

# CAP 4034 Computer Animation

**Credits:** 3

## **Textbook, Title, Author and Year**

**Supplemental Materials:** the GIMP (GNU Image Manipulation Program) Adobe Photoshop, After Effects, Flash, Microsoft Visual Studio with Silverlight, Autodesk 3Ds max or Blender open source 3D content creation suite

## **Specific Course Information**

- a. **Catalog Description:** Course includes basic animation concepts, principles of animation, storyboarding, character development, animation rendering, and design. Also, 2D animations for use in practical applications are developed. Basic 3D modeling, rendering, animation techniques, and common algorithms used to create computer animation are introduced.
- b. **Prerequisites:** COP 3530 Recommended
- c. **Required, Elective, or Selected Elective:** Elective

## **Specific Goals for the Course**

**Specific Outcomes of Instruction:** By the end of the course students will be able to: (i) Understand basic principles of computer generated animation; (ii) Use 2D image and animation software and scripting; (iii) Create and incorporate simple 2D animations in common applications; (iv) Use 3D animation software and scripting; (v) Understand common algorithms used to create computer animations.

## **Brief List of Topics to be Covered**

- Overview of 2D and 3D Animation Software
- Manipulating Images Using 2D Software and Scripting
- 2D Frame Animations Using 2D Software
- 2D Vector Image and Timeline Animation
- Overview of 3D Software and Scripting
- 3D Modeling, Surfaces, Textures, Lighting and Rendering
- Manipulating 3D Scenes Using 3D Software
- 3D Timeline Animation Using 3D Software
- Introduction to Common Algorithms and Principles Used to Create Computer Animations
- Student Portfolio Presentations