Digital Game Creation CDGD
Master of Interactive Technology Degree - Certificate
Mission Statement (Full Description):
1. Students will be able to create a digital game
2. Students will be able to successfully defend their thesis to earn a master's degree.

Does your program offer courses at an off-campus instructional site (not at SMU Dallas campus)?:
No

Does your program offer courses through distance education technology (e.g., asynchronous, synchronous, or both)?:
No

During which academic year were students first enrolled in this program?:
AY2023-2024

Progress:
Complete

Students will be able to create a digital game - Capstone
Step 1A: SLO Number:
1

Step 1C: SLO Statement (Full Description):
PLO#1 The digital game is assessed at the end of Semester 4 with the Capstone course game submission.

Step 2A: Measure:
PLO#1 Measure: The digital game is assessed at the end of Semester 4 with Capstone course game submission.

Work Ethic (Individual)	1	2	3	4	5
Focuses on the task and what needs to be done. Very self-directed.	Very seldom	Seldom	Neutral	Usually	Always

Work Quality (Individual)	1	2	3	4	5

Work reflects this student's best efforts.	Very seldom	Seldom	Neutral	Usually	Always

Game Enjoyment (Final Product)	1	2	3	4	5
Game is enjoyable.	No enjoyment	Lacking much enjoyment	Equal parts of enjoyment and no enjoyment	Mostly enjoyable	Very enjoyable

PLO#2 Measure: The thesis artifact is assessed at the end of Semester 5 with Thesis IV course public defense. (MIT only)

Proposal and Context	1	2	3	4	5
Is the Thesis question, hypothesis, background review and importance to the industry presented clearly and succinctly?	Very Poor	Poor	Acceptable	Good	Excellent

Artifact	1	2	3	4	5
Was the student prepared to show his artifact? Does the artifact adequately test the hypothesis presented?	Very Poor	Poor	Acceptable	Good	Excellent

Data and Conclusions	1	2	3	4	5
Is the data formatted clearly? Is the data appropriate to the thesis question?Are the conclusions presented clearly?Does the data support the conclusions?	Very Poor	Poor	Acceptable	Good	Excellent

Mastery	1	2	3	4	5
Did the student demonstrate mastery of the subject matter? Could they verbally debate issues when	Very Poor	Poor	Acceptable	Good	Excellent

presented with difficult questions? Did they acknowledge issues when they arose? Were there any holes in their knowledge base on their thesis topic?				

Step 2B: Type of Measure (check all that apply):
Capstone project,Rubric

Step 2C: Is Measure direct or indirect?:
Direct

Step 3A: Target for Measure:
Target: 80% of students should score a 3 or greater on the contribution and the cross-disciplinary team game quality on a 5 point Likert scale. Note: If the number of students enrolled in the program is under 5 students," no more than 1 student should score below a 3"
PLO #2 70% of students complete the MIT degree requirements by graduation. Note: If the number of students enrolled in the program is under 5 students, "no more than 1 student should score below a 3". (MIT only)

Step 4A: Was the target met for this Measure?:
Partially Met

Step 4B: Results and Findings for this Measure:

PLO#1

Cohort:	C32	Fall	2023	Date:	6/5/24
45 Students	Ethic	Quality	Game		AVERAGE
Average:	4.5	4.4	3.7		4.2
	Hit	Hit	Hit		

Step 4C: Interpretation of Results:
1st year to capture results for Capstone. See below:

Methodology:
Ethic and Quality are compiled from the average corresponding peer eval categories scores, respectively, earned by each student over the course of the semester. Game score is the average of each faculty's subjective score based on the 1-5 metrics described in the rubric

Step 5A: Use of Results for Seeking Improvement (Action Plan):
PLO# 1 - Capstone - All students

No students fell below targets. Faculty will continue methodology of speaking with each student periodically throughout the semester to go over these metrics and other teamwork feedback. We will continue to monitor, coach, and guide the teams towards delivering fun, commercial quality games for their capstones through the iterative development process.

Step 5B: Type of Action:
Additional emphasis or time on content,Additional activities or assignments,Program leadership involvement ,Faculty involvement

Step 5C: Dialogue Participants (check all that apply):
Faculty

Step 5D: Evidence of Dialogue:
Attached minutes from Faculty IE meeting May 2024.

