**COURSE LAYOUT**

1. **GENERAL**

| **SCHOOL** | APPLIED ECONOMICS AND SOCIAL SCIENCES |
| --- | --- |
| **DEPARTMENT** | AGRICULTURAL ECONOMY AND RURAL DEVELOPMENT |
| **STUDY LEVEL** | *Undergraduate* |
| **COURSE CODE** | **1180** | **SEMESTER** | 2nd  |
| **COURSE TITLE** | Mathematics II (OBLIGATORY) |
| **INDEPENDENT TEACHING ACTIVITIES** | **WEEKLY TEACHING HOURS** | **ECTS** |
| Lectures | **4** | 4 |
|  |  |  |
|  |  |  |
|  |  |  |
| **COURSE TYPE** | Infrastructure/ General knowledge/ Skills development  |
| **PREREQUISITES** |  |
| **LANGUAGE** | Greek |
| **IS THE COURSE OFFERED forERASMUS STUDENTS?** | Yes (in Greek) |
| **COURSE WEB PAGE** |  |

1. **LEARNING OUTCOMES**

| **Learning Outcomes** |
| --- |
|  |
| After this course, the student is expected to be able to: * use and apply definitions and notions of Infinitesimal Calculus in a pure or applied sense.
* Use and apply mathematical methods in basic problems of Agricultural Economy and Rural Environment
* develop critical thinking through result verification
 |
|  | **General Competenses** |
| 1) Adapt to new situations.2) Make decisions.3) Work autonomously.4) Create new research ideas. 5) Advance free, creative and inductive thinking. |

1. **COURSE CONTENT**

| 1) PRELIMINARIES: Complex numbers, Sequences, Mathematical Induction. 2) DIFFERENCE EQUATIONS: Definite Integral as area, Fundamental Theorem of Calculus, Indefinite Integral, Integration techniques, Applications.3) LINEAR ALGEBRA: Linear Spaces and Subspaces, Matrices, Eigenvalues and Eigenvectors, Similarity, Jordan Canonical Form. 4) MULTIPLE INTEGRALS: Double Integrals, Area, Polar coordinates, Triple Integrals, Volume, Cylindrical and Spherical coordinates.  |
| --- |

1. **TEACHING and LEARNING METHODS - Evaluation**

| **TEACHING METHOD** | Live, face to face teaching in the classroom\*\*Due to the special circumstances (COVID-19), synchronous distance teaching can be applied and educational material for asynchronous distance teaching has been uploaded in the Open e-class platform. |
| --- | --- |
| **USE OF INFORMATICS and COMMUNICATION TECHNOLOGIES** | Educational material, updates and announcements available via Open e-class platform. |
| **TEACHING ORGANISATION** |

| *Activity* | *Work Load (hours)* |
| --- | --- |
| Lectures | 52 hours |
| Individual study | 48 hours |
| Total contact hours and training(25 hours per ECTS) | 100 hours(5 ECTS) |

 |
| **STUDENTS EVALUATION** | Written examination of gradual difficulty, based on the lectures offered, containing:- Problems and/or exercises.- Comprehension questions.  |

1. **BIBILIOGRAPHY**

| 1. THOMAS ΑΠΕΙΡΟΣΤΙΚΟΣ ΛΟΓΙΣΜΟΣ, Joel Hass, Christopher Heil, Maurice D. Weir, Πανεπιστημιακές Εκδόσεις Κρήτης.2. Σακκαλής, Π.  Απειροστικός Λογισμός και Πραγματική Άλγεβρα. Εκδόσεις Τυπωθήτω, Γ έκδοση, Σεπτέμβριος 2008*.*3. Finney R. L., Weir W. D. A., Giordano F. R. Απειροστικός Λογισμός. Πανεπιστημιακές εκδόσεις Κρήτης, 1Η/2012. 4. Marsden, J. E., Tromba, A. J., Weinstein, A. Basic multivariable calculus, Springer Verlag, Inc. New York 1993. |
| --- |