Course: DMED 540: Systematic Game Design: A holistic view of game design (3 credits)
Term: Summer 2026 – Term 3
Instructor: Ryan Dunnison
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Acknowledgement of Coast Salish Peoples and Land
We respectfully acknowledge the xʷməθkʷəy̓əm (Musqueam), Sḵwx̱wú7mesh Úxwumixw (Squamish), səlilwətaɬ (Tsleil-Waututh) peoples on whose unceded traditional territories our campus resides.

Course Description
What separates a junior designer from a more experienced designer or lead? Apart from experience it is a way of thinking: the ability to see a problem and intuit a solution based on a broader view. This course shifts the approach to design problems and situations from a step-by-step manner to understanding the interconnected systems at play.

Through a combination of reviewing case studies, student-led discussions on industry topics and scenarios, lectures, and applying a scientific method-like approach to various real-world problems, you will learn to architect solutions that account for the entire ecosystem of loops. We will deconstruct elements of the premium and freemium (free-to-play) models; monetization design; balance and economies; and examine the usefulness and pitfalls of gamification. Students will exit this course not just as feature designers, but as systems thinkers, able to dissect and offer new views on problems to address design issues from the root cause rather than the symptoms.

Course Objectives
Upon completion of this course, students will be able to:

- Deconstruct and Model Complex Economies: Analyze existing game systems to reverse-engineer their underlying logic and construct comprehensive balance sheets from scratch
- Synthesize Systemic Solutions: Apply advanced design principles to real-world case studies to diagnose root-cause issues and architect holistic solutions
- Evaluate Strategic Design Frameworks: Select and deploy the most effective design methodologies based on specific project constraints and goals
- Critique and Adapt Gamification: Critically analyze the efficacy of gamification by applying game-like mechanics to non-game contexts, identifying both high-impact strategies and potential pitfalls
- Create Dynamic Spreadsheets: Utilize spreadsheets as a primary prototyping tool to simulate system behaviors, stress-test variables, and validate balance before implementation.

Format of the Course
The course will run for 13 weeks with 3-hour weekly class and will consist of graduate level seminars, case study analyses and discussions. Students will be expected to participate in classroom activities and should show up prepared (having completed any necessary readings, or consumed any relevant media requested).

Throughout the course of the semester, students will participate in deep discussions dissecting and analyzing real world cases and hypothetical scenarios, complete individual assignments and deliver a

final comprehensive analysis and solution plan for an existing product. The course is capped by a final class presentation of each student's final analysis.

Work in this course will be mainly individual, but using the combined effort of the entire class to critique and improve each student's skills through peer reviews and analyses.

Course Schedule
The course will run on Mondays, 4:30pm – 7:30pm, May 11th – August 7th, 2026. There is a statutory holiday on Monday, May 18th and Monday, August 3rd. A make-up class is scheduled on Friday, May 22nd, from 9:00AM – 12:00PM and Friday, August 7th from 9:00AM – 12:00PM, respectively.

The following schedule outlines the majority of the topics covered during the course. Based on the interaction with students as well as the topics covered by parallel courses, some topics may be added or modified during the semester at the discretion of the instructor.

Class	Topic
Week 1 (Monday, May 11)	**Introduction to Systems, Critical Thinking and Case Analysis** Overview: Introduction to the course, a view of the types of game systems that exist, evaluation for their uses. Case Study 1 (Pt 1): Working with An Existing Property Objective: Begin the process of looking at the bigger picture, what to look for, what to prioritize and how to understand the context within the systems and structures that exist.
Week 2 (Friday, May 22)	**Viewing a Problem from Multiple Angles** Overview: Learning to think more systematically, analyzing and breaking down tasks across systems. Case Study 1 (Pt 2): Tackling a New Feature Form Multiple Angles Objective: Evaluate the options available to a designer when tackling a new feature, and applying this to the same case from the previous week. Understand the pros and cons to choosing the various approaches and identify potential issues that may need to be monitored or resolved in a real world example. **Assignment #1:** Case 1 - Part 1: Problem and Solution Identification and Analysis - Given the Case 1 Scenario, analyze the game systems to identify major problems and propose solutions.
Week 3 (Monday, May 25)	**Managing Balance** Overview: Build a game balance from the beginning in multiple scenarios from combat to economies. Explore the starting points for balancing a complex system, where to start and what to look for. Case Study 1 (Pt 3): Analysis, Problem and Solution Identification Objective: Understand the application of balance points, control levers and guides (sinks and sources). Applying knowledge to gain mastery of spreadsheets as a tool for quickly mapping a system.

