Game Design Program Review
SELF STUDY REPORT

Department of Communications Media
Fitchburg State University

CONDUCTED AY 2020-2021
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A. Executive Summary

This is the first Program Review of the Game Design program, since its inception in September 2013. We achieved or addressed all of the Program Goals established in the original Program Proposal, and have been working diligently to maintain and improve the program to the benefit of our students.

Since inception, we hired three new tenure-track faculty members into the program: two were tenured, and all three were promoted to Associate. We have built and maintained computer labs and facilities with the assistance of our Facilities and Technology departments. We addressed the need for internship sites by creating a dedicated Game Studio capstone course, and we have exceeded our enrollment targets every year.

According to Game Design Trend Data (see Appendix 1), enrollment and student retention are both very strong, despite state- and institution-wide downturns in enrollments. Our program has grown since 2013, and has consistently exceeded our admissions goals: In 2013, our initial enrollment target was 32 students; we admitted 37. Even after raising our target to 40 students, we have consistently remained above this goal every year.

In addition, between AY2016 and AY2020, the major retained students at a rate consistently above the institutional average. In overall major numbers, this translates as follows. In our initial program proposal, we anticipated having 128 students in the major by the 4th year. In actuality, in the 4th year we had 158 students, and in AY2020 we had 178 (see Appendix 1). This is of course good in that we as a program and school want and need students, but it is also a serious issue as we do not currently have adequate faculty coverage for the courses needed for cohorts of students. As a result, many courses are chronically overenrolled.

Game Design Program Trend Data
Day-School

	AY 14	AY 15	AY 16	AY 17	AY 18	AY 19	AY 20	Trend
Number of Majors2	**53**	**87**	**131**	**153**	**172**	**177**	**178**	
Overall declared majors3	4,017	3,806	3,840	3,862	3,837	3,805	3,607	
Percentage of overall declared majors	**1.32%**	**2.29%**	**3.41%**	**3.96%**	**4.48%**	**4.65%**	**4.93%**	
Number of incoming freshmen majors	24	32	46	39	42	44	40	
Percentage of incoming freshmen class4	2.97%	4.35%	5.85%	5.11%	5.56%	6.10%	5.85%	
Number of incoming transfer majors	13	6	5	4	7	13	12	
Percentage of incoming transfer class4	2.94%	1.38%	1.23%	0.88%	1.59%	3.13%	3.93%	

Game Design can extend existing strengths by considering how the program measures student learning. At this time, the program uses a portfolio defense conducted in a student's penultimate semester as its program assessment. While this is useful in determining the knowledge and skills students have gained in the program, it does not allow time to address any deficiencies in a student's portfolio prior to that student's capstone. The Game Design faculty – and the Communications Media department as a whole – have discussed the possibility of adding some

type of mid-program review of student work with the aim of identifying any deficiencies sooner and working with students to help them improve.

The program has not updated its Mission or Student Learning Outcomes since 2013, and has never formally mapped SLOs to specific courses. It would be worthwhile to update our program SLOs, and In doing so, we may discover the roots of common deficiencies that we can address in the curriculum.

A target area in which the Game Design program would like to improve is the employment rate of our graduates in their chosen major's field. Based on our 2020 Alumni Survey, 42.4% of Game Design graduates are employed in a field closely related to their degree. With recent Game Design graduates working for Epic Games, Tricky Fast Studios, Rockstar New England, and Warner Brothers Games, there has been positive change in this regard, and discussion about potential recruitment efforts. Additionally, through the insight gained in the student survey, it is possible to see trends and skills consistently leading to student success. The survey did indicate positive ratings for the overall satisfaction with the program and the quality of faculty instruction. We hope to take the information and feedback gained through this review and put this into action to greatly improve these issues.

B. Overview and Vision

1. Brief Overview of the Program & Department

The Game Design program, housed in the Communications Media Department, consists of the Bachelor of Science in Game Design and the Game Design Minor. This is the first Game Design program review since the program was created.

The Communications Media department is one of the largest academic departments on campus, with over 600 students, 23 faculty, and four staff members. The department offers two undergraduate majors: the BS in Game Design, and the BS in Communications Media, which has six concentrations: Film/Video, Graphic Design, Photography, Professional Communication, Theater, and Technical Theater. The department also offers six undergraduate minors: Communications Studies, Game Design, Graphic Design, Theater, Technical Theater, and Film Studies, an interdisciplinary minor co-sponsored with the English Studies department. In addition, the department offers a Master of Science in Applied Communication.

Game Design Program Overview

The Bachelor of Science in Game Design is a 60 credit major with 24 credits in Core classes, 24 credits in electives, and 12 credits in the Professional Capstone. Students are exposed to all aspects of game design & development: concepting & pitching, designing mechanics, creating art, programming, level design, narrative design, critical theory, team development, publishing, and iteration. Students learn professional tools including game engines, 2D & 3D art software and techniques, and tools for managing projects, timelines, and teams. Considering our broad focus, we might more appropriately be named “game development” instead of design.

History

In 2012, Communications Media faculty Jeff Warmouth and Samuel Tobin, who had been teaching Interactive Media & Game Design courses, were invited by the Provost to create a new Game Design program. With input from faculty in Computer Science, English Studies, and Art, they designed the curriculum, including the Major, the Minor, and 13 new courses. The program was approved by the Massachusetts Board of Higher Education, and the Admissions department began recruiting students.

