Course guide
340366 - FOMA-I1O43 - Fundamentals of Mathematics

Last modified: 04/09/2025

Unit in charge: Vilanova i la Geltrú School of Engineering
Teaching unit: 749 - MAT - Department of Mathematics.

Degree: BACHELOR'S DEGREE IN INFORMATICS ENGINEERING (Syllabus 2018). (Compulsory subject).

Academic year: 2025 **ECTS Credits:** 7.5 **Languages:** Catalan

LECTURER

Coordinating lecturer: Joan Gómez i Urgellés

Others: Joan Gómez i Urgellés

PRIOR SKILLS

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REQUIREMENTS

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DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
I_CEFC6. CEFC6. Basic knowledge and application of algorithmic processes, informatic techniques to design solutions of problems, analyzing if proposed algorisms are apt and complex.

Transversal:
2. SELF-DIRECTED LEARNING - Level 1. Completing set tasks within established deadlines. Working with recommended information sources according to the guidelines set by lecturers.
05 TEQ N1. TEAMWORK - Level 1. Working in a team and making positive contributions once the aims and group and individual responsibilities have been defined. Reaching joint decisions on the strategy to be followed.
04 COE N1. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 1. Planning oral communication, answering questions properly and writing straightforward texts that are spelt correctly and are grammatically coherent.
05 TEQ. TEAMWORK. Being able to work as a team player, either as a member or as a leader. Contributing to projects pragmatically and responsibly, by reaching commitments in accordance to the resources that are available.
07 AAT N2. SELF-DIRECTED LEARNING - Level 2: Completing set tasks based on the guidelines set by lecturers. Devoting the time needed to complete each task, including personal contributions and expanding on the recommended information sources.

TEACHING METHODOLOGY

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LEARNING OBJECTIVES OF THE SUBJECT

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STUDY LOAD

Type	Hours	Percentage
Self study	112,5	60.00
Hours large group	75,0	40.00

Total learning time: 187.5 h

CONTENTS

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Description:
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Specific objectives:
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Related activities:
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Full-or-part-time: 14h 20m
Theory classes: 10h
Self study : 4h 20m

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Description:
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Specific objectives:
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Related activities:
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Full-or-part-time: 19h 10m
Theory classes: 10h
Self study : 9h 10m

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Description:
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Specific objectives:
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Related activities:
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Full-or-part-time: 26h 20m
Theory classes: 5h
Self study : 21h 20m

4. Expansion of matrix algebra

Description:
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Specific objectives:
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Related activities:
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Full-or-part-time: 42h 20m
Theory classes: 20h
Self study : 22h 20m

5. Diferential calculus

Description:
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Specific objectives:
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Related activities:
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Full-or-part-time: 45h 20m
Theory classes: 15h
Self study : 30h 20m

7. Integral Calculus

Description:
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Specific objectives:
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Related activities:
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Full-or-part-time: 40h 20m
Theory classes: 15h
Self study : 25h 20m

GRADING SYSTEM

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EXAMINATION RULES.

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BIBLIOGRAPHY

Complementary:
- https://www.enciclopedia.cat/divulcat/Joan-Vicenc-Gomez-i-Urgelles.
- Gómez i Urgellés, Joan. Matemáticos, espías y piratas informáticos : codificación y criptografía. Barcelona: RBA, 2010. ISBN 9788447366248.

RESOURCES

Computer material:
- Geogebra. Resource

Hyperlink:
- https://ca.wikipedia.org/wiki/Demostracions_visuals. .

Other resources:
- http://www.geogebra.org />
-Octave