

# **Asignatura : Informática**

## **Grado en Ingeniería Aeroespacial - ETSIAE**

### **Subjects for the P3 assignment:**

1. Emergent behavior: flocking, ants, society, fire evacuation, viral infection.
2. Games: SUDOKU, ..,
3. Music generation with the computer.
4. Generation of musical notes. Harmonic composition of different instruments. Visualization and sound effect. Equal temperament versus Pythagorean tuning.
5. Music perception. Missing fundamental. Quality of chords. Consonance and Dissonance. Reverberation versus echoing.
6. Numerical integration of Kepler orbits by means of the Euler method.
7. Fractals: Mandelbrot set, Koch snowflake, Sierpiński triangle,...

The program of the P3 assignment can be implemented in Python, Julia, FORTRAN, C++ or JavaScript.

### **General contents of P3 assignment:**

1. Objective.
2. State of art.
3. Explanation through programming codes.
4. Conclusions.
5. References.