

# MODELING, ANIMATION AND GAME CREATION (MAGC)

## **MAGC 11003 SOLID MODELING 3 Credit Hours**

Instruction given in the best usage approaches for parametric design philosophy through a hands-on, practice-intensive curriculum. Students acquire the knowledge needed to complete the process of designing models from conceptual sketching, through to solid modeling, assembly design and drawing production.

**Prerequisite:** Modeling, Animation and Game Creation major or Game Design minor or Modeling and Animation minor.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## **MAGC 12000 2D GRAPHICS 3 Credit Hours**

Introductory course for creation of 2D graphics using vector and raster imaging for use in mapping and character development in animation and gaming.

**Prerequisite:** None.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## **MAGC 12001 MODELING AND TEXTURING I 3 Credit Hours**

Introduction to the basic concepts of 3D modeling and animation. Topics will include terminology, techniques of creating textures and imaging for mapping, 3D modeling, lighting, shading and rendering.

**Prerequisite:** MAGC 12000 and Modeling, Animation and Game Creation major or Game Design minor or Modeling and Animation minor.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## **MAGC 21000 FUNDAMENTALS OF MIXED REALITY 3 Credit Hours**

This course will explore the fundamentals of virtual and augmented reality available today (education, medical, games, architecture, etc.).

**Prerequisite:** Modeling, Animation and Game Creation major or Game Design minor or Modeling and Animation minor; and Sophomore standing.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## **MAGC 21092 ANIMATION AND GAME DESIGN PRACTICUM (ELR) 1-3 Credit Hours**

(Repeatable for a maximum of 6 credit hours) Supervised work experience. One credit hour for 50 work hours.

**Prerequisite:** None.

**Schedule Type:** Practicum or Internship

**Contact Hours:** 3.333-10 other

**Grade Mode:** Satisfactory/Unsatisfactory

**Attributes:** Experiential Learning Requirement

## **MAGC 22000 2D COMMUNICATION 3 Credit Hours**

Comprehensive training with 2D and 3D elements of computer-aided design (CAD) from the foundation to advanced techniques applicable to design in the graphics, mechanical, industrial and electronics fields.

**Prerequisite:** Modeling, Animation and Game Creation major or Game Creation minor or Modeling and Animation minor.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## **MAGC 22001 MODELING FOR ARCHITECTURE 3 Credit Hours**

Introduction to building information modeling (BIM) fundamentals using an industry-standard architectural software application, including creation of full 3D architectural project into working drawings.

**Prerequisite:** Modeling, Animation and Game Creation major or Game Design minor or Modeling and Animation minor.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## **MAGC 22002 CAD: CIVIL APPLICATIONS 2 Credit Hours**

A course on the use of computer-aided drafting and design for civil engineering applications.

**Prerequisite:** None.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

## **MAGC 22004 MODELING AND TEXTURING II 3 Credit Hours**

3D modeling and computerized techniques. Introduction to the basic concepts, terminology and techniques of 3D modeling, lighting, shading, imaging and animation.

**Prerequisite:** MAGC 12001.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## **MAGC 22005 MULTIMEDIA AND GAME DESIGN 3 Credit Hours**

2D and 3D game development which includes the creation of flowcharts, roughs and interactive navigation systems. Integration of images, animation, video, sound and custom code for the app or game for mobile device.

**Prerequisite:** MAGC 12001.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

## **MAGC 22007 3-D MODELING PROJECT 1 Credit Hour**

A guided project course in 3-D modeling for computer animation and game design.

**Prerequisite:** MAGC 22005.

**Schedule Type:** Lecture

**Contact Hours:** 1 lecture

**Grade Mode:** Standard Letter-IP

## **MAGC 22008 PROJECT IN TEXTURE AND MATERIAL CREATION 1 Credit Hour**

A guided project course in texture and material creation for computer animation and game design.

**Prerequisite:** MAGC 22007.

**Schedule Type:** Lecture

**Contact Hours:** 1 lecture

**Grade Mode:** Standard Letter-IP

## **MAGC 22009 APPLIED ENGINEERING SOFTWARE 3 Credit Hours**

A course on the use of the computer as a problem solving tool for applications in engineering and manufacturing. Emphasis is on the use of productivity software training on the use of the software applicable to engineering problems using hands-on workshop formats.

**Prerequisite:** None.

**Schedule Type:** Combined Lecture and Lab

**Contact Hours:** 2 lecture, 2 lab

**Grade Mode:** Standard Letter

**MAGC 22010 DIGITAL SCULPTING 3 Credit Hours**

This course will explore interactive 3D sculpting to create highly-detailed and realistic models for use in games, film, animation and illustration.

**Prerequisite:** MAGC 12001 and Modeling, Animation and Game Creation major or Game Design minor or Modeling and Animation minor.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**MAGC 22095 SPECIAL TOPICS IN COMPUTER ANIMATION AND GAME DESIGN TECHNOLOGY 1-3 Credit Hours**

(Repeatable for credit) Special topics in Computer Animation and game design. Repeated registration permitted.

**Prerequisite:** None.

**Schedule Type:** Lecture

**Contact Hours:** 1-3 lecture

**Grade Mode:** Standard Letter

**MAGC 23020 GAMING AND CULTURE 3 Credit Hours**

Familiarize students with the basic issues of culture and social aspects in different contexts including the relationship between culture and gaming. What is play, what is experiencing, and what are the cultural determinants that are at work in the process.

