Course Syllabus

1. Course number and name: 020AL2CI3 Algebra 2.

2. Credits and contact hours : 6 ECTS credits, 3x1:15 course hours

3. Instructor's or course coordinator's name : Salim Salem,

4. Text book : X. OUDOT, Maths MP/MP* Vuibert 2014
    a. Other supplemental materials: Notes on certain topics from internet sites.

5. Specific course information

    i. Catalog description: Algebraic structures: Groups, rings and fields. Endomorphism and matrix reduction.

    ii. Prerequisites: Algebra 1 (020AL1CI2)

    iii. Required : Yes

6. Specific goals for the course

    a. Specific outcomes of instruction
        - Identify, manipulate algebraic structures
        - Characterize substructures and special subsets (ideals, sets of generators, bases)
        - Study and manipulate linear application.
        - Classify matrices
        - Compute eigenvalues and eigenvectors
        - Compute equivalent diagonal or triangular matrix to a given one.

    b. KPIs addressed by the course.

RAP (KPI)	a1
Covered	x
Assessed	x
Give Feedback	x

7. Topics and approximate lecture hours :

    -   Generalities on algebraic structures (2 Lectures)

- Group theory, subgroups order of a group finite groups, subgroups, morphisms cyclic groups (10 Lectures)
- Rings, ideals, morphisms and applications to number theory and polynomials (9 Lectures)
- Morphisms of fields and vector spaces (2 Lectures)
- Invariant subspaces and equivalent matrices (4 Lectures)
- Eigenvalues and eigenvectors spectrum of an endomorphism (5 Lectures)
- Diagonalization and trigonalization applications(10 Lectures)