Attached Files
 IE report Semester 5 2024-final.docx

Step 5E: Type of other Improvements (check all that apply):
Other

Step 5F: Other Improvements (Full Description):
New measure. Additional information to be recorded in future IE meetings.

Step 6A: Status Update on Action(s) Identified in the Previous Assessment Cycle (Full Description):
New measure. None previously recorded.

Step 6B: Status Update on Previously Identified Action Plan(s):
In progress

Progress:
Complete

ART - Certificate
Step 1A: SLO Number:
2

Step 1C: SLO Statement (Full Description):
PLO#2 Students will be able to show expertise in digital game ART skills at a professional quality level.

Step 2A: Measure:
PLO#2 Measure: Students will be able to show expertise in digital game ART skills at a professional quality level. Semester 3 DFS1 Artifacts and Semester 5 DFSII
1   1.2D Art – Assess student digital portfolio artifacts based on 2D Art including drawing and painting, matte painting, texturing, animation,   ability to observe details in artifacts and digitally paint.
2   2.Modeling – Assess student digital portfolio artifacts based on Model Construction including 3D art understanding, creation, and usage of   topology in models.
3   3.Materials – Assess student digital portfolio artifacts based on Materials, including PBR and non-PBR shader types, use of lighting and area to   show material properties.
4   4.Tools – Assess student digital portfolio artifacts based on Tools, including Photoshop, 3dsmax, Mudbox, Game Engines and use of tools in a   pipeline.
P   Semester 5
   1.Expertise - Assess student digital portfolio artifacts based on having a broad spectrum of expertise as well as a focused area of expertise. Use of content creation and conveyance should be clear and the ability to create within various pipelines and systems for specific outcomes in conjunction with goals.
   2.Craftsmanship - Assess student digital portfolio artifacts regarding the use of advanced techniques with the technology as they should meld with an advanced understanding of artistry and professionalism.
   3.Presentation – Assess student digital portfolio artifacts by the quality of presentations of content through images, exported finished models and scenes, videos.

Step 2B: Type of Measure (check all that apply):
Rubric

Step 2C: Is Measure direct or indirect?:
Direct

Step 3A: Target for Measure:
Target: 80% of students should score a 3 or greater on the contribution and the cross-disciplinary team game quality on a 5 point Likert scale. Note: If the number of students enrolled in the program is under 5 students," no more than 1 student should score below a 3"

Step 4A: Was the target met for this Measure?:
Met

Step 4B: Results and Findings for this Measure:

PLO#2 Semester 3 ART Results:

Total PM Students	2	2	2
% Students > Target	100.0%	100.0%	100.0%
Target	Hit	Hit	Hit

PLO#2 Semester 5 ART Results:

Total PM Students	2	2	2
% Students > Target	100.0%	100.0%	100.0%
Target	Hit	Hit	Hit

Step 4C: Interpretation of Results:
See below for action item

Step 5A: Use of Results for Seeking Improvement (Action Plan):
PLO#2 - Art Certificate
In recognition of the exemplary performance and dedication exhibited by all students, it has been determined that the established metrics have been met across the board. This remarkable achievement stands as a testament to the collective effort and commitment to excellence within the student body. The current trajectory reflects a level of success that aligns with our highest expectations. Moving forward, the focus will remain on maintaining this standard of achievement while fostering an environment conducive to continuous growth and development. Faculty will continue to research the latest tools and techniques required by the industry, to keep the curriculum current and viable to deliver industry ready students.

Step 5B: Type of Action:
Program leadership involvement ,Faculty involvement

Step 5C: Dialogue Participants (check all that apply):
Faculty

Step 5D: Evidence of Dialogue:
Meeting notes from May 2024 IE meeting attached.
Art Creation Certificate Portfolio Student Learning Outcomes Rubric

Organizational Skills

Expertise	1	2	3	4	5
How well does the student portfolio show a broad spectrum of expertise as well as a focused area of expertise. Use of content creation and conveyance should be clear and the ability to create within various pipelines and systems for specific outcomes in conjunction with goals.	Poor	Below average		Good	Excellent

Craftsmanship	1	2	3	4	5
How well does the student portfolio show use of advanced techniques with the technology as they should meld with an advanced understanding of artistry and professionalism.	Poor	Below average		Good	Excellent

Presentation	1	2	3	4	5
Assess student portfolios by the quality of presentations of content through images, exported	Poor	Below average		Good	Excellent

finished models and scenes,
videos.

