I. CATALOG DESCRIPTION AND CREDIT HOURS OF COURSE:

CS373. Introduction to Game Programming. Explore the fundamentals of 2D game programming, using a high-level programming language and appropriate tool(s). Program and create a couple of 2D graphic games. Prerequisite(s): CS300 with a minimum grade of 'C'. (3)

II. PREREQUISITE: CS300 with a minimum grade of 'C'.

III. COURSE OBJECTIVES:

The objectives of the course are that the student will be able to use an object-oriented programming language to

A. Program 2D graphics and animation.
B. Perform Management over 2D sprites and objects.
C. Apply keyboard/mouse input, music and sound in a 2D computer game.
D. Calculate 2D object intersection.
E. Work in a team to implement 2D game programming project(s).

IV. EXPECTATIONS OF STUDENTS:

Students are expected to:

A. Attend all lectures and participate in lecture discussions and other classroom activities.
B. Take all tests and exams, complete all reading assignments, and complete individual and team project assignments within a given time frame.
C. Develop a final 2D gaming project as a team, incorporating the expected functionalities and providing all the documentation.
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V. COURSE CONTENT OR OUTLINE:

A. Game Framework, Game Loop  

B. Theories and Programming on 2D Graphic Geometry, Transformations, Rendering and Animation  

C. HCI Concepts in OOP: Keyboard and Mouse Input  

D. Sprites/Objects OOP Management Class  

E. 2D Object Intersection  

F. OOP Management Class for Sound Effects and Music  

G. Game Background, Scrolling Background and Splash Screen Management and Programming  

H. Game High Score Management  

I. Exams  

VI. TEXTBOOK(S) AND/OR OTHER REQUIRED MATERIALS OR EQUIPMENT

A. Student textbook:  

*Advanced 2D Game Development* by Jonathan S. Harbour, Course Technology PTR, 2008 (optional)  

B. Reference textbooks and periodicals:  

*Beginning XNA 2.0 Game Programming: From Novice to Professional* by Alexandre Santos Lobao, Bruno Pereira Evangelista, and José Antonio Leal de Farias, Apress, 2008  

C. Tools (Software):  

Microsoft Visual C++; or Microsoft XNA Game Studio and Microsoft Visual C#; or other available IDEs
VII. BASIS FOR STUDENT EVALUATION:

A. Tests and Exams.  35%
B. Individual Assignment.  15%
C. Team Assignment and Project Work.  50%