School of Technology and Management
Course Unit Syllabus

Level of qualification:
First cycle (EQF level 6) - Bachelor
Study cycle:
Business Management

Course Unit: **9152311;9994311 – Mathematics II**

Year 1	**Semester 2**	**ISCED Code: 541**	**ECTS: 6**

Tipe of Course Unit: Compulsory **Delivery Mode:** Face-to-face **Language of Instruction:** Portuguese

COURSE COORDINATOR: Teresa Maria Monteiro

HOURS OF WORK

TOTAL HOURS	**Contact Hours**								**Hours in autonomous work**
	Theory	Theory and practice	Practical and laboratory work	Field work	Seminar	Internship	Tutorial guidance	Other	
150		**60**							**90**

Prerequisites (if applicable): Not applicable

LEARNING OUTCOMES (knowledge, skills and competence)

Promote understanding and correct use of mathematical language; Master and apply the concepts and techniques studied in the fields of integral calculus on IR, differential equations ordinary one. first order, matrices, determinants and systems of linear equations (see syllabus); Get support tools directly to other courses; Develop habits of accuracy of exposure and argument, and reflection.

CONTENTS

Primitives: definition, properties, primitive immediate integration by parts, integration by substitution and primitives of rational functions. Integral Calculus in IR: definitions, properties and applications. Introduction to Ordinary Differential Equations of 1st order (linear and separable variables). Matrices: definitions, algebra of matrices, invertible matrices, calculation of the inverse matrix, characteristic of a matrix; Determinants: definition and properties; computation of determinants, Laplace theorem, applications of determinants. Systems of Linear Equations: definitions and resolution techniques, discussion of a system of equations linear.

DEMONSTRATION OF THE CONTENTS COHERENCE WITH THE COURSE UNIT'S LEARNING OUTCOMES

Students must master and apply the concepts and techniques studied in the fields of integral calculus on IR, ordinary differential equations 1. first order, matrices, determinants and systems of linear equations (see program content), not only in the HU and this other along their educational background, and should be able to clearly explain your thinking.

TEACHING METHODOLOGIES

Before each new topic is introduced, students are provided with a historical and topic overview, and objectives are set. Classes have a lecturing component and also a practical one, dedicated to exercise/problem solving where the degree of abstraction is directly related to the business management context. In addition to the course materials put together by the course teacher, students are encouraged to look for and use complementary materials (such as books, calculator and internet search), with the aim to develop the students' independence and proactivity in the learning process. Assessment is made up of several tasks carried out throughout the semester, but students can also choose to take a final exam.

DEMONSTRATION OF THE COHERENCE BETWEEN THE TEACHING METHODOLOGIES AND THE LEARNING OUTCOMES

The classes have an exhibition component and a resolution of exercises / problems where the degree of abstraction appears linked to concrete applications in the field of business management. Students are encouraged to apply their knowledge to solve problems, explain their assess the arguments and reasoning of colleagues.

EVALUATION METHODS

Assessment is made up of several tasks carried out throughout the semester, but students can also choose to take a final exam.

MAIN BIBLIOGRAPHY

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Campos Ferreira, J. (2008). Introdução à Análise Matemática. Lisboa: Fundação Calouste Gulbenkian.

Dowling, E. T. (1994). Cálculo para Economia, Gestão e Ciências Sociais. Lisboa: McGraw-Hill.

Giraldes, E., Fernandes, V. e Santos, M. (1995). Curso de Á lgebra Linear e Geometria Analítica. Lisoba: McGraw-Hill.

Sarrico, C. (2003). Análise Matemática – leituras e exercícios. Lisboa: Gradiva.

Sydsæ ter, K. e Hammond, P. J. (2008). Essential Mathematics for Economic Analysis. Financial Times Press/Prentice Hall.

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