Miami Dade College

Course Description

DIG2717C | Game Systems Design |4.00 credits

This is a core course for students majoring in game development and design. Students will learn how to develop game systems such as combat, economy, and social society. Students will also learn how to model and test systems before incorporating them into development, and how to use probability to create more interesting gameplay. Prerequisites: CAP 2047, DIG 1712, and MAC 1105.

Course Competencies

Competency 1: The student will demonstrate an understanding of game systems design by:

1. Discussing the different types of game systems and their effect on gameplay
2. Discussing the importance of balance in systems
3. Discussing the importance of the metagame to elder players and how balance can be broken over the short term to create better metagaming experiences over the long term

Competency 2: The student will analyze game systems by:

1. Identifying and distinguishing between game parameters, rules, and content
2. Creating new game content for an existingd20 system game that follows existing rules and utilizes existing parameters
3. Creating new rules and parameters to fit within an existing d20 system framework
4. Discussing the relationship between systems, player progression, and story

Competency 3: The student will demonstrate an understanding of probability and statistics within game systems by:

1. Discussing the different roles of probability within game systems and why it is in the best interest of the designer to be able to predict the outcomes of player actions
2. Discussing common fallacies associated with probability in games, with a special emphasis on the fallacy of equipartition
3. Discussing independent and related events in probability, and conditional probability

Competency 4: The student will analyze systems as part of the greater design by:

1. Discussing the game core loops and how systems are related to the greater play experience
2. Identifying different types of systems that exist in games and discussing how these systems affect each other
3. Analyzing data from systems and discussing how data can be used to inform balancing and future design

Competency 5: The student will demonstrate an application of probability in systems design by:

1. Modeling a game system using probability and discussing the likelihood events will occur given certain conditions
2. Testing the system with a significant sample and verifying that systems behaviors are predictable
3. Collecting data and discussing the results

Competency 6: The student will demonstrate an application of systems design by:

1. Creating workbooks of spreadsheets that model systems
2. Developing spreadsheets with scripts that allow a user to predict the outcome of a system given certain player actions
3. Testing and balancing their system models

Competency 7: The student will demonstrate knowledge of game mechanics as metaphor by:

1. Discussing how mechanics can be used to tell a story in games and the "do, don't show" principle of game storytelling
2. Discussing an interest curve in games and how mechanics can be used to maintain interest over time as well as how these concepts fit in with different storytelling models
3. Analyzing an existing game and discussing how mechanics and systems could be used to tell the story more effectively through player action
4. Discussing agency and immersion in games and how these concepts relate to mechanics and systems

Competency 8: The student will demonstrate how to evaluate game concepts and create documentation from a systems perspective by:

1. Modifying an existing design document to incorporate balanced mechanics that add to gameplay
2. Developing system documentation for a game design document
3. Referencing systems documentation effectively and using models to justify game design choices
4. Creating technical documentation that gives developers insight into their systems design (such as relevant equations and interrelationships) so that systems can be effectively developed

Learning Outcomes:

- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information
- Use computer and emerging technologies effectively