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 with rendering techniques for presentation.
Prerequisite: MAGC 12000; Computer Design, Animation and Game Design concentration in the Engineering Technology major or Game Design minor or Modeling and Animation minor.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

MAGC 12000  TWO DIMENSION GRAPHICS  3 Credit Hours
Introductory course for creation of two-dimension 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 three-dimension modeling and animation. Topics include terminology, techniques of creating textures and imaging for mapping, three-dimension modeling, lighting, shading and rendering.
Prerequisite: MAGC 12000; and Computer Design, Animation and Game Design concentration in the Engineering Technology 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
Course explores the fundamentals of virtual and augmented reality available today (education, medical, games, architecture, etc.).
Prerequisite: Computer Design, Animation and Game Design concentration in the Engineering Technology 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 22000  TWO-DIMENSION 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: Computer Design, Animation and Game Design concentration in the Engineering Technology 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: Computer Design, Animation and Game Design concentration in the Engineering Technology major or Game Design minor or Modeling and Animation minor.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

MAGC 22002  COMPUTER-AIDED DESIGN: 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  THREE-DIMENSION 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 22005  THREE-DIMENSION MODELING PROJECT  1 Credit Hour
(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 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

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; Computer Design, Animation and Game Design concentration in the Engineering Technology 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 22020 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 Computer Design, Animation and Game Design concentration in the Engineering Technology 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: Computer Design, Animation and Game Design concentration in the Engineering Technology 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 34002 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 into 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 VISUAL EFFECTS  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: Computer Design, Animation and Game Design concentration in the Engineering Technology major and junior standing; and special approval.
Schedule Type: Field Experience
Contact Hours: 1-3 other
Grade Mode: Standard Letter
Attributes: Experiential Learning Requirement

MAGC 49999  SENIOR CAPSTONE PROJECT (ELR)  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
Attributes: Experiential Learning Requirement

MAGC 49996  INDIVIDUAL INVESTIGATION IN MODELING, ANIMATION AND GAME CREATION (Repeatable for Credit)  1-3 Credit Hours
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

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