

# GAME DESIGN & DEVELOPMENT (GDD)

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## **GDD 101. Introduction to Game Design. 3 Credits.**

This course introduces students to the practice of game design (board, card, dice, physical games), theories of game design and play, the study of the social effects of games, the role of serious games for teaching and learning and production practices in the games industry.

**Offered:** Every year, All

## **GDD 102. Drawing for Animé, Games and Animation. 3 Credits.**

In this course, students learn through observational drawing basics of proportion, anatomy, weight and balance to develop characters for video games, 2D and 3D animation. Topics include approaches to stylization such as animé and graphic novels. Students use both traditional pencil and paper as well as Adobe Photoshop and other software.

**Offered:** Every year, Spring

## **GDD 110. Introduction to Visual Design for Games. 3 Credits.**

This foundation course prepares students for upper-level course work by introducing critical, analytical and problem-solving strategies for researching and developing graphics for games. Practical hands-on methods include visual research, design journals, thumbnail sketches, concept art, pixel art, storyboarding, 2D and 3D development tools.

**Offered:** Every year, Fall

## **GDD 140. Creativity and Computation. 3 Credits.**

This course teaches software literacy within the visual arts and visual literacy within technology. Students develop basic coding expertise and the confidence necessary to create interactive artwork and games. The course teaches essential 21st-century skills including computational and systems thinking, along with quantitative reasoning coupled to creative problem solving and generative visual aesthetics. No previous experience with programming necessary.

**Offered:** Every year, Fall

## **GDD 175. Special Topics in Game Design. 3 Credits.**

Courses of particular interest to game design students offered on an occasional basis. These courses have no prerequisite. See the Special Topics Bulletin on the Registrar's website for specific course descriptions.

**Offered:** As needed

## **GDD 200. Introduction to Game Development. 3 Credits.**

This course provides an overview of game development through project work. Students examine different game genres, game mechanics and playability, sound, level and interface design. Through project work, students gain an understanding of the game development life cycle and the roles of design teams.

**Prerequisites:** Take GDD 140 or CSC 110 or equivalent college level programming course.

**Offered:** Every year, Spring

## **GDD 201. Game Design I. 3 Credits.**

In this course, students delve deeper into game design principles and how they apply to games. Students critically assess game concepts, objectives, narrative structure and storyline, character, game mechanics, playability and the potential of meaningful or serious "play" for teaching and learning. Students apply the results to a variety of game design projects while learning HTML, CSS and Javascript and building a portfolio website.

**Offered:** Every year, Fall

## **GDD 202. Game Art I. 3 Credits.**

This course introduces students to the software tools required to design and build 3D assets for games and animation, gain knowledge of the 3D design pipeline and begin building a portfolio website to display their best artwork.

**Prerequisites:** Take GDD 102 or GDD 110 or permission of the program director.

**Offered:** Every year, Fall

## **GDD 210. Game Lab I: Team Projects. 3 Credits.**

This is the first of a two-course sequence focusing on game production, coding, prototyping and playtesting. In Game Lab I, students work individually and in teams to define and develop game concepts, research content, develop game mechanics, create game assets and build working prototypes.

**Prerequisites:** Take GDD 200.

**Offered:** Every year, Fall

## **GDD 211. Game Lab II: Team Projects. 3 Credits.**

This course is a continuation of GDD 210. Students continue to work in teams to build working prototypes while learning about the game development process, project management, play testing and usability testing. Prerequisite may be waived with permission of the program director.

**Prerequisites:** Take GDD 210.

**Offered:** Every year, Spring

## **GDD 250. Interactive Storytelling and Narrative. 3 Credits.**

Students critically analyze narrative structure and character development based on readings and game play. Students use creative writing, create interactive multimedia projects and create games that explore new emerging forms such as digital storytelling, interactive theater, and virtual worlds.

**Offered:** As needed

## **GDD 290. Internship. 1-3 Credits.**

Under the supervision of a faculty member and a participating private company, corporation, institution or community organization, students gain real-world experience working in the field of game design or related fields. For majors or minors in game design and development. Requires permission of the program director.