Art rubric:

Attached Files
  IE report Semester 5 2024-final.docx
  2023 Semester 3 C31 meeting notes.docx

Step 5E: Type of other Improvements (check all that apply):
Other

Step 5F: Other Improvements (Full Description):
None noted

Step 6A: Status Update on Action(s) Identified in the Previous Assessment Cycle (Full Description):
None noted

Step 6B: Status Update on Previously Identified Action Plan(s):
In progress

Progress:
Complete

Level Design - Certificate
Step 1A: SLO Number:
3

Step 1C: SLO Statement (Full Description):
PLO#3 Students will be able to show expertise in Level Design skills at a professional quality level.

Step 2A: Measure:
PLO #3 Measure: The digital game Level Design artifacts are assessed at the end of Semester 3 with the Directed Focus Study I artifact(s) and the end of Semester 5 with the Directed Focus II artifact(s).

1. Aesthetics - Assess student digital portfolio artifacts based on aesthetic skill including visual quality, decorative placement, clutter, lighting, audio design (matches game), immersiveness, and engagement.
2. Technical - Assess student digital portfolio artifacts based on technical skill including scripting, artificial intelligence (AI) movement and behavior, navmesh, cover, scripted events, construction, implementation (no gaps or floating objects), audio work, optimization, layers, streaming, collaboration tool use, comments, visgroups and groups.
3. Gameplay - Assess student digital portfolio artifacts based on gameplay including flow, conveyance, communication, pacing, balance, engagement and creativity.
4. Documentation - Assess student digital portfolio artifacts based on documentation including pre-planning, conciseness, clarity, completeness, usefulness, and updates.

Semester 5
1. Insight - Assess student digital portfolio artifacts based on insight including conveying designs in ways demonstrating understanding of best practices of level design, conveying the intent behind the designs, goals and ways achieved those goals, creative solutions, stories of challenges faced and overcome, stories of working as a team, and conveying what was learned.
2. Communication - Assess student digital portfolio artifacts based on communication including conciseness, getting to the point quickly, using images/graphics/videos/charts/diagrams over words where possible, correctness, proper grammar, presenting things accurately (not taking credit for other's work or implying more than was done), usefulness, conveying basic information people need to know about the project, conveying what was done on the project, and having a way to contact.
3. Presentation - Assess student digital portfolio artifacts based on presentation including quality aesthetics, ease of navigation, quality of screen shots, and quality of videos.

Step 2B: Type of Measure (check all that apply):
Rubric

Step 2C: Is Measure direct or indirect?:
Direct

Step 3A: Target for Measure:
Target: 80% of students should score a 3 or greater on the contribution and the cross-disciplinary team game quality on a 5 point Likert scale. Note: If the number of students enrolled in the program is under 5 students," no more than 1 student should score below a 3"

Step 4A: Was the target met for this Measure?:
Partially Met

Step 4B: Results and Findings for this Measure:

PLO#3 Semester 3 Level Design Results:

Total PM Students	3	3	3	3
% Students > Target	100.0%	100.0%	100%	66.67%
Target	Hit	Hit	Hit	Missed

PLO#3 Semester 5 Level Design Results:

Total PM Students	3	3	3
% Students > Target	100.0%	100.0%	33.37%
Target	Hit	Hit	Missed

Step 4C: Interpretation of Results:

Recorded in Action Plan.

Step 5A: Use of Results for Seeking Improvement (Action Plan):

PLO#3 - Level Design Certificate Semester 3

The three students met the overall expected targets for the Directed Focus Study II: Level Design curse. However, the students demonstrated mixed results in specific categories: Aesthetics, Technical, Gameplay, and Documentation. The students were not the strongest Technically and opted to create game levels which required less programmatic effort and understanding. Regarding Documentation, one student did not meet the standard. In the Level Design I and Level Design II courses, we plan to place additional emphasis on documentation and the level planning process to reinforce this skill. Additionally, the design faculty will encourage the students to make use of the Moody Graduate Writing Center – which is an available resource for tutoring and writing help – in earlier LD courses. Currently, this resource tends to get the most emphasis in relation to Thesis in the 3rd semester. Based on past IE related to Aesthetics, art/aesthetic components have been added to the end of the Level Design: Special Topics course (summer term), with emphasis on lighting and composition. Continue to monitor the overall Aesthetics progress for future cohorts.