**Prerequisite:** Sophomore standing.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**MAGC 33010 COMPETITIVE GAMING 3 Credit Hours**

Introduction to eSports cultures and exploration of streaming techniques and layouts. The business culture of eSports, developing teams, communities, competitive gaming, event marketing and organizing an eSports event.

**Prerequisite:** Junior standing.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**MAGC 33030 GAMES FOR EDUCATION 3 Credit Hours**

This course explores using games for education and industry training

**Prerequisite:** MAGC 12000; and Modeling, Animation and Game Creation major or Game Design minor or Modeling and Animation minor; and Junior standing.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**MAGC 33095 SPECIAL TOPICS IN MODELING, ANIMATION AND GAME CREATION 1-3 Credit Hours**

To be determined based on special course topic presented.

**Prerequisite:** Modeling, Animation and Game Creation major.

**Schedule Type:** Lecture

**Contact Hours:** 1-3 lecture

**Grade Mode:** Standard Letter

**MAGC 34000 CHARACTER ANIMATION 3 Credit Hours**

Continuation of the study and technology applications of computer animation with emphasis on camera usage and the production of a comprehensive animation project involving the animation thought process (ATP).

**Prerequisite:** MAGC 22004.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**MAGC 34001 ANIMATION PROJECT 3 Credit Hours**

Continued study of practical technology applications of computer animation with emphasis on scripting code writing, systems line variables and fluent realism factors within the ATP.

**Prerequisite:** MAGC 34000.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**MAGC 34003 ANIMATION THEORY 3 Credit Hours**

A comprehensive course covering the fundamentals of storytelling with animation and motion graphics. Coverage of concept development, pre-production, storyboarding, color and design.

**Prerequisite:** MAGC 22004.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**MAGC 34004 TECHNOLOGY OF LIGHT, COLOR, DESIGN AND LAYOUT 2 Credit Hours**

A course dealing with the study of the technical principles and applications of light, color, design and layout to the production of computer animation for engineering materials and products.

**Prerequisite:** MAGC 22004.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture

**Grade Mode:** Standard Letter

**MAGC 34005 ENVIRONMENTAL GAME DESIGN 3 Credit Hours**

In this course, we will learn the essentials of game environment creation. We will look at how textures, terrains, foliage, particle effects, lighting and blueprinting work and are created in a computer-aided software. We will also learn to import 3D models in to our game environment.

**Prerequisite:** MAGC 22004 and Junior standing.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**MAGC 43000 INTERACTIVE GAME DESIGN 3 Credit Hours**

This course is the continuation of MAGC 34005 and a group project based course. We will be covering how to add characters and blueprint scripting aspects in Unreal Engine. Our purpose is to create a playable 3D game in Unreal Engine

**Prerequisite:** MAGC 34005.

**Schedule Type:** Lecture

**Contact Hours:** 2 lecture, 2 lab

**Grade Mode:** Standard Letter

**MAGC 43001 ANIMATION PRODUCTION AND VFX 3 Credit Hours**

A course dealing with the technical and business aspects of pre-and post production planning for multimedia video or film projects. Covers a systematic approach to content organization and development, scripting, visualization. We will explore effects such as particles and volumes (fire, smoke, liquids) inside 3D scenes as well as compositing effects.

**Prerequisite:** MAGC 22004.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**MAGC 43002 GRAPHICS DESIGN TECHNOLOGY 3 Credit Hours**

A course of study in the technology of creating knowledge and effects using computer-graphics concepts to create photo-realistic composite images and to restore and enhance a wide array of images.

**Prerequisite:** MAGC 22004.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**MAGC 43025 REAL-TIME RENDERING FOR ANIMATION 3 Credit Hours**

This course focuses on using a game engine, also known as a real-time renderer, to present stories and animation in real-time. This includes meeting performance targets, interactivity, and animation.

**Prerequisite:** MAGC 34001; and MAGC 34005.

**Schedule Type:** Lecture

**Contact Hours:** 3 lecture

**Grade Mode:** Standard Letter

**MAGC 43092 INTERNSHIP IN MODELING, ANIMATION AND GAME CREATION (ELR) 1-3 Credit Hours**

A credit-bearing work experience with educational outcomes, utilizing and enhancing a student's academic learning in practical occupational situations. The student is expected to complete pre-determined assignments, which may include a weekly journal, final paper, or an experience report.

**Prerequisite:** Modeling, Animation and Game Creation major, Junior standing and special approval.

**Schedule Type:** Field Experience

**Contact Hours:** 1-3 other

**Grade Mode:** Standard Letter

**Attributes:** Experiential Learning Requirement

**MAGC 43096 INDIVIDUAL INVESTIGATION IN MAGC 1-3 Credit Hours**

(Repeatable for Credit) Research or individual investigation in areas not covered in the existing curriculum for baccalaureate level students at or above the junior level.

**Prerequisite:** special approval.

**Schedule Type:** Individual Investigation

**Contact Hours:** 1-3 other

**Grade Mode:** Standard Letter

**MAGC 49999 SENIOR CAPSTONE PROJECT 3 Credit Hours**

This is a senior project class allowing students to work in an area of interest.

**Prerequisite:** MAGC 43000; and MAGC 43025; and senior standing.

**Schedule Type:** Combined Lecture and Lab

**Contact Hours:** 1 lecture, 2 lab

**Grade Mode:** Standard Letter