Hello IGM Students!

Below you will find a list of IGM Advanced Electives that are planned to be offered in the Spring of 2022 (2215). Please reach out to the instructor or your advisor if you have any questions. SIS is the best place to review the course description and prerequisites for each course, however some course descriptions have been included below. If you are interested in a 600 level course or above, you may need approval from the instructor to enroll. There are additional **graduate** (600 and 700 level) courses available not listed below for BS/MS students and Graduate students - please contact David Simkins (dwsimkins@mail.rit.edu) with any questions regarding graduate advanced electives.

IGME 589-01

As games and interactive media technologies become more pervasive and delivery platforms proliferate there is a growing need to ensure these systems are fit for purpose as far as the end-user communities are concerned. User Research aims to provide data-informed feedback during the game and interactive media development to help the intended experience, created during the design process, be realized by users. This course aims, through an applied perspective, to introduce concepts, principles, and methods for assessment of the design of games and interactive media technologies.

IGME 589-02

Player Types, Motivation, & Engagement in Games

One of the reasons it's impossible to build a game for "everyone," is that there are many different audiences for games, often with very different motivations for play. This research studio will look at different models for understanding audiences/players, what motivates them, and how to design games that keep them engaged.

Students will become familiar with the literature on player types and motivations, and will write a literature review discussing that work. They will then apply that knowledge to a game that they're currently working on (or one that they've recently created), and will document the changes they've made and the reasons for those changes.

IGME 590-02: Advanced Game Graphics Programming

Games and other graphical applications continue to drive forward the development of graphics hardware and the APIs that provide access to that hardware. This course provides students with the opportunity to explore and implement advanced graphics programming techniques for real-time applications such as games. Students will explore the use of different rendering paths to handle hundreds of real-time lights, implement techniques to increase photo-realism, and use advanced shaders to create special effects. The course allows students to use a low-level graphics API to efficiently make use of features found on modern GPUs. Pre-req: IGME 540 or permission of instructor.

IGME 590-1: Modding

This class will explore the structures and content of a AAA game through game modification. Using existing game content and creation kits, students will develop content that could include new in-game objects, NPCs, environments, and quest lines. This modded content will be designed and tested by students to ensure seamless integration with the existing game. This class will be co-taught by two instructors of varied backgrounds. (Recommended for students with minimum third-year standing in computing or digital content creation majors.)

IGME 690-01

Welcome to IGME 690: Seminar on Intelligent Systems in the Arts. This seminar will introduce students to critical issues in Artificial Intelligence (AI), Machine Learning and related fields as they pertain to arts, media and culture. The course will include lectures, readings and discussions that explore the work of relevant artists, technologists and theoreticians in conjunction with project-based work where students will have the opportunity to develop their own artistic or design project using one or several techniques studied in class, or to produce original theoretical or philosophical writing. Students will be expected to form their own creative research agendas. Lectures, readings and discussions on relevant theoretical and practical issues will help students situate their work within the larger context on art, science and technology.

IGME 690-2 - Tools/Extending Game/Media Sys

Modern game and media development industries require a mix of skills. One way that people often perceive roles in the industry are the developers that create the technologies (engines and authoring platforms) and the creatives who utilize the technologies to provide the experiences. However, modern game and media studios have increasing needs in the middle ground - specifically the tools, extensions, plugins,

and other integration techniques that bridge development and design. This course examines the technological and usability aspects related to extension technologies for large-scale commercial and open source game and media systems. The course starts with the exploration of methodologies to extend functionality, including scripting languages, visual languages, application programming interfaces, plugins, interoperability layers, and other techniques. The course will further examine approaches by various classes of application development software, including game engines, 3D modelling software, image software, video applications, and audio application. We will examine techniques including filters, transformations, content generators, analysis, and other functions. The course will culminate with students developing extensions to enhance or augment the functionality of a commercial or open source system.

IGME 796-01

How do you make the best choice in a situation you have no experience in, and are unable to draw on existing information or data? Despite its name, wargames need not be themed on war or conflict, and students from most disciplines will find use from its practices and techniques.

This course is intended to be the first in a sequence of courses on the design and development of an original wargame product to be presented to a real-world sponsor. The course will focus on learning the types of existing wargame models, as well as mechanics used within those games to develop a knowledge base for designing an original wargame. Students will be expected to play select commercial and non-commercial tabletop and computer games within class to gain experience in key aspects of modern game design. Prior experience in game design or wargaming is NOT necessary – and ALL majors are encouraged to register.

IGME 797-01

In this course students will trailblaze a path through the various tools and technologies offered by Unreal Engine. Through a series of projects and a final portfolio-ready piece, they will learn how to work with Unreal Blueprints and Master Materials to create attractive and functional UIs, script character animation and locomotion, and master VFX and environment creation.

IGME 420: Please see SIS for Course Description

IGME 430: Please see SIS for Course Description

IGME 450: Please see SIS for Course Description

IGME 460: Please see SIS for Course Description

IGME 470: Please see SIS for Course Description

IGME 480: Please see SIS for Course Description

IGME 529: Please see SIS for Course Description

IGME 531: Please see SIS for Course Description

IGME 540: Please see SIS for Course Description

IGME 580: Please see SIS for Course Description

IGME 582: Please see SIS for Course Description

IGME 588: Please see SIS for Course Description

IGME 621: Please see SIS for Course Description and review prerequisites for enrollment.

IGME 670: Please see SIS for Course Description and review prerequisites for enrollment.

IGME 680 : Please see SIS for Course Description and review prerequisites for enrollment.

IGME 772- Prereq issues? Email Brian Tomaszewski for access and approval- bmtski@rit.edu - Please note 7 week class

ISTE 230: Please see SIS for Course Description

ISTE 454: Please see SIS for Course Description

ISTE 456: Please see SIS for Course Description