CES8AA ANIMATION AND VIDEOGAME TECHNIQUES

CES8AA Animation and videogame techniques	ECTS Credits : 4 Duration : 36 hours	Semester : S7

Responsable(s) :

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Keywords :

3D models, physics engine, scripting, artificial intelligence, animation

Prerquisites : Good programming skills (C, C++, Java), good command of the operating system

Goal : Video game technology, scientific issues of the sector

Program and contents :

Model of video games : main loop, event management, programming tools. Case study : Pong

3D Models, geometry aspects, transformations, representing the world, space paving. Shading, shader programming, textures, colours, effects (Phong, Bump mapping, Cartoon, etc). Case study : Tile design on Sketchup, building the game universe

Animation, key frames, mesh skinning, controllers, physics engine, body dynamics, collisions. Case study : Bullet Library

Artificial intelligence, scripting, path-finding, simulating entities. Case study : Moving players on the board

Implementing a video game project

Abilities :

Levels	Description and operational vocabulary
Know	Video game techniques : 3D Models, physics engine, scripting, artificial intelligence, animation, tilling
Understand	Data representing : entities, forms, textures, bones, animated sequences. Animated 3D geometry : quad, rotations, point of vu, 3D scene, tiling. General video game design, render engine, physics engine, artificial intelligence
Apply	To a real case notions seen in class Examples of past project : Tower Defense, Lemmings, Bomberman, ...
Analyse	Game-play, geometric entities, data sharing, player-computer interactions, need of a physics engine
Summarise	Implementing a 3D video game, graphics design, program structuring, event, game-state machine
Assess	

Evaluation :

☐ Written test	☐ Continuous assessment	☐ Oral presentation	☑ Project	☐ Written report