**Offered:** Every year, All

## **GDD 299. Independent Study. 3 Credits.**

Under the supervision of a faculty member, students pursue self-directed research and in-depth study in a subject that is not covered by the existing curriculum.

**Offered:** As needed

## **GDD 300. Special Topics in Game Design. 3 Credits.**

**Offered:** As needed

## **GDD 301. Game Design II. 3 Credits.**

Students continue the critical assessment of games from a number of perspectives including: narrative structures and storylines, game mechanics and gameplay and the potential of meaningful or serious "play" for teaching and learning. Students apply this knowledge by designing games for different platforms which may include browsers, phones, Virtual Reality and evolving technologies.

**Prerequisites:** Take GDD 101 or GDD 201.

**Offered:** Every year, Spring

- GDD 302. Game Art II.** **3 Credits.**  
Students continue working with software tools required for designing and building 3D assets such as characters, costumes, props, levels, environments and worlds. Students continue adding their best artwork to their portfolio website.  
**Prerequisites:** Take GDD 202.  
**Offered:** Every year, Spring
- GDD 303. The Art of Audio Narrative (FVI 380 EN 303).** **3 Credits.**  
This course is about storytelling. Students learn the basics of multi-track audio recording and mixing. They write and produce fiction and nonfiction audio narratives. Each project is shared in a stimulating and mutually supportive workshop environment. Students read and listen widely to gain a sense of the history and theory of radio art. Participants also spend time identifying target audiences and looking at ways to distribute student work to the larger world of public and independent radio. Prerequisite may be waived with permission of program director.  
**Prerequisites:** Take GDD 101.  
**Offered:** Every other year, Fall
- GDD 310. Game Lab III: Team.** **3 Credits.**  
Game Labs III and IV form a two-course sequence that builds upon the experience of game design and prototyping gained in Game Labs I and II. Students work in teams to develop and playtest working prototypes. Prerequisite may be waived with permission of the program director.  
**Prerequisites:** Take GDD 211.  
**Offered:** Every year, Fall
- GDD 311. Game Lab IV: Team Projects.** **3 Credits.**  
This course is a continuation of Game Lab III. Students work in teams to build working prototypes and manage the life cycle of the game development process including troubleshooting, playtesting, usability testing and revisions. Prerequisite may be waived with permission of the program director.  
**Prerequisites:** Take GDD 211 or GDD 310.  
**Offered:** Every year, Spring
- GDD 350. Board Game Design.** **3 Credits.**  
This course provides an introduction to the design of table-top and board games. Board games share many ideas with digital games but utilize different game mechanics. Designing for board games explores the practice of alternate approaches to game design, and the skills learned in this class can be applied to both. Topics include design, history, manufacturing and different genres such as classic board games, deck-building games and card-based strategy games.  
**Offered:** As needed
- GDD 370. Acting and Directing for Game Design.** **3 Credits.**  
This course provides an introduction to the craft of directing and acting for game production. Topics include story analysis and interpretation, director's concept, and the history and theories of directing. Students learn the basic principles of acting, including scene analysis, motivation, intention and character work. They perform exercises, monologues and scenes. Additional topics include methods of actor coaching, rehearsal techniques and working with the creative game design team.  
**Offered:** As needed
- GDD 380. The Business of Games.** **3 Credits.**  
This course helps students gain an understanding of how to develop and run a successful video game business. Students look at existing businesses and new businesses as models and cautionary tales. Topics include developing financials, how to market a business, building a strong company culture, how to crowdfund and how to incorporate.  
**Offered:** As needed
- GDD 390. Internship.** **1-3 Credits.**  
Under the supervision of a faculty member and a participating private company, corporation, institution or community organization, students gain real-world experience working in the field of game design or related fields. For majors or minors in game design and development. Requires permission of the program director.  
**Offered:** Every year, All
- GDD 394. History of Video Games.** **3 Credits.**  
Video games are an interactive medium grounded in step-by-step innovation in console and computer systems combined with parallel development in software capabilities. This course examines the cultural, social and educational aspects of games and considers how they changed over time in response to market pressures, societal concerns about content and technological development. Students play and analyze historical games, learn how to write game reviews and research new phenomenon in game development.  
**Prerequisites:** Take GDD 101 or permission of the program director.  
**Offered:** Every other year, Spring
- GDD 395. Critical Game Studies Seminar (PL 395).** **3 Credits.**  
In this course, students address topics in game studies, ludology or play theory to develop critical, conceptual and cultural understandings of narrative, meaning and identity in games. The course also addresses the design and development of serious and meaningful games and the aesthetic, social and technological implications of new emerging forms. Prerequisite may be waived with permission of the program director.  
**Prerequisites:** Take GDD 101 or PL 101.  
**Offered:** Every year, Fall
- GDD 396. Games, Learning & Society.** **3 Credits.**  
This course addresses the design and use of serious and meaningful games in the areas of education, health care and medicine. The use of videogames for a variety of pro-social uses is rapidly expanding. In this course, we examine how games can affect learning related to health issues, be used as a tool to collect data, and to motivate desirable behavior changes.  
**Offered:** As needed
- GDD 399. Independent Study.** **1-6 Credits.**  
Under the supervision of a faculty member, students pursue self-directed research and in-depth study in a subject that is not covered by the existing curriculum.  
**Offered:** As needed
- GDD 402. Game Art III.** **3 Credits.**  
Students continue with more advanced work using software tools required for designing and building 3D assets. Topics include techniques of advanced 3D modeling, texturing, lighting, motion capture and animation, scene planning, virtual camera angles, rendering, editing and compositing. Students continue adding their best artwork to their portfolio website.  
**Prerequisites:** Take GDD 302.  
**Offered:** Every year, Fall
- GDD 405. Game Audio Design.** **3 Credits.**  
This course covers sound design for games while exploring techniques of digital sound synthesis, recording, sampling and editing. Prerequisite may be waived with permission of program director.  
**Prerequisites:** Take GDD 200.  
**Offered:** As needed