New facilities were constructed in Conlon Hall, home to the Communications Media Department, including two state-of-the-art computer labs with 20 workstations each, a Motion Capture studio, and a Game Lounge. Computers, software licenses, and peripherals were purchased, in consultation with faculty and Information Technology. The first incoming class of 24 freshmen and 13 transfers was admitted in Fall 2013 / AY 2014. Over the next three years, three

additional tenure-track faculty members were hired: Jonathan Amakawa, Les Nelken, and Britton Snyder. The enrollment cap was raised with the third faculty hire, and in AY2020 we enrolled 40 freshmen and 12 transfers, for a current total of 178 students in the major, and 15 in the minor.

Capstone

A distinctive feature of the Game Design major, which it shares with the Communications Media major, is the full-time, semester-long, 12-credit capstone which allows students to gain experience in their chosen field prior to graduation. Initially, the Game Design major required COMM 4880 Internship. However, after two years of attempting to establish Game Design internship sites, we reached the conclusion that very few game companies are willing or prepared to offer internships, and we would be unable to secure our necessary 32+ internships per year. As a result, we devised an alternative professional experience while still allowing for the option of an internship in industry.

In 2015, we designed, proposed and implemented GAME 4100 Game Studio, an alternate capstone experience that maintains the rigor and professionalism of the Game Design program. Game Studio is aligned with best practices recommended by the International Game Developers Association and the Digital Games Research Association, modeled on capstone courses in other programs throughout the country, and informed by feedback from students, alumni, and industry professionals. It creates an in-house professional experience for the students, in which they work together to design, develop, test, and publish a game during the semester, while also working to hone their professional portfolio.

In 2018, the University created a new Game Studio facility for the program – a beautifully renovated professional space above a vintage theater in downtown Fitchburg, 1 mile from the main campus. Since its inception, the Game Studio course has sought to balance creative experimentation and autonomy, by allowing students the chance to pitch game ideas and form teams, with a professional industry structure comprising scrum meetings, task management and game development. The result has been an alternative to the Communications Media Internship course that bridges our upper level game production courses and the real world game industry.

2. Program Objectives, Vision, and Mission

In this section, the Communications Media Department and Game Design program objectives, vision & mission statements are described. The Game Design program objectives have not been updated since the founding of the program in 2013. Over the past seven years, the major has grown and changed, and the field of game development and its technology have evolved. Nevertheless, our core values have remained stable.

Communications Media Department Mission Statement and Goals

The Communications Media Department mission statement and goals are provided below.

Mission Statement

The aim of the Communications Media Department is to educate media professionals who are technically and aesthetically competent and ready for employment in their areas of emphasis. Graduates from the Communications Media Department will have an understanding of the dynamic relationship between the needs of clients, the needs of audiences, and the capabilities of the medium they use to create their messages.

Goals

Communications Media graduates are:

- Capable of professional work in their area of emphasis
- Capable of producing technically and aesthetically accomplished media work
- Capable of media work that communicates effectively to the target audience
- Capable of applying critical thinking within their concentration

Game Design Program Objectives

The objectives for the program in Game Design are as follows:

The Bachelor of Science in Game Design presents an opportunity for students to develop skills related to the planning and design of games and interactive media. Students will explore game design and development, art and visual design, computer programming, 3D modeling & animation, level design, creative writing, and game studies. Other program classes and topics include: serious games, mobile platforms, history of games, and aesthetics.

This program of study will prepare students for careers in the game industry and related fields. Opportunities beyond the classroom include study abroad programs, professional capstone projects, game partnerships with clients, and internships. Game design blends a professional education with liberal arts & sciences within its curriculum by drawing on and preparing students to succeed in a diverse range of course offerings, including Computer Science, Art, and English Studies.

Student Learning Outcomes

Game Design students will, through a combination of required courses and electives, be exposed to and attain competency in the following concepts, practices and skills.

- Analytical understanding of games, gameplay, and game design
- Foundations in visual art and creative writing
- Principles of game logic and programming
- Industry-standard game engines and software

- Team-based iterative design process
- Games as media of communication and aesthetic expression

Student competency in these objectives will be assessed through key courses, the internship preparation process, and the internship itself.

Game Design Vision Statement

The Game Design program's vision statement defines its values and goals.

> The Major in Game Design – the first of its kind in a public institution in the Northeast – seeks to make the methods and tools of game design and development accessible to everyone. We strive to produce strong game creators with robust skill sets, able to work independently or in productive teams to create powerful, thought-provoking games with solid gameplay mechanics, unified aesthetics, and engaging stories.
>
> Students learn core concepts of game design, foundations of visual art, and fundamentals of game logic and programming. They learn to design games by creative brainstorming, problem-solving, iterating, and focusing on the player. They learn to develop artistic concepts into fully realized 2D and 3D art assets based on solid research and art foundations.
>
> Students build proficiencies with current software, platforms, hardware, and programming languages, and anticipate learning new tools as needed. They are eager to explore the problems and possibilities inherent in new forms including mobile, VR, augmented reality, or forms not yet imagined.
>
> Students learn to consider games through historical, social, aesthetic, and theoretical lenses, and to develop a sense of civic and global responsibility through the study and practice of serious games. They transcend aesthetic, formal, mechanical, and convention limitations to design excellent games with personal vision.
>
> Students develop skills in managing time, resources, and personalities by working towards a common goal with their production teams. They learn to manage, playtest, critique, troubleshoot, and release game projects that create memorable experiences for players. And they promote their achievements in order to expand opportunities for their games and themselves.
>
> Students also work beyond the traditional classroom. Opportunities include study abroad programs, professional capstone projects, and internships. Starting in Spring 2016, we have run four faculty-led programs in which Game Design students & faculty traveled to Japan to visit game studios and academic programs.