	Assignment #1: Case 1 - Part 2: Visualizing the Problem – Use spreadsheets to help with problem identification and analyze the previously identified scenarios through this lens.
Week 4 (Monday, June 1)	**Spreadsheets for Prototyping** Overview: Using just in-cell formulas, create a prototype for a feature that contains some amount of output variability. Case Study 2 (Pt 1): Card Packs and Gotcha Systems Objective: Moving to a new case study, students will learn how to break down a complex feature in a way that may be prototyped without the need for a game engine. Students will also be introduced to tools used for manipulating drop-rate systems.
Week 5 (Monday, June 8)	**Live Operations: The Complex Machine (Retention + Analytics)** Overview: Introduction to the live-ops set of tools and metrics and looking more closely at retention mechanics such as daily and monthly rewards, social content and energy systems. Case Study 2 (Pt 2): – Cross-Sector Analysis (A look at competitors) Objective: Gain familiarity with systems unique to live-ops designed products. Gain additional tools to use when tackling retention systems and apply previously acquired knowledge to Live Operations scenarios to increase mastery. **Assignment #2:** Case 2**:** System Analysis, Problem + Solution Identification - Given the Case 2 Scenario, analyze the game systems to identify major problems and propose solutions using knowledge from the last 3 weeks.
Week 6 (Monday, June 15)	**Gamification in the Real World** Overview: Analyze several gamified applications to understand good and bad applications of gamification. Objective: Gamification as a means to an end rather than as a goal. Understand how bad application of the tools can be detrimental to the final goal of the application and that successful application can be an incredibly powerful tool and motivator. **Assignment #3:** Case 3 - Part 1: Choose a type of application or problem that exists in the real world that you believe would be helped by gamification. Propose how you would add game systems and features to improve this scenario.
Week 7 (Monday, June 22)	**Applied Gamification** Overview: Analyze the ideas of other students, identify potential problem areas and areas of strength. Suggest some ways to improve the design based on their stated goal. Objective: Improve analysis skills while simultaneously gaining data to improve individual work to gain better insights and widen perspectives. **Assignment #3:** Case 3 - Part 2: Break down the systems you are using, and why they are being used. Explain how these systems are helping to achieve the goals of the application.

Week 8 (Monday, June 29)	**Monetization** Overview: Deep dive on the historical monetization techniques. Identify which techniques are still in use and which have been left on the table. Objective: Learn the pros and cons of different monetization techniques used throughout the lifetime of the industry across the various monetization models. Understand the viability and some of the ethical concerns around the various techniques used in the industry.
Week 9 (Monday, July 6)	**Putting it Together: Creating a Healthy Live Game (Content Rotation and Expansion)** Overview: Learning key tools in tacking the complex systems that run Live Operation games such as: Manufactured Scarcity, Maintaining Control, Reacting and Rotation, and Rollout Planning. Identify and discuss the advantages and disadvantages of the various tools. Objective: Access a vocabulary of various tools that can be used when planning out live content or live-operation based games. Practice critical thinking and analysis. **Assignment #4:** Live Product Breakdown: Choose from a set of real live games - Break down their systems and create a mock-economy. Identify a problem area and propose a solution including a spreadsheet mockup of how it will impact the final product and expected value add. Present to the class.
Week 10 (Monday, July 13)	**Rapid Case Analyses** Overview: Using all of the skills built upon this semester take a look at many different specific cases where games succeeded or failed and analyze and discuss them as a group. Objective: Reinforce the techniques learned or expanded upon in this course and build up speed of analysis.
Week 11 (Monday, July 20)	**Peer Analyses** Overview: Workshop class where every Final Project is reviewed by multiple rounds of peers to identify problem areas, alternate solutions and understanding from multiple view points. Objective: Strengthen the final analysis and give additional credibility or aide in a fast pivot to a different solution.
Week 12 (Monday, July 27)	**Project Work Session, Peer Review Round 2 and Additional Cases** Overview: Topical cases will be introduced by the students and will be discussed in this class leading into more peer reviews and workshop time. Objective: Improve the strength of the final presentations and continued mastery of real world analyses.
Week 13 (Friday, August 7)	**Final Group Project Presentations** Overview: Present a summary of the product chosen, the results of the analysis and the suggested solution and justification.

	Objective: Demonstrate mastery of the techniques learned throughout the course.

Assignments Evaluation:

- **Assignments** are designed to reinforce individual learning and application of course concepts, with feedback provided to encourage improvement.