**GDD 410. Game Lab V: Team Projects (FVI 410). 3 Credits.**

Game Lab V and VI forms a two-course sequence that builds upon the knowledge and skills of prior courses. With a focus on the process of iteration this course extends the experience of game production, coding, prototyping and playtesting gained in previous Game Labs. Students learn the basics of agile development and how to put it into practice. For game design and development majors.

**Prerequisites:** Take GDD 211 and senior status or permission of the program director.

**Offered:** Every year, Fall

**GDD 411. Game Lab VI: Team Projects. 3 Credits.**

This course is a continuation of Game Lab V. At the end of the semester, teams present a working game and provide documentation of their design and development process. Prerequisite: For game design and development majors.

**Prerequisites:** Take GDD 410 and senior status or permission of the program director.

**Offered:** Every year, Spring

**GDD 490. Internship. 1-3 Credits.**

Under the supervision of a faculty member and a participating private company, corporation, institution or community organization, students gain real-world experience working in the field of game design or related fields. For majors or minors in game design and development. Requires permission of the program director.

**Offered:** Every year, All

**GDD 495. Senior Project and Seminar I. 3 Credits.**

This course is the senior capstone in the major. Students reflect on how their academic experience and extracurricular activity during their undergraduate years have shaped their personal goals and aspirations. Based on their chosen track in game design or game art, students apply this knowledge, use their skills to develop a portfolio, website, resume and other professional materials and prepare for their careers after graduation.

**Prerequisites:** Requires senior status and a major or minor in game design and development.

**Offered:** Every year, Spring

**GDD 499. Independent Study. 1-6 Credits.**

Under the supervision of a faculty member, students pursue self-directed research and in-depth study in a subject that is not covered by the existing curriculum. Prerequisite: Junior or senior standing.

**Prerequisites:** GDD tutorial courses required for graduation are offered as needed.

**Offered:** As needed