADUATE <b>Studies in Mathematics</b>                                                                                                                    |                              |                |
| <b>COURSE CODE</b>                               | <b>C2</b>                                                                                                                                                     | <b>SEMESTER</b>              |                |
| <b>COURSE TITLE</b>                              | HISTORY OF MATHEMATICS                                                                                                                                        |                              |                |
| <b>INDEPENDENT TEACHING ACTIVITIES</b>           |                                                                                                                                                               | <b>WEEKLY TEACHING HOURS</b> | <b>CREDITS</b> |
|                                                  |                                                                                                                                                               | 3                            | 10             |
| <b>COURSE TYPE</b>                               | SPECIALISED GENERAL KNOWLEDGE                                                                                                                                 |                              |                |
| <b>PREREQUISITE COURSES:</b>                     | NO                                                                                                                                                            |                              |                |
| <b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b> | GREEK                                                                                                                                                         |                              |                |
| <b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b> | YES                                                                                                                                                           |                              |                |
| <b>COURSE WEBSITE (URL)</b>                      | <a href="http://www.math.aegean.gr/index.php/en/academics/undergraduate-programs">http://www.math.aegean.gr/index.php/en/academics/undergraduate-programs</a> |                              |                |

### (2) LEARNING OUTCOMES

|                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Learning outcomes</b>                                                                                                                                                                                                                                                                                                                            |
| Objectives of the course are to acquaint students with elements of mathematics through their historical evolution with an ultimate aim to deepening in mathematical science areas, which may be chosen later, during their scientific course. Also, knowledge of mathematics history be exploited in an appropriate way during didactical practice. |
| <b>General Competences</b>                                                                                                                                                                                                                                                                                                                          |
| Search for analysis and synthesis of data and information. Working independently. Team work. Production of free, creative and inductive thinking.                                                                                                                                                                                                   |

### (3) SYLLABUS

Ancient Civilizations and Mathematics. The Beginnings of scientific foundation of mathematics: Thalys, Pythagoras and the Pythagoreans, Euclid. Mathematics and Reality: Euclidean and Non-Euclidean Geometries - Hilbert. Foundations of Mathematics: Streams in the Philosophy of Mathematics. Important theorems in Geometry History.

### (4) TEACHING and LEARNING METHODS - EVALUATION

|                                                         |                                        |                          |
|---------------------------------------------------------|----------------------------------------|--------------------------|
| <b>DELIVERY</b>                                         | Face-to-face                           |                          |
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> | Communication with students via e-mail |                          |
| <b>TEACHING METHODS</b>                                 | <b>Activity</b>                        | <b>Semester workload</b> |
|                                                         | Lectures                               | 39                       |
|                                                         | Independent study                      | 148.5                    |
|                                                         | Assignments                            | 62.5                     |

|                                       |                                                                                                                                                                                                                        |            |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|                                       | Course total (25 per ECTS)                                                                                                                                                                                             | <b>250</b> |
| <b>STUDENT PERFORMANCE EVALUATION</b> | <p>Student evaluation is done in Greek through weekly written papers and final written work that will be presented to the classroom.</p> <p>For students with disabilities, evaluation takes place via oral exams.</p> |            |

### **(5) ATTACHED BIBLIOGRAPHY**

1. Boyer, C. & Merzbach, U. (1997). Η Ιστορία των Μαθηματικών (μετάφραση Β. Κουσουλάκου). Αθήνα: Εκδόσεις Γ.Α. Πνευματικός.
2. Cooke, R. (2013.) The history of mathematics: a brief course. Hoboken NJ: Wiley.
3. Dauben, J. W. (2002). Writing the history of mathematics: its historical development. J. Scriba (eds). Basel [u.a.]: Birkhäuser.
4. Eves, H.(1989). Μεγάλες στιγμές των Μαθηματικών έως το 1650 (μετάφραση Μ. Κωνσταντινίδης & Ν. Λιλής). Αθήνα: Τροχαλία.
5. Hairer E., Wanner G. (2008). Analysis by its history. New York, NY: Springer.
6. Katz, V. (1998). Ιστορία των Μαθηματικών: Μια Εισαγωγή (μετάφραση Κ. Χατζηκυριάκου, Επιμέλεια Γ. Χριστιανίδη). Ηράκλειο: Πανεπιστημιακές Εκδόσεις Κρήτης, 2013.
7. Loria, G. (1972). Ιστορία των Μαθηματικών. Αθήνα: Ελληνική Μαθηματική Εταιρεία & Εκδόσεις Παπαζήση.
8. Ostermann A., Wanner G. (2012). Geometry by Its History. Berlin, Heidelberg: Springer Berlin Heidelberg.
9. Sesiano Jacques. (2009). An introduction to the history of algebra: solving equations from Mesopotamian times to the Renaissance. Providence RI: AMS.
10. Stillwell, J. (2010). Mathematics and Its History. New York, NY: Springer Science+Business Media, LLC.