3. Relationship to the University Vision, Mission, & Strategic Plan

The Mission, Vision, and Strategic Plan of Fitchburg State University are described below

> **University Mission**
> Fitchburg State University is committed to excellence in teaching and learning and blends liberal arts and sciences and professional programs within a small college environment. Our comprehensive public university prepares students to lead, serve, and succeed by fostering lifelong learning and civic and global responsibility. A Fitchburg State education extends beyond our classrooms to include residential, professional, and co-curricular opportunities. As a community resource, we provide leadership and support for the economic, environmental, social, and cultural needs of North Central Massachusetts and the Commonwealth.

The Game Design program contributes to the University's mission in the following ways:

- Game Design *blends a professional education with liberal arts & sciences* within its curriculum by drawing on a diverse range of course offerings, including Computer Science, Art, and English and Communications Media.
- The program *extends beyond the classroom to include professional and co-curricular opportunities* in the form of internships, practicums, and serious games partnerships, such as with the Freedom's Way National Heritage Area.
- The program provides *leadership and support for the economic needs of the Commonwealth* by training students to participate and to succeed economically in the successful and growing digital games industry in Massachusetts.

- 80-85% of students in the Game Design program come from in-state, which aligns with the University's mission to support the economic, social, and cultural needs of North Central Massachusetts and the Commonwealth. (see Appendix 1)

> **University Vision**
> Fitchburg State University will be nationally recognized for its excellence in teaching and learning in current and emergent fields, for its commitment to transforming lives through education, and for its dedication to public service. In order to achieve this, we will:
>
> - Prepare students for a global society through curricular innovation and program development
> - Achieve academic excellence by investing in our faculty and librarians in their pursuit of knowledge, professional competency, and scholarship
> - Employ innovative uses of technology in the library and across our campus to maximize student learning
> - Create a culture of diversity to meet the needs of the region and enhance the personal and academic lives of the university community
> - Build partnerships within our community to provide real-world opportunities for our students and collaborative solutions to community issues.

The Game Design program is fully committed to the University's vision, especially its focus on excellence in teaching and learning in current and emergent fields.
The Game Design program contributes to the University's Vision in the following ways:

- The program fosters the development of skills critical to adapting to an ever changing technological and knowledge-based society.
- The program *employs innovative uses of technology* across courses, in student work and learning, and in our game lounge & library.
- The program *prepares students for a global society* through curricular innovation & program development, by fostering civic and global responsibility through serious games and game theory courses.
- The program *builds partnerships within our community to provide real-world opportunities for our students*, through pairing with MassDIGI and game studios, and through the capstone program.

University Strategic Plan

Fitchburg State University's Strategic Plan 2020-2025 emphasizes student success as its organizing principle, and focuses upon Fitchburg State students in all majors and in all divisions of the university. The Strategic Plan identifies four major Goals for the University, and specific objectives and actions to help the University meet these goals.

1. Forge innovative paths to knowledge acquisition, career readiness, social mobility, and lifelong learning
2. Become a model student-ready university and narrow the achievement gap
3. Be an engine of social, economic, civic, and cultural development in our city and region
4. Establish inclusive excellence, innovation, and environmental stewardship as signature strengths
5. Assert our distinctive value proposition and institutional learning outcomes boldly and widely
6. Steward physical and financial resources responsibly and navigate a path to long-term organizational sustainability

Our 2012 Game Design program proposal supported the then-current University Mission, Vision, and Core Values. The University approved a new Strategic Plan in 2020, and we will work to align the Game Design program's goals & objectives with these new goals, objectives, and actions of the new Strategic Plan. Broadly speaking, however, the Game Design program supports the current Strategic Plan through the following goals:

Goal One: Forge innovative paths to knowledge acquisition, career readiness, social mobility, and lifelong learning - Strategy 2: Establish a learning environment in which academic and

co-curricular programs work in synergy to offer applied learning experiences that prepare students for purposeful personal and professional lives.

Goal Five: Assert our distinctive value proposition and institutional learning outcomes boldly and widely - Strategy 2: Assert Fitchburg State's approach to integrating high-quality professional programs with strong liberal arts and sciences studies as a key University differentiator that also differentiates our graduates.

4. Overview of Program

The Game Design program includes the B.S. in Game Design, and the Game Design Minor. The Major is a big one in terms of credits (60) and in diversity of requirements, including core courses, specialization, electives and a capstone. The program balances flexibility and rigor allowing for specialization while requiring meaningful interaction with all facets of game design.

We strive to provide students with broad experience in all aspects of game design & development, and have provided a flexible curriculum structure that allows them the freedom to craft an educational experience that is as broad or deep, as theoretical or technical, as they would like. It is our intention that all Game Design students build a foundation in design, art, programming, and game studies. They should be able to create meaningful games with compelling art and innovative mechanics, both solo and in teams.

The Game Design major is 60 credits, with an additional 12 credits of LAS requirements, including Computer Science 1 & 2, and Drawing. The core Game Design classes -- Elements of Game Design, Intro to Game Art, Game Design Workshop, Level Design, 3D Game Development, and Advanced Game Workshop -- prepare students to build game design & development proficiencies and to work in teams to organize, design, develop, and publish games. History of Interactive Media and Games and Game Studies Seminar provide structure for thinking about games through a range of scholarly lenses including history, theory and aesthetics.

In upper-level courses, students are expected to take on more specialized and responsible roles. To this end, students are advised to take courses that will help them develop skills in one or more specialization areas. The major includes an elective structure that requires students to take courses in four Specialization areas: design, art, programming, and writing. An additional four electives can be fulfilled with any combination of courses in GAME, COMM, THEA, or TETA courses, which highlights integration with the Communications Media department & major. Students can also supplement these departmental offerings with a selection of courses from music, art and computer science.