PLO#3 - Level Design Certificate Semester 5

The three students demonstrated good insight and decent communication when designing and creating their portfolio materials 9 Website, resume and cover letter). In general, the students were weaker then desired in their ability to write and express their strengths, weakness, etc. Regarding written communication, the Level Design I and Level Design II courses, we plan to place additional emphasis on level design techniques and the level design process to reinforce this skill for student portfolios. Additionally, the design faculty will encourage the students to make use of the Moody Graduate Writing Center – which is an available resource for tutoring and writing help – in earlier LD courses. Currently, this resource tends to get most emphasis in relation to Thesis in the 3rd semesters. Notably, two of the three students missed in the Presentation category. This result is largely due to the student's poor website layout and structure (cut – off sentences & incorrectly formatted

images). The faculty believe this issue stems from a wed tool issue in which mobile site layout measurements and computer layout measurements differ and conflict. The students were alerted of these errors and have since adjusted. The faculty plan to highlight this potential issue in the Professional Development course and pace additional emphasis on testing a portfolio site in various formats.

Step 5B: Type of Action:
Additional emphasis or time on content,Program leadership involvement ,Faculty involvement

Step 5C: Dialogue Participants (check all that apply):
Faculty

Step 5D: Evidence of Dialogue:
Notes from IE meeting Fall 2023 and May 2024 attached.
LD Cert Rubrics:
Level Design Programmatic Student Learning Outcomes Rubric - Common

	1	2	3	4	5
Aesthetics Assess student portfolios based on aesthetic skill including visual quality, decorative placement, clutter, lighting, audio design (matches game), immersiveness, and engagement.	Very Poor	Poor	Average	Good	Excellent
Technical Assess student portfolios based on technical skill including scripting, artificial intelligence (AI) movement and behavior, navmesh, cover, scripted events, construction, implementation (e.g. no gaps or floating objects), audio work, optimization, layers, streaming, collaboration tool use, comments, visgroups and groups.	Very Poor	Poor	Average	Good	Excellent
Gameplay Assess student portfolios based on gameplay including flow, conveyance, communication, pacing, balance, engagement, and creativity.	Very Poor	Poor	Average	Good	Excellent
Documentation Assess student portfolios based on documentation including pre-planning, conciseness, clarity, completeness, usefulness, and updates.	Very Poor	Poor	Average	Good	Excellent

Level Design Programmatic Student Learning Outcomes Rubric - Certificate

	1	2	3	4	5

Insight
Assess student portfolios based on insight including conveying designs in ways demonstrating understanding of best practices of level design, conveying the intent behind the designs, goals and ways achieved those goals, creative solutions, stories of challenges faced and overcome, stories of working as a team, and conveying what was learned.

1	2	3	4	5
Very Poor	Poor	Average	Good	Excellent

Communication
Assess student portfolios based on communication including conciseness, getting to the point quickly, using images/graphics/videos/charts/diagrams over words where possible, correctness, proper grammar, presenting things accurately (not taking credit for other's work or implying more than was done), usefulness, conveying basic information people need to know about the project, conveying what was done on the project, and having a way to contact.

1	2	3	4	5
Very Poor	Poor	Average	Good	Excellent

Presentation
Assess student portfolios based on presentation including quality aesthetics, ease of navigation, quality of screen shots, and quality of videos.

1	2	3	4	5
Very Poor	Poor	Average	Good	Excellent

Attached Files
  IE report Semester 5 2024-final.docx
  2023 Semester 3 C31 meeting notes.docx

Step 5E: Type of other Improvements (check all that apply):
Other

Step 5F: Other Improvements (Full Description):
None noted

Step 6A: Status Update on Action(s) Identified in the Previous Assessment Cycle (Full Description):
None Noted

Step 6B: Status Update on Previously Identified Action Plan(s):

In progress

Progress:
Complete

Game Programming - Certificate
Step 1A: SLO Number:
4

Step 1C: SLO Statement (Full Description):
PLO#4 Students will be able to show expertise in Game Programming skills at a professional quality level.