This course is structured to expand and broaden existing knowledge, give new tools to understanding and approaching problems, and apply skills to curated real-world scenarios. This will culminate in a full analysis where students showcase their newfound knowledge and approach on a live market product of their choice.

Course Assignments
Note: Assignments, due dates, and weighting are subject to change before the start of the semester

Assignment	Due Date	Weight	Details
Assignment #1	Week 4	15%	Case 1 – Problem Identification and Analysis
Assignment #2	Week 7	10%	Case 2 – Solution Identification
Assignment #3	Week 9	25%	Case 3 – Gamification
Assignment #4	Week 13	40%	Live Product Breakdown
Class Participation	*Week 1 - 13*	*10%*	*Contribution to class discussion, participation and group activities*

Required Readings

Each week students will be assigned required readings which will be posted on Canvas. Required readings include written materials, videos, experiences and games that will be discussed during the following class. Students are expected to have read all the materials before class. There are also additional suggested readings that supplement the course notes for students interested in delving further into systems design.

Attendance and Participation

Regular attendance is expected of students in all their classes (including participation, group work, tutorials, seminars, online etc.). Students who are unavoidably absent due to illness or disability should notify their instructors of their situation.

- Students are expected to attend every class on the schedule (based on their assigned group) and be fully present**.** While sickness is sometimes inevitable, understand that due to the experiential nature of the material, classes cannot be made up.
- Lateness also informs grading. Classes start punctually every week according to the schedule. Instructions will not be repeated, nor will it be tolerated if a latecomer bothers another student for instructions. If arriving later than half an hour into a class, a student may be marked as absent.
- Due dates: Late assignments will not be accepted without the explicit permission of the instructors and may be subject to a late penalty.

https://www.sfu.ca/students/enrolment-services/policies-and-procedures/academic-concessions.html

Grading Profile

A+	95-100	Exemplary expectations
A	90-94	Exceeding expectations
A-	85-89	Meet expectations
B+	80-84	Approaching expectations
B	75-79	
B-	70-74	Below expectations
C	60-69	Far below expectations
F	0 – 59	Fail (Students must retake the course).

A student in a master's or doctoral program must maintain a CGPA of 3.0. Under no circumstances will a student whose CGPA is below 3.0, be awarded a graduate degree.
https://www.sfu.ca/students/advising-resources/calculators/gpa-calculator.html

Laptops & Cell Phones

The use of laptops and cell phones during class is at the discretion of the instructor. *Please respect your classmates and instructors and refrain from text messages, social media, games and videos during class and workshop times.* Please note you should always bring pen and paper to class.

Written & Spoken English

English is the official language of the school and all communication (written and spoken) is expected to be conducted in English. SFU and the MDM Program provide a wide range of free language support for those who need and it's up to each learner to seek that support.

Accommodations

The university accommodates students whose religious obligations conflict with attendance, submitting assignments, or completing scheduled tests and examinations. Please let your instructor know in advance, preferably the first week of class, if you will require any accommodations on these grounds.

The Centre for Accessible Learning (CAL) will make every effort to assist students with disabilities so that they achieve their educational goals. https://www.sfu.ca/students/accessible-learning/establishing-accommodations/accommodation.html

Academic Integrity: Your Work, Your Success
SFU's Academic Integrity website http://www.sfu.ca/students/academicintegrity.html is filled with information on what is meant by academic dishonesty, where you can find resources to help with your studies and the consequences of cheating.
Each student is responsible for their conduct as it affects the university community. Academic dishonesty, in whatever form, is ultimately destructive of the values of the university. Furthermore, it is unfair and discouraging to the majority of students who pursue their studies honestly. Scholarly integrity is required of all members of the university. http://www.sfu.ca/policies/gazette/student/s10-01.html
If you are using generative AI to produce content that will be part of your graded work in the course, you must be transparent about the tools that you use. Undeclared use of the tool/technology will be considered a violation of the academic integrity policy. Be aware that any tool used will require you to evaluate the output for accuracies and be responsible for making the appropriate corrections.

Inappropriate use of technology in coursework
If you are using any technology, including generative AI, to produce or edit content that will be part of your graded work in the course, you must be transparent about the tools that you use. Undeclared use of the tool/technology will be considered a violation of the academic integrity policy. Be aware that any tool used will require you to evaluate the output for accuracies and be responsible for making the appropriate corrections.

Graduate Studies Notes
Important dates and deadlines for graduate students are found here: http://www.sfu.ca/dean-gradstudies/current/important_dates/guidelines.html.