

## **Module Name: (B.6) Mobile and Game Applications Development**

### **Aim**

The aim of this course is to introduce students to advanced programming concepts in the areas of mobile and game development.

### **Learning Objectives**

The course is designed to introduce postgraduate students to theory, methods and techniques of 2D/3D game development with C# programming language by exploiting popular game engines. Game development is very popular ICT research and development area, focusing in applications of diverse fields including entertainment, cultural heritage, education, artificial intelligence, sociology, military and health systems. The main goal of this course is to enable students to understand the importance and the capabilities of advanced object-oriented programming languages, such C#, and specific software packages referred to as game engines (Unity) for the implementation of cross-platform (2D and 3D) games. The course also covers a wide range of Android development topics. More specifically, it provides essential lessons on various Android SDK libraries, it includes step-by-step lab exercises to build Android applications and contains guides to build location-aware applications using GPS.

### **Learning Outcomes**

Upon successful completion of the course the student will be able to:

- Describe concepts related to theory, methods and techniques used in game development.
- Develop 2D/3D interactive games for a variety of OS including web (cross-platform) development.
- Deal with graphical and realism issues for game purposes including lightening, effects, rendering, sound, particle systems etc.
- Implement complex algorithms for the creation of dynamic content.
- Interconnect game systems with databases and web services (MySQL, PHP etc)
- Investigating relevant material in the international literature, writing a scientific report, planning a project, working collectively and to solve complex game development problems. Content
- Create Applications that run on the Android platform
- Access and work with the Android File System

### **Bibliography**

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- [5] The Computer Games Journal (Springer).
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