Universitat de Lleida

DEGREE CURRICULUM

MATHEMATICS

Coordination: PLA ARAGONES, LUIS MIGUEL

Academic year 2022-23

MATHEMATICS 2022-23

Subject's general information

<table>
<tr><td>Subject name</td><td>MATHEMATICS</td></tr>
<tr><td>Code</td><td>102601</td></tr>
<tr><td>Semester</td><td>1st Q(SEMESTER) CONTINUED EVALUATION</td></tr>
<tr><td>Typology</td><td>
<table>
<tr><th>Degree</th><th>Course</th><th>Character</th><th>Modality</th></tr>
<tr><td>Bachelor's Degree in Tourism</td><td>1</td><td>COMMON/CORE</td><td>Attendance-based</td></tr>
<tr><td>Double degree: Bachelor's degree in Geography and Bachelor's degree i Tourism</td><td>1</td><td>COMMON/CORE</td><td>Attendance-based</td></tr>
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<tr><td>Course number of credits (ECTS)</td><td>6</td></tr>
<tr><td>Type of activity, credits, and groups</td><td>
<table>
<tr><th>Activity type</th><td>PRAULA</td><td>TEORIA</td></tr>
<tr><th>Number of credits</th><td>3</td><td>3</td></tr>
<tr><th>Number of groups</th><td>1</td><td>1</td></tr>
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<tr><td>Coordination</td><td>PLA ARAGONES, LUIS MIGUEL</td></tr>
<tr><td>Department</td><td>MATHEMATICS</td></tr>
<tr><td>Important information on data processing</td><td>Consult this link for more information.</td></tr>
<tr><td>Language</td><td>Catalan</td></tr>
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MATHEMATICS 2022-23

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
MESSEGUE BUISAN, ARNAU	visitant.arnau.messegue@udl.cat	1	
MIRET BIOSCA, JOSE MARIA	josepmaria.miret@udl.cat	2	
PLA ARAGONES, LUIS MIGUEL	lluismiquel.pla@udl.cat	3	

Subject's extra information

The course as part of the academic plan

The subject of mathematics is presented as a tool for developing and managing the activities of advisory degree in tourism as one of the objectives you. In this sense, the syllabus gives a basic elementary math, beginning a preliminary (item 1) in the other essential topics. In the chapter 2 explains linear programming as a tool for solving optimization problems, both common in the context of the administration. 3 The issue turns on the bypass, only giving some content to develop the basic theme is 4 on financial mathematics.

Competences

University of Lleida strategic competences

- Correctness in oral and written language.
- Master Information and Communication Technologies.
- Respect of the essential rights of equality between men and women, the promotion of Human Rights and of the values of a peace culture and democracy.
- Master a foreign language.

Degree-specific competences

- Apply instrumental techniques in the analysis and resolution of business problems and the making of decisions.

Degree-transversal competences

- Perform in accordance with rigor, personal commitment and quality orientation.
- Ability to organise and plan.
- Ability to analyse and synthesize.
- Team work and leadership.

- Be able to work and learn in an autonomous way and at the same time adequately interact with others through cooperation and collaboration.

Subject contents

Subject contents

Subject 1: Preliminary. Functions and graphs

Number sets. Successions of natural numbers.

Polynomials.

Study of a function, general concepts: domain, range, graphs, increasement, decreasement and extremes.

Operations with functions: sum, product, sum of a scalar, a scalar product, quotient, composition and inverse function.

Polynomial functions.

Rational functions. Limit of a function in a point and infinite boundaries.

Other types of functions: absolute value and piecewise defined functions.

Transforming a function graph, interpretation. Arithmetics

Subject 2: Linear programming

Linear inequalities with two variables. Half-planes. Linear inequality systems with two variables. Linear program formulation. Objective function and restrictions. Feasible region of a linear program. Feasible region vertex and border. Interpretation of contour lines. Solving a two-variable linear programming problem with a graph.

Subject 3: Some features of economy

The functions of supply and demand.

Market balance.

The functions of income, costs and profits.

The average cost functions.

Subject 4: Financial mathematics

Basic concepts: financial transaction, financial capital, financial regimes, etc.

The financial regime of simple interest arrears.

The financial regime of compound interest at a constant rate.

Nominal and effective interest. Equivalent effective rates. The AER.

Financial income. Valuation of income.

Loans and amortization tables.

Subject 7: Vectors and matrices

Scalar and vector magnitudes.

Vectors. Definition, examples, operations and properties.

Linear combination of vectors.

Matrices: definition, examples, operations and properties.

Methodology

Les sessions de teoria, tot i ser expositives, estaran enfocades a comprendre la utilització pràctica dels continguts.

En les sessions de grup mitjà els estudiants portaran a cap activitats d'aplicació dels continguts

Evaluation

1.- Es realitzarà un primer examen parcial eliminatori.

2.- En al data de l'examen final es farà un segon parcial i es podrà recuperar la nota del primer.

3.- Al final de cada sessió, els estudiants realitzaran una petita prova d'avaluació continuada. La suma de les notes obtingudes en aquestes proves dividida pel nombre de proves realitzades proporcionaran la nota AC.

La qualificació es calcularà fent: max{40%*primer parcial + 40%*segon parcial + 20%*nota AC, (primer parcial+segon parcial)/2}

Per calcular la qualificació final s'ha de tenir un 3 sobre 10 en cadascú dels parcials. L'aprovat està amb notes iguals superiors a 5.

Bibliography

Notes and lists of problems

The Virtual Campus has some notes and a list of problems for each subject.

Basic bibliography:

- NAVARRO, E. i NAVE J.M. Fundamentos de Matemática Financiera. Antoni Boschñ.Editor
- ARYA y LANDER. Matemáticas aplicadas a la administración y la economia. Prentice Hall.
- HAEUSSLER E.F.; PAUL JR. i R.S. Matemáticas para administración y economía. Pearson, Prentice Hall.
- HOFFMAN, L.D. and BRADLEY Gerard L. Cálculo aplicado a administración, economía, contaduría y ciencias sociales. Mc.Graw-Hill.

Complementary bibliography:

- GRAFFE. Matemáticas para economistas. McGraw-Hill.
- CHIANG. Métodos Fundamentales de Economía Matemática. McGraw-Hill.
- LARSON i HOSTELER. Cálculo y Geometría Analítica. McGraw-Hill.
- CAMARA Ángeles i alt. Problemas resueltos de matemáticas para economía y empresa. Ed. Thomson.