Syllabus

Course Title	COMPUTER GRAPHICS

I. Course Objectives

The main objective of this module is to introduce students to the concepts of computer graphics. It begins with an overview of interactive graphics, two-dimensional systems, and mapping, then covers the key drawing algorithms, two-dimensional transformations, clipping, filling, and provides an introduction to 3D graphics.

II. Prerequisites

- C Programming
- Calculus I (Analysis I)
- Linear Algebra
- Assembly Language

III. Materials and Books

The textbooks will be provided in PDF format and made available to students by the first day of class. See References.

IV. Course Content

- Practical introduction with Love2d (Lua)
  Learn Lua: YouTube Link
  Implementation of Pong and Mario (See cs50.harvard.edu Game Track)
- Fundamental algorithms of Computer Graphics
- Geometric and mathematical models
- Introduction to computer graphics
- Point tracing techniques – Two-dimensional transformation
- Clipping and drawing – Polygon filling
- Introduction to 3D graphics Basics of OpenGL and/or (DirectX or SDL): See MIT Course 6.837

References

https://www.youtube.com/watch?v=iMacxZQMPXs
https://www.lua.org/manual/5.3/manual.html https://love2d.org/wiki/love
https://love2d.org/wiki/love_(Fran%C3%A7ais)
https://www.youtube.com/playlist?list=PLkHIj5SCfn3_PCotoqTetMpJc_jkpkgLt

Course Regulations

Students must always be present, except in the case of a problem that has been reviewed by the administration and for which the motivation has been approved by the UEspoir administration. Assignments must be submitted on the day set by the professor. All uncommitted and incomplete assignments are eligible for a grade of 0. Late assignments will not be accepted.

The final grade is a combination of:

1. Homework 30%
2. Tests and Quizzes 70%