This flexible structure allows students to create a customized program of study in order to explore diverse interests, to more deeply pursue a specialization, or to augment their game

work with a Communications Media concentration such as Graphic Design, Film/Video, or Professional Communication.

The program requirements for the B.S. in Game Design are as follows. Course descriptions can be found in Appendix 4: Course Descriptions.

B.S. in Game Design:

Required Liberal Arts & Sciences Courses (12 credits)

All Majors in Game Design must complete the following LAS requirements:

- ART 1400 - Drawing 3 cr
- COMM 2003 - History of Interactive Media and Games 3 cr.
- CSC 1500 - Computer Science I 3 cr.
- CSC 1550 - Computer Science II 3 cr.

Game Design Core Requirements (24 credits):

All Majors in Game Design must complete the following core requirements:

- COMM 1105 - Introduction to Communication and Media Studies 3 cr.
- GAME 2000 - Elements of Game Design 3 cr.
- GAME 2200 - Introduction to Game Art 3 cr.
- GAME 3000 - Game Design Workshop 3 cr.
- GAME 3030 - Game Level Design 3 cr.
- GAME 3060 - 3D Game Development 3 cr.
- GAME 3500 - Advanced Game Workshop 3 cr.
- GAME 4000 - Game Studies Seminar 3 cr.

Specialization Electives (12 cr.)

All majors in Game Design must take at least one course from each of the following Specialization areas.

A. Game Design (Choose One)

- GAME 3003 - History by Design 3 cr.
- GAME 3005 - Mobile Game Design 3 cr.
- GAME 3040 - Virtual Reality Development 3 cr.
- GAME 3050 - Serious Games 3 cr.
- COMM 3304 - Interactive Media Project Design 3 cr.
- GAME 3510 - Contemporary Issues in Games 3 cr.

B. Game Art (Choose One)

- ART 2200 - Life Drawing 3 cr.

- ART 3300 - History of Architecture 3 cr.
- ART 3500 - History of Modern Architecture 3 cr.
- GAME 2020 - Concept Art for Game Development 3 cr.
- GAME 3070 - Intermediate Game Art 3 cr.
- GAME 3075 - Advanced Game Art 3 cr.
- GAME 3080 - 3D Animation 3 cr.

C. Game Programming (Choose One)

- CSC 1900 - Discrete Mathematics 3 cr.
- CSC 2560 - Systems Programming 3 cr.
- CSC 3560 - Mobile Application Development 3 cr.
- CSC / GAME 3650 - Game Programming 3 cr.
- PHIL 1100 - Logic 3 cr.

D. Game Writing (Choose One)

- COMM 3470 - Document Design 3 cr.
- ENGL 3510 - Fiction Writing 3 cr.
- GAME 3010 - Game Narrative Design 3 cr.
- THEA 3035 - Playwrighting 3 cr.

Electives (12 cr.)

In consultation with their advisor, students select four courses from the Specialization Electives above, from the list below, or from GAME, COMM, TETA, or THEA courses.

- GAME 2001 - Games and Arts in Japan
- ART 1600 - Design 3 cr.
- ART 1650 - Three-Dimensional Design 3 cr.
- ART 2150 - The Art of Puppetry 3cr.
- ART 2250 - Intermediate Drawing 3 cr.
- CSC 3200 - Programming Languages 3 cr.
- CSC 3500 - Object Oriented Programming 3 cr.
- CSC 4210 - Computer Graphics Programming 3 cr.
- MUSC 1400 - Introduction to Music Technology 3 cr.
- MUSC 3760 - Film Scoring 3 cr.

Professional Capstone Requirement (12 cr.) (Choose One)

The professional capstone requirement may be fulfilled by Game Studio or Internship; both are full-time, semester-long pre-professional experiences. Qualification for Game Studio / Internship includes the development and defense of a professional portfolio

before a faculty committee, so students should begin early in their academic careers to prepare and maintain a strong portfolio of their work.

- GAME 4100 - Game Studio 12 cr., or
- COMM 4880 - Internship 12 cr.

Minor in Game Design

The Minor in Game Design presents an opportunity for students to explore game design and development, while maintaining their Major of study. Requirements are as follows.

> The Game Design minor is open to students who have an overall GPA of 2.5. Students may **NOT** take courses in the minor until they have been accepted.
>
> 18 credits are required. All students must complete:
>
> **Required**
>
> - GAME 2000 - Elements of Game Design **3 cr.**
> - GAME 2200 - Introduction to Game Art **3 cr.**
> - GAME 3000 - Game Design Workshop **3 cr.**
>
> **Plus three of the following:**
>
> - COMM 2003 - History of Interactive Media and Games **3 cr.**
> - GAME 3010 - Game Narrative Design **3 cr.**
> - GAME 3030 - Game Level Design **3 cr.**
> - GAME 3050 - Serious Games **3 cr.**
> - GAME 3060 - 3D Game Development **3 cr.**
> - GAME 3500 - Advanced Game Workshop **3 cr.**
> - GAME 3510 - Contemporary Issues in Games **3 cr.**
> - GAME 4000 - Game Studies Seminar **3 cr.**

Breadth vs. Depth in the program

While our flexible curriculum structure works well for many of our students, a disadvantage we have noted is the diminished incentive for students to pursue greater proficiency in a sub-discipline such as art or programming. This means that in upper level courses, we often have students who have not demonstrated clear proficiency that can be applied to a team-based production. We are also unsure how to address the difficulties found by students who are not technically-oriented, who have difficulty implementing more rigorous aspects of the art pipeline or – as noted above – who struggle with programming for games.