Step 2A: Measure:
PLO #4 Measure: The digital game programming artifacts are assessed at the end of Semester 3 with the Directed Focus Study I artifact(s) and the end of Semester 5 with the Directed Focus II artifact(s).)

1. Math Fluency – Assess student portfolios based on math fluency including a general understanding of mathematics used for games and the ability to create game software using math and physics knowledge.
2. C++ Fluency – Assess student portfolios based on C++ fluency including the ability to solve problems in C++ in a timely manner and understand the pros and cons of common C++ constructs.
3. System Architecture – Assess student portfolios based on system architecture including the ability to design and create efficient and maintainable code-bases of any size as well as the ability to break down a game engine into its underlying systems and describe how they fit together.
4. Engine Systems Programming – Assess student portfolios based on engine systems programming including competency implementing one or more engine systems, such as physics, rendering, networking, audio, or AI.
5. Gameplay Programming – Assess student portfolios based on gameplay programming including the ability to use an existing game engine to create prototypes and games as well as sensitivity to game feel and ability to craft compelling user experiences.

Semester 5
1. Presentation – Assess student portfolios based on presentation including the ability to prepare and present a portfolio showcasing their work.
2. Professionalism – Assess student portfolios based on professionalism including professional quality and readiness to be shown to a recruiter.

Step 2B: Type of Measure (check all that apply):
Rubric

Step 2C: Is Measure direct or indirect?:
Direct

Step 3A: Target for Measure:
Target: 80% of students should score a 3 or greater on the contribution and the cross-disciplinary team game quality on a 5 point Likert scale. Note: If the number of students enrolled in the program is under 5 students," no more than 1 student should score below a 3"

Step 4A: Was the target met for this Measure?:
Met

Step 4B: Results and Findings for this Measure:

PLO#4 Software Deveolpment Semester 3 Results:

Total PM Students	1	1	1	1
% Students > Target	0%%	0%	0%	0%
Target	Missed	Missed	Missed	Missed

PLO#4 Software Development Semester 5 Results:

Total PM Students	1	1
% Students > Target	100%	100%
Target	Hit	Hit

Step 4C: Interpretation of Results:
See action plan

Step 5A: Use of Results for Seeking Improvement (Action Plan):
PLO#4 - Software Design Certificate Semester 3
With only 1 student, we're not officially calling this a miss. However, this student was admitted with an in adequate skill set and had to work twice as hard to survive initially. Two years and a lot of help later, he's come a long way and is now on a strong growth trajectory, but still making up for lost time). No Change, except perhaps continued admissions forensics on this and similar cases
PLO#4 - Software Design Certificate Semester 5
We had one certificate student hit our target on portfolio standards. However, student portfolios are generally not completed early enough in the semester and more attention should be paid to this.

Step 5B: Type of Action:

No action - New/low-enrolled program,Additional emphasis or time on content,Faculty involvement

Step 5C: Dialogue Participants (check all that apply):
Faculty

Step 5D: Evidence of Dialogue:
Meeting notes from fall2023 and spring 2024 attached.

Attached Files
 [IE report Semester 5 2024-final.docx](#)
 [2023 Semester 3 C31 meeting notes.docx](#)

Step 5E: Type of other Improvements (check all that apply):
Other

Step 5F: Other Improvements (Full Description):
None noted

Step 6A: Status Update on Action(s) Identified in the Previous Assessment Cycle (Full Description):
None noted

Step 6B: Status Update on Previously Identified Action Plan(s):
In progress

Progress:
Complete

Admissions Cohort Size - Common - Across all disciplines
Step 1A: PG Number:
1

Step 1C: PG Statement (Full Description):
We are aiming for recruitment of 45 students per Cohort.

Step 2A: Measure:
PO#1 Target for Cohort size of 45 or higher

Step 2B: Is Measure direct or indirect?:
Direct

Step 3A: Target for Measure:
Target for Cohort size of 45 or higher

Step 4A: Was the target met for this Measure?:
Met

Step 4B: Results and Findings for this Measure:
Cohort Size C33 = 45 students
Cohort Size C34 = 57 students

Step 4C: Interpretation of Results:
Recruitment efforts, domestic and internationally, resulted in successful targets.

