GAME DEVELOPMENT AND ESPORTS MANAGEMENT (GDEM)

QUICK FACTS: GDEM COURSES

- **Instructional School**: Science, Technology, and Math
- **Department**: Computer Science

GDEM 101 Game Design Theory

(3 Credits, Fall)

This course introduces students to the core principles of game design for console, mobile, and web game environments through hands-on projects and practical applications. Students will explore player engagement, balance, and user experience design by studying popular games and industry practices while examining the societal impacts of games. Key topics include the game loop, mechanics-dynamics-aesthetics (MDA) framework, game balance, feedback loops, genre conventions, and ethical considerations in game development. Emphasis is placed on rapid prototyping, playtesting, applying player feedback to refine designs, responsible design, and building a foundation for creating cohesive, enjoyable, and meaningful gameplay experiences. PREREQ: Game Development and Esports Management major. *(2 lecture hours, 2 lab hours, 3 credits)*

GDEM 190 Esports Ecosystems

(3 Credits, Spring)

This course provides an in-depth exploration of the rapidly growing Esports industry, examining the structure, culture, and economics that define its ecosystem. Students will analyze the components of successful Esports organizations, study the impact of game design on audience engagement, and gain insight into the technologies and platforms that support competitive gaming. Key topics include event planning, ethical considerations, and the vital role of community and fandom in shaping team dynamics. By examining real-world case studies and engaging in practical projects, students will gain foundational skills and knowledge for careers in Esports, from team management and broadcasting to marketing and event coordination. PREREQ: Game Development and Esports Management major or PERM/INST. *(2 lecture hours, 2 lab hours, 3 credits)*

GDEM 202 Visual Storytelling

(3 Credits, Fall)

This course examines how stories are constructed and communicated visually through games and interactive media. Students explore camera work, framing, composition, color theory, and symbolic design to create mood, emotion, and narrative depth. Coursework emphasizes environmental storytelling and cinematic techniques used across multiple genres and platforms. Key topics include framing, composition, color theory, symbolism, environmental storytelling, mood creation, storyboarding, and character design. PREREQ: Game Development and Esports Management major. *(2 lecture hours, 2 lab hours, 3 credits)*

GDEM 210 Game Asset Development

(3 Credits, Fall)

This course introduces students to the creation and management of visual, audio, and user interface (UI) assets for games and interactive media. Students will explore tools like Adobe Creative Suite and Blender to develop reusable assets, with a focus on workflow, resolution formats, optimization, and production pipelines. In addition, students will have the opportunity to earn an industry-recognized certification for asset development software. Key topics include sprite sheets, textures, 2D/3D modeling, audio editing, animation cycles, pipeline integration, asset optimization, and engine compatibility. PREREQ: Game Development and Esports Management major. *(2 lecture hours, 2 lab hours, 3 credits)*

GDEM 225 2D Game Development

(3 Credits, Fall)

Students learn the fundamentals of designing and programming 2D games for browser and desktop using game engines and JavaScript frameworks. Emphasis is on developing mechanics, logic, UI, and polish, with practical coding and publishing experience. Key topics include sprite animation, 2D physics, scripting, UI design, input systems, camera control, browser deployment, and Unity/Unreal workflow. PRE/COREQ: GDEM 101, GDEM 210, and CPSC 111. *(2 lecture hours, 2 lab hours, 3 credits)*

GDEM 235 Esports Management

(3 Credits, Spring)

This course focuses on leadership, operations, content creation, and funding strategies within competitive gaming. Students will learn how to manage teams, run events, organize schedules, develop strategic plans, and build communities in alignment with professional and collegiate esports environments. In addition, students will have the opportunity to earn an industry-recognized certification for Agile project management. Key topics include team management, strategy development, content creation, live streaming, branding, sponsorship, and community building. PREREQ: Game Development and Esports Management major. *(2 lecture hours, 2 lab hours, 3 credits)*

GDEM 250 3D Game Development

(3 Credits, Spring)

This course focuses on building fully interactive 3D games using industry-standard engines and pipelines. Students will learn to implement 3D assets, design mechanics, and build immersive worlds with interactive systems. In addition, students will have the opportunity to earn an industry-recognized certification for a modern game engine. Key topics include 3D physics, character controllers, level design, lighting, AR/VR workflows, Unreal/Unity scripting, and performance optimization. PREREQ: GDEM 225. *(2 lecture hours, 2 lab hours, 3 credits)*

GDEM 290 Game Development and Esports Management Capstone

(3 Credits, Spring)

This culminating course brings together the knowledge and skills developed throughout the Game Development and Esports Management program. Students complete a portfolio-ready capstone project showcasing their personal and/or team-based specializations, as well as finalize an industry-ready portfolio and resume. Emphasis is placed on Agile workflow, career readiness, public presentation, and design reflection. Key topics include Agile project management, professional pipelines, portfolio building, public presentation, project postmortems, and career planning. PRE/COREQ: COMM 259, CPSC 153, CPSC 155, GDEM 190, GDEM 202, GDEM 235, and GDEM 250. *(1 lecture hours, 4 lab hours, 3 credits)*

GDEM 295 Game Development and Esports Management Internship
(1 Credit, Spring)
Internships allow students to apply learning to real-life career possibilities. Credits are earned through supervised fieldwork specifically related to a student's area of study. (Pass/No Pass) PREREQ: PERM/INST. *(0 lecture hours, 3 lab hours, 1 credits)*