In contrast, students with preconceptions about industry expectations often desire to over-specialize; for instance, students who want to be game artists find that they are not getting the equivalent of a BFA with its rigorous foundations classes, students who see themselves as game programmers are not learning upper level game programming techniques such as C++ or

AI programming, and there are no options for advanced courses in level design, systems design, etc. The desire on the part of alumni for more depth in specialized areas is reflected in the Alumni Survey (Appendix 3), though we also hear this from students. We do our best to manage the expectation that a broad-based experience will better prepare them for a changing field, but the student & alumni attitude is still prevalent.

5. Internal Demand of the Program

Game Design is considered a professional major at Fitchburg State University and does not offer Liberal Arts and Sciences (LA&S) service courses. The majority of Game Design courses are available to only students with a declared major or minor in Game Design.

COMM 2003 History of Interactive Media & Games, originally called History of Interactive Media, was designed just before the implementation of the Game Design program, and was initially meant to address a need for a media history course for each of the concentrations which make up the Communications Media major. In this case that concentration was Interactive Media. That concentration was shuttered when the new Game program was established and so COMM 2003 was folded into the new curriculum. The course remains open to Comm Media students but the majority of the students who take it are Game Design majors.

Any GAME course can be taken by any Communications Media student and vice versa provided they meet the prerequisites (which in the case of some advanced courses can be a daunting series of required courses). A small but significant number of COMM majors take GAME classes as part of their “Phase III” electives, a cluster of 12 credits which can be taken across COMM, THEA and GAME courses. When the Game program was initially proposed it was important to both the designers of the program and to the rest of the department that there be cross-pollination between the two student populations.

In 2014, in response to the success of our programs, the Computer Science department created a concentration in Game Programming, which requires, in addition to the core Computer Science curriculum, three Game Design courses: Elements of Game Design, Intro to Game Art, and Game Design Workshop. For the last 3 years (AY18, AY19, AY20), the CSC Game Programming concentration had 30-33 students enrolled, which has a moderate impact on class enrollments and rotation.

Dr Elise Takehana and Dr J.J. Sylvia IV have recently proposed a new interdisciplinary and inter-departmental program (major and minor) in the Digital Humanities. This program will make use of some GAME classes and promises to be an exciting option for students who want to study and make games but who don't want to specialize in game production as Game majors. GAME courses proposed to be included in the new program include: GAME 2000 Elements of Game Design, GAME 2200 Introduction to Game Art and GAME 3000 Game Design Workshop.

Levels of non-Game students in courses will need to be monitored to meet the demand as it (may) arise. In the short term we do not plan to run more sections solely in order to

accommodate Communications, Computer Science or Digital Humanities students taking GAME courses. However, as noted elsewhere, the program is operating beyond its current capacity -- this year, there were not enough open seats in the program to admit transfer students for the Spring semester.

6. Program Goals and Actions since Inception

As this is our first program review, our actions are based initially on the Program Goals set during the initial program proposal.

Goal	Measurable Objective	Strategy for Achievement	Timetable
1. Hire qualified faculty for the program.	1. Hire one faculty member each year for the first 3 years of the program.	1. Collaborate with HR and Communications Media department to establish search committees.	1.In 2013, 14 and 15 AY, hire one faculty member to teach in the Game Design program each year.
2. Admit qualified students into the program.	2. Admit 32 qualified students to begin the program in the 2014 AY and admit an additional 32 students each year thereafter.	2. See information on marketing the program for strategies to be employed.	2. Admit 32 students for fall of AY14, an additional 32 for AY15, and an additional 32 students each year thereafter.
3. Create two computer labs, Game Workshop room and Game Library/Lounge.	3. Facilities for the new program including two computer labs, a Game Workshop room and Game Library/Lounge will be completed.	3. Faculty and VPAA to collaborate with the VP of Administration and Finance to coordinate timelines and specific facility design.	3. Facilities to be completed during the 2013 AY and following summer.
4. Establish internship sites for students.	4. Each year for the first 3 years, a minimum of 20 internship sites will be established for students in the Game Design program.	4. Faculty teaching in the program will work with the Internship Coordinator in the Communications Media department to establish sites.	4. Establish 20 sites in AY 14, another 20 sites in AY 15 (the first year students will be completing internships) and another 20 sites in AY 16.
5. Perform a program review of the Game Design program after 5 years (AY18), and every 5 years thereafter.	5. Using existing comprehensive program review criteria, the department will complete a self-study of the program and an expert external to the university will assess the program in 2018 and every 5 years thereafter.	5. VPAA to add Game Design to the program review rotation. Director of Assessment to work with the department to establish assessment methods.	5. Initial program review in AY 2018 and every 5 years thereafter.

Our responses to these Program Goals are as follows:

1. Hire Additional Faculty

As stated in our Program Goals, we hired three additional faculty members during the first three years of the program. Associate Professors Jonathan Amakawa, Les Nelken, and Britton Snyder joined our existing faculty in 2013, 2014, and 2016 respectively. The addition of three new faculty has brought different perspectives and allowed us to align ourselves with their professional, artistic, and academic experience.

2. Admit Qualified Students into the Program

The Program Goal was to admit 32 students the first year, and an additional 32 students each year thereafter. As you can see, we more than exceeded this goal even in our first year, with 37 incoming freshmen and transfer students.

