

Course Outline

Target audience: 1st year license

Course Title: Mathematics-2

Fundamental teaching unit: UEF 1.2

Duration: 15 weeks; 3 hrs each week

Schedule: Mon and Tue: 08:00- 9:30 am

Amphitheaters: 4 and 6

Evaluation mode: CC: 40%; Exam: 60%

Coefficient: 03+ Credits: 06

I. Determinants and matrices

1. Matrices (Definition, operations)
2. Matrix associated to linear transformation
3. Linear transformation associated to a matrix
4. Base change, transition matrix

II. Systems of Linear Equations

1. Overview
2. Study the set of Solutions
3. Methods of resolution of a linear system
 - Cramer's method
 - Inverse method
 - Gauss's method

III. Integrals

1. Indefinite integral, property
2. Integration of rational functions
3. Integration of exponential and trigonometric functions
4. The integral of polynomials
5. Defined integration

IV. Differential Equations

1. Ordinary differential equations ODE
2. Differential equations of order 1
3. Differential equations of order 2
4. Second order linear ODEs with constant coefficient

V. Multivariate Functions

1. Limit, continuity and partial derivatives of a function
2. Differentiability
3. Double, triple integrals