Step 5A: Use of Results for Seeking Improvement (Action Plan):
Continue recruitment current efforts and expand in person recruitment events. Continue to use EAB resources for undergrads identification.

Step 5B: Dialogue Participants (check all that apply):
Staff

Step 5C: Evidence of Dialogue:
None noted in IE meeting May 2024. Recorded in Semester 3 IE meeting.

Step 5D: Type of other Improvements (check all that apply):
Enhanced recruitment effort,Other

Step 5E: Other Improvements (Full Description):
None noted in IE meeting May 2024.

Step 6A: Status Update on Action(s) Identified in the Previous Assessment Cycle (Full Description):
None Noted.

Step 6B: Status Update on Previously Identified Action Plan(s):
In progress

Progress:
Complete

Admission Score - Common - Across all disciplines
Step 1A: PG Number:
2

Step 1C: PG Statement (Full Description):
PO#2 An admission score on a Likert Scale of 3.75 out of 5 for all entering students across all specializations., MIT or certificate.

Step 2A: Measure:
PO#2 An admission score on a Likert Scale of 3.75 out of 5 for all entering students across all specializations, MIT or certificate.

Step 2B: Is Measure direct or indirect?:
Direct

Step 3A: Target for Measure:
PO#2 An Admission score on a Likert Scale of 3.75 out of 5 for all entering students across all specializations, MIT and certificate.

Step 4A: Was the target met for this Measure?:
Not Met

Step 4B: Results and Findings for this Measure:
C33 admitted students score was a 3.45 out of 5.

Step 4C: Interpretation of Results:
Consider re- evaluating and adjusting the admissions scoring.

Step 5A: Use of Results for Seeking Improvement (Action Plan):
Consider re-evaluating and adjusting the admissions scoring

Step 5B: Dialogue Participants (check all that apply):
Faculty,Staff

Step 5C: Evidence of Dialogue:
None noted in IE meeting. Offline discussions

Step 5D: Type of other Improvements (check all that apply):
Advertising and marketing campaigns ,Enhanced recruitment effort,Other

Step 5E: Other Improvements (Full Description):
None Noted

Step 6A: Status Update on Action(s) Identified in the Previous Assessment Cycle (Full Description):
None Noted

Step 6B: Status Update on Previously Identified Action Plan(s):
In progress

Progress:
Complete

Placement - Common - Across all disciplines
Step 1A: PG Number:
3

Step 1C: PG Statement (Full Description):
PO#3 Reach placement goals at 3 and 6 months post-graduation

Step 2A: Measure:
Placement of graduated cohort measured at 3 months and 6 months in industry related positions.

Step 2B: Is Measure direct or indirect?:
Indirect

Step 3A: Target for Measure:
- 55% placement at 3 months after graduation
- 75% placement at 6 months after graduation

Step 4A: Was the target met for this Measure?:
Met

Step 4B: Results and Findings for this Measure:
Cohort tracking resulted in the following job placements.
3 month placement = 57%
6 month placement = 73%

Step 4C: Interpretation of Results:
3 months placement target met. 6 month placement target not met.

Step 5A: Use of Results for Seeking Improvement (Action Plan):
Cohort 32 faced challenges beyond their control when searching for job placement. The industry has been facing hardship with unprecedented amounts of layoffs, saturating the market with developers that have more years of experience than our graduates. Our cohort has been competing against their seniors for roles as studios prioritized finding placement for those affected by layoffs over those trying to enter industry. Being 2.5% short of target placement for 6 months after graduation in the current market is an exemplary performance for our graduates and does not reflect poorly on their preparation. Alumni career support should continue as it has been.
Also considering tracking not just placement but type of position, ie... Managment positions, director level, etc.

Step 5B: Dialogue Participants (check all that apply):
Faculty,Staff

Step 5C: Evidence of Dialogue:
IE meeting notes from May with June follow up notes are attached.

Attached Files
  IE report Semester 5 2024-final.docx

Step 5D: Type of other Improvements (check all that apply):
Other

Step 5E: Other Improvements (Full Description):
Not noted other than action items.

Step 6A: Status Update on Action(s) Identified in the Previous Assessment Cycle (Full Description):

. Periodic updates in individual placement sent via email.

Step 6B: Status Update on Previously Identified Action Plan(s):
In progress

Progress:
Complete