Game Design Program Trend Data

Day-School

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Number of incoming freshmen majors	24	32	46	39	42	44	40	
Percentage of incoming freshmen class4	2.97%	4.35%	5.85%	5.11%	5.56%	6.10%	5.85%	
Number of incoming transfer majors	13	6	5	4	7	13	12	
Percentage of incoming transfer class4	2.94%	1.38%	1.23%	0.88%	1.59%	3.13%	3.93%	
Number of Minors	4	8	10	11	10	13	15	

In AY 2016, as a condition for hiring our third new faculty member, the administration raised our target Admissions enrollment to 40 students. This enrollment increase was not in the original Program Goals, and was not accompanied by additional faculty hires or budget increase. We have exceeded this new target every year. This has unfortunately created a situation in which faculty are overextended: Each faculty holds in excess of 30 advisees, we are under pressure to oversubscribe classes, and we have trouble supporting students looking for specialty areas.

3. Create Two Computer Labs, Game Workshop Room, and Game Library/Lounge

Two computer labs and Game Library/Lounge were created. The Workshop room became a combination Motion Capture and VR studio.

Classroom Upgrade - CCS Presentation System	$43,224
Equipment Orders	$253,665
Software Orders	$58,175
Instructional Materials - Games, consoles, peripherals	$5000
Marketing	$5000
Total	$364,950

4. Establish Internship Sites for Students

The Program Goal was to establish 20 internship sites for each of the first three years of the program. As noted earlier, when we designed the major in 2012, we included the 12 credit *COMM 4880 Internship* as a required capstone experience. It seemed natural: the Communications Media major had successfully placed interns in multiple concentrations for the past 30 years. External evaluators warned us that it would be difficult to find meaningful internships for students in the game industry, so we included a provision for a "qualified capstone of equal rigor" in our initial proposal, but we initially remained confident in our ability to secure internships. After two years, having faced little success placing students in Game internships, and nowhere near our Program Goal of 60 established internship sites / 32 students per year, we concluded that we would need to formally provide an alternate capstone experience. Our resulting capstone, GAME 4100 Game Studio, is more aligned with other game design & development programs around the country. It is likely our most profound change since the development of the program.

5. Perform a Program Review
This Program Review (rescheduled from AY 2018 to AY 2021) fulfills our final Program Goal.

7. Program Initiatives and Changes since Inception

In addition to the direct responses to our Program Initiatives, the following changes were implemented since our program's inception.

New Courses

We successfully developed eight new GAME courses (including Game Studio Capstone) since our program began, in response to our perceived needs in the program as well as new opportunities for international studies and interdisciplinary work.

Games & Arts in Japan
Game and Arts in Japan is a study abroad-centered course on Japanese games and arts, created by Prof. Amakawa in response to student interest and with the support of the International Studies department. The course is unique among Universities with Game Design programs in its exploration of Japanese arts, culture and its Game Industry. The class explores contemporary Japanese games, arts and culture with an emphasis on the three pillars of Japan's modern culture--video games, Anime and Manga. These subjects are examined in the context of the country's tradition of design, visual arts and culture in order to gain a better understanding of Japanese game art aesthetics. The course culminates with a 2 week faculty-led trip to Japan that includes visits to Japanese video game companies in Tokyo and Kyoto including game studios Toy Logic, CyberConnect2, Gree and Bexide. Visits also include meetings with Japanese game industry professionals, visits to universities with game design programs and numerous visits to artistic and culturally significant sites. The course ran every year from 2016-2019 and has taken 39 students to Japan. The course has attracted interest

from faculty and students beyond our University at schools such as Champlain College and NYU. We plan to resume in 2022.

Mobile Game Design
Mobile Game Design addresses the absence of a dedicated course that specifically deals with design and development for mobile devices and platforms. Though students do have opportunities to build and test mobile games in their other classes, we have addressed this as a specific need in our program. In order to be competitive in the game industry, students must have the option to gain more experience designing and developing mobile-specific games. The skills and methodologies they learn can also apply to the creation of mobile apps of all kinds.

Virtual Reality Development
This course provides Game Design students with a focused opportunity to learn about virtual reality (VR) and get experience developing software content for VR. It is important for Game Design students to have exposure to this technology and what it promises because, even though VR is rapidly evolving, this is a new form of media in which a lot of “firsts” are still possible, similar to the early days of film. Also, for future employability on VR projects, the barrier to entry tends to be lower for those that have some VR development experience.

Concept Art for Game Development
Concept art is a key phase in game development where characters and environments are visualized. This course will teach foundational concept art skills including digital and traditional sculpture and how to apply this to conceptualizing work for games. Currently, our program has classes focused on 3D Modeling and Animation skills, but they do not allow for sufficient time to teach 2D texture painting, preliminary conceptual artwork and 2D game development such as sprites and 2D gaming for mobile development, all important areas of study for students interested in creating game art. The Game Design program needs a long term solution to this gap in our course offerings. Many comparable Game Design programs have courses focused on 2D and foundational art skill geared towards game development. The addition of a Concept Art class is critical to the success of the Game Art portion of our program.

Advanced Game Art (originally 3D Modeling II)
This course addresses an absence of a character modeling and advanced sculpting class in our current program for Game Design students who are pursuing game art. While Intermediate Game Art (originally 3D Modeling) has been successful in teaching foundational 3D Modeling skills, it does not allow for sufficient time to teach advanced 3D sculpting skills in soft surface and character modeling as well as the additional software programs used in these areas. These are important areas of study for students interested in pursuing a game art specialization.

History by Design
In 2017, Game Design Prof. Jon Amakawa and History Prof. Joe Wachtel created this team-taught interdisciplinary class. The class engages students in Digital History projects by combining the practical application of game design skills and theory with a rigorous approach to historical research and interpretation. The course has served as an early model for

cross-disciplinary and team taught classes at Fitchburg State University. According to the University's strategic plan, one of the University's Strategic Values is to:

> … broaden opportunities for faculty to teach collaboratively, including greater institutional support to promote more interdisciplinary team teaching opportunities. These opportunities could begin by building learning communities that share bridge assignments.

