SYLLABUS

SPECIAL MATHEMATICS 1

Course Code: SICMI 14
Type of course: compulsory
Language of instruction: English tutoring available for Erasmus students
Name of lecturer: Prof. Daniel Breaz, PhD
Full time studies

Form of instruction	Number of teaching hours per semester	Number of teaching hours per week	Semester	Form of receiving a credit for a course	Number of ECTS credits allocated
Class	28	2	Autumn	Grade	6

COURSE AIMS:
After going through the course, students will acquire skills in using different interpolation methods using MATLAB software in achieving specific problems of geodesy.

ENTRY REQUIREMENTS: -

COURSE CONTENTS:

1. Least squares functions approximation
2. Least squares failure
3. Polynomials and matching data in MATLAB
4. Polynomial interpolation
5. Lagrange, Hermite interpolation
6. Calculation of polynomial interpolation efficient
7. Aitken type methods
8. Spline interpolation. Linear spline, Cubic spline interpolation.
9. uniform approximation, Bernstein polynomials
10. Applications in MATLAB: 1D interpolation, interpolation by least squares, interpolation Hermite. Using functions: interp1, splines, pchip
11. Applications in MATLAB: 2D and 3D interpolation. Using functions: interp2, interp3
12. Applications in MATLAB: 2D and 3D interpolation. Using functions: interpn, ndgrid
13. Applications in MATLAB: 2D and 3D interpolation. Using functions: meshgrid, griddata

TEACHING METHODS:
Lecture, discussion, exemplification.

LEARNING OUTCOMES:
In order to obtain credits for this discipline the students have to:
- Know the basics on the approximation by least squares, linear interpolation;
- Can determine the interpolation error expression;
- Can achieve concrete interpolation problem 1D, 2D and 3D using MATLAB
- Form their skills to plot different surfaces processed using MATLAB specific functions, such as: interp2, interp3, interpn

LEARNING OUTCOMES VERIFICATION AND ASSESSMENT CRITERIA:
Final evaluation – 50%; continuous assessment – 50%.

RECOMMENDED READING:

- A. Bjork, Numerical Methods for Least Square Problem, SIAM, Philadelphia, 1996.
- The Mathworks Inc. , Version 7
- 3. Steven Chapra, Applied Numerical Methods With MATLAB: for Engineers & Scientists, 3rd Edition McGraw-Hill Science/Engineering/Math 2011
- 4. William Palm III, Introduction to MATLAB for Engineers, Third Edition McGraw-Hill Science/Engineering/Math 2010

REAL ESTATE MANAGEMENT
Course Code: SICMI 34
Type of course: compulsory
Language of instruction: English tutoring available for Erasmus students
Name of lecturer: Begov Ungur Andreea, PhD Eng.
Seminar tutor: Begov Ungur Andreea, Lecturer PhD Eng.
Full time studies

Form of instruction	Number of teaching hours per semester	Number of teaching hours per week	Semester	Form of receiving a credit for a course	Number of ECTS credits allocated
Class	28	2	Autumn	Colloquy	6

COURSE AIMS:
- knowing, understanding and a correct using of fundamental ideas concerning concepts specific to Real estate management;
- knowing of basic problems and concepts that Real estate management is operating;
- knowing the ways of organizing, structuring and data modeling specific to Real estate management.

ENTRY REQUIREMENTS:
Cadastral management, Real estate cadastre, Real estate evaluation

COURSE CONTENTS:
1. Generalities.
2. Basic concepts of real estate management.
3. The concept of analysis and real estate management.
4. Forms of activity organization on works to introduction and maintenance of real estate cadastre.
5. Identification and classification of types of geodetic, topographic, photogrammetric and cartographic executed to introduction and maintenance of real estate cadastre.
6. Parameters used in programming and organizing the work of real estate cadastre.
7. Programming methods of execution of real estate cadastre works. Gantt graphic.
8. Management of investment projects in the real estate field.
9. Phases and structure of the investment project.
10. The analysis of investment project in real estate.
11. Real estate management in the construction process.
12. The management of the real estate portfolio.

TEACHING METHODS:
Lecture, conversation, exemplification.

LEARNING OUTCOMES:
- to accustom students with terminology, methods, equipment and instruments specific of this discipline;
- to give students the basics concepts needed to achieve a work of real estate management in accordance with current legislation;
- understanding of issues they will encounter in their future profession.

LEARNING OUTCOMES VERIFICATION AND ASSESSMENT CRITERIA:
Written exam – 60%; Portfolio of practical work – 40%.

RECOMMENDED READING:

- Achim M.I., Palamariu M. – Managementul lucrărilor de geodezie şi cadastru, Editura Aeternitas, Alba iulia, 2009;
- Consiliul facultăţii de Geodezie Bucureşti - Măsurători terestre fundamente, Ed. MATRIX ROM, Bucureşti, 2002;
- Constantinescu D.A. – Management, Colecţia Naţională, Bucureşti 2002;
- Palamariu M. – Managementul lucrărilor de cadastru, Seria Didactica, Alba Iulia, 2005;
- Pădure I., Ungur A. – Cadastre de specialitate, Editura Risoprint, Cluj Napoca, 2006;
- Proca G. - Managementul lucrărilor de cadastru, Editura MATRIX ROM, Bucureşti, 2000;
- *** - Normele de muncă unificate pe economie pentru lucrări geodezice, topo-fotogrammetrice şi cartografice (lucrări de măsurători terestre) O - 1987;
- *** - Norme de timp pentru operaţiile necesare realizării lucrărilor şi prestării serviciilor de specialitate în cadrul Centrului Naţional de Geodezie, cartografie, Fotogrammetrie şi Teledetecţie, Bucureşti, 2007