Game Programming
This course was created by the Computer Science department in consultation with Game Design faculty, and cross-listed as a GAME course. Game Programming provides Game Design students some fundamentals in game programming techniques, tools, and related algorithms, balancing high-level production, architecture, and engineering concepts with programming and development tasks. It also serves as a high level elective course for students majoring in Computer Science and Computer Information Systems.

Interdisciplinary Programs

Our faculty recognize that Game Design as a field and practice is inherently interdisciplinary and that our students benefit from exposure to aligned areas of study, particularly in the areas of Serious Games and Digital Humanities. Game Design has roots in Art, Computer Science, Sociology, English Studies and Humanities. Students have the opportunity to fulfill some of the program requirements with courses from Art, Computer Science, English Studies, or Music.

Our faculty come from disciplines equally varied including the visual arts, architecture, sociology and history. During the review period, Fitchburg State Game Design faculty have engaged in interdisciplinary collaboration and program development with other departments and faculty on multiple fronts. They have leveraged the program's position within a broader Liberal Arts and Sciences University, to expand the study and application of game design beyond entertainment.

In addition to the creation of new interdisciplinary courses, such as History by Design, this has resulted in supporting faculty and student collaboration on faculty-led research projects. An important benefit of the Game Design major existing within a University that possesses Liberal Arts and Science programs is the opportunity to explore areas of interdisciplinary research.

In 2017, Game Design students were recommended for a research project for Prof. Lena Ficco in Biological Psychology. The students developed a virtual environment application that Prof. Ficco used to run experiments on how contraceptives impact a person's ability to navigate and wayfind.

In 2016, Game Design Professors Les Nelken and Jeff Warmouth and Game Design students collaborated with the Industrial Technology Department's (ITEC) Professor Nirajan Mani on the creation of an educational game for training in construction procedures and OSHA safety guidelines. The project generated coursework for ITEC students and an independent study for Game Design majors. It also supported a 12-credit Professional Internship for a Game Design major.

Game Design Faculty regularly participate on University-wide committees and discussion groups in order to facilitate multidisciplinary collaboration. This has been in line with the University's Strategic Plan as described below.

> Increase collaboration in academic programs through team teaching, learning
>
> communities, interdisciplinary course development, and research opportunities and support appropriate high-impact learning experiences, including opportunities in academic and experiential settings. --Strategic Plan 2015-2020

In 2015 Game Design Prof. Jon Amakawa participated in a faculty discussion group sponsored by the University's Center for Teaching and Learning on Games and the Liberal Arts and Sciences and Multidisciplinary Collaboration.

Service Learning & Community Outreach

In terms of community outreach, Game Design faculty and students have worked with regional arts and cultural heritage organizations including the Fitchburg Art Museum, the Freedom's Way National Heritage Area, the Museum of Russian Icons and the Battlefield Road US National Park site. In addition, faculty have engaged in outreach initiatives with regional primary and secondary school educators through professional and extended campus workshops including a 2017 Medieval Studies Workshop for the Center for Professional Studies and Extended Campus Programs and a workshop at the 2016 Museum Association of NY Conference in Lake Placid. We believe this outreach serves the purpose of expanding awareness within our community for the emerging discipline of Game Design and its applications. In addition, this outreach enables students and faculty to gain valuable professional experience and utilise the field to address needs in the real world.

In 2016, Prof. Amakawa's Serious Games class worked with the Museum of Russian Icons, in Clinton MA, to create public-facing interpretive kiosks. One of the team projects is now installed permanently to aid visitors in learning about a series of icons displaying the annual saint days in the Orthodox calendar.

In 2018 and 2019, a game design class worked with the Freedom's Way National Heritage Area and Minute Man National Historical Park (MMNHP) to develop "Living Perspectives Along Battle Road" an historical augmented reality (AR) mobile app prototype seeking to tell the story of the Battles of Lexington and Concord.

In 2020, faculty arranged for a student to design animated promotional material commemorating the centennial for the 19th Amendment (which granted women the right to vote) for the Freedom's Way National Heritage Area.

In 2015, faculty arranged and supervised student Game Design internships with the Fitchburg Art Museum. Students worked with the Director of Education to create an educational interactive for the Museum's Learning Lounge.

Prof. Les Nelken has been active in engaging Fitchburg State students and faculty in the Boston area game community through his work as a long time organizer and board member of Boston Post Mortem (the Boston chapter of the International Game Developers Association). As a result, Fitchburg State students, faculty and alumni are regular attendees at events and have deepened the program's connections with the area's game developer community.

C. Assessment

1. Program Inputs

1a. Program Reputation

Distinguishing Characteristics

Our program is the first Game Design degree in a four-year public institution of higher learning in New England. Other four-year degrees in game design & development in the region are located solely in private schools (Worcester Polytechnic Institute, Becker College, Northeastern, Champlain College, etc). Given the significantly higher tuition and fee rates at private institutions, a program housed in a state institution (especially one whose core values include accessibility and affordability) makes participation in a game design program financially accessible to a broader & more diverse population.

A distinguishing feature of the major is the full-time, semester-long capstone program, which can be fulfilled by either an **Internship** or **Game Studio**. Both are 12-credit, full-time, semester-long pre-professional learning experiences. Candidates must successfully complete a Qualification Program in the semester immediately prior to capstone, which includes mandatory attendance at a series of seminars, and the development and defense of a professional portfolio before a faculty committee. Capstone placement is competitive and based on academic performance, faculty recommendations, and performance in the Qualification Program.

Discipline Specific Best Practices

Game Design & Development is a relatively new academic discipline. Established programs have only been in existence for a decade or two, at most. As an industry profession, one of the hallmarks is chasing the constantly changing technology & market (software, hardware, and means of distribution/monetization). As such, there is no clearly defined or written set of standards or best practices. The Independent Game Developers Association (IGDA) developed a framework in 2003, but has not been revised since. Similarly, the Higher Education Video Games Alliance (HEVGA) has indicated work on a framework, but it has not been made publicly available.

Thus, our best practices for teaching game development come from the experience of faculty (in other academic programs, in industry, and in their research), looking at other programs, and

discussion with our peers at other institutions. When we initially created our curriculum, Samuel Tobin & Jeff Warmouth analyzed the curricula at several leading programs, including USC, RIT, Champlain, WPI, and Becker College. We developed a program that would be sustainable at our institution while retaining the overall best practices gleaned from these programs. Here are our approaches to these discipline-specific best practices.

The Game Design program strives to match the expectations of industry while also keeping the student education broad and versatile. The core game design curriculum focuses on game creation with electives designed to help students hone the skill necessary to successfully participate in a game development cycle. In addition to the game design courses, students are required to take liberal arts and science courses, leading to a graduation outcome preparing the graduate in a versatile manner should they choose not to pursue a career in game development.

Tools

Using game industry-standard tools is foundational to the program - it is important that students build proficiency in the same tools that are used by professional game developers and game studios. A game development studio will expect job candidates to have a working knowledge of these tools, it streamlines a candidate's acclimation to a studio's production processes and pipeline.

Our labs and the Game Studio capstone facility have both Windows PC and Mac computers, each with a range of industry-standard tools installed. The workstations are set up with two high-definition monitors per workstation (or one monitor plus a Wacom Cintiq graphics tablet whose display serves the same purpose). Using multiple monitors is a screen "real estate" efficiency-optimizing arrangement that is found in most game companies due to the numerous menus and windows that must be visible while working. Most professional game development is done using the Unity and Unreal game engines, therefore these two game engines were adopted by the game design program. The 3D and 2D art production tools are the ones currently in wide usage by most game development studios: Maya, 3ds Max, Photoshop, Substance and ZBrush, as well as the aforementioned Wacom Cintiq pen displays. As well, hardware peripherals such as Apple iPads and Android tablets used for mobile development projects, and VR hardware (HTC Vive, Oculus Rift and Oculus Quest) are current with industry-standard development needs.

Game Art

Our approach to teaching students to develop their game art, includes both 2D & 3D art foundations. Students apply these towards modeling, texturing, materials, animation, rigging and concept art applied towards producing games. Our approach incorporates practices such as group critique, creative exploration and iteration. Game art, while employing new computer-based technology, is nonetheless a creative and expressive medium that can benefit from aspects of traditional visual art mediums such as drawing and painting. For this reason we emphasize practicing other art forms both within our game classes and as requirements outside

of these classes, through required art electives. In addition to our growing number of game art course offerings, our students also avail themselves of fine arts classes in the Humanities Department such as figure drawing, painting, and even puppet making. We believe that these classes are essential to a game art education. Our art approach aims to cultivate game artists who can fully explore games as a creative and artistic medium-- one that offers each artist a chance to develop their own creative voice and vision.

A number of our game art classes emphasize the importance of design research in creating compelling and detailed game art. This is at times accomplished by assigning students diverse yet specific settings for art projects such as making a game set in New York City in the 1970s, a present-day Rio Favela, or a Kabuki Theater. Students are often required to research and collect reference images and explore previously unfamiliar content.

When teaching specific game art techniques, we aim to show students how to integrate game art into game engines so that they understand how their work fits into the larger game design production process. For example, learning how to import 3d models and textures into a game engine.

Theory

Theory courses, specifically History of Interactive Media and Games and Game Studies Seminar are different from our other required courses in that students don't make games in them. Rather, in these courses students read, discuss, research and write about games, game history and the academic study of games. This kind of thinking critically about games, players and about what games have been, are today and might yet become is not an afterthought but rather is central to game design and to our game design program. Critical thinking is not only developed in these writing and discussion heavy courses. Thinking critically is central to the kind of problem solving which successful game design requires. In this way our theory courses differ from other courses but also serve the same overarching purpose.

Programming

It is crucial that our students are exposed to computational thinking, and proficiency with coding/programming in the context of game design. All of our students are required to take Computer Science I and II, in which they develop foundational knowledge common to all programming languages, and develop a basic working knowledge of Python and Java. In Game Design Workshop, students develop a level of proficiency with the Unity game engine and the C# scripting language such that they can design, develop, and publish solo games. In Game Level Design, students are introduced to the Blueprint visual scripting system in Unreal, though the primary focus of the course doesn’t require them to reach a high level of proficiency. In upper-level CS courses including Game Programming, other languages & frameworks are explored. Students interested in developing these proficiencies further are encouraged to pursue a Computer Science minor.

Despite what sounds like an excellent framework, our integration of programming within the Game Design program itself needs to be improved. This is largely a resource issue: Jeff

Warmouth is the only Game Design faculty proficient with programming and confident to teach it, which has limited our ability to reinforce game programming at various levels of game development. Furthermore, while the fundamental principles of computer programming are universal, the methodologies and objectives of Computer Science as a discipline – at least as taught at Fitchburg State – are fundamentally distinct from those of game development. Game Design students feel a disconnect between their required Computer Science courses and programming for games, Computer Science faculty are not interested in or equipped to teach programming in the context of developing & publishing games, and there are not enough Game faculty prepared to teach game programming.

Consequently, Game Design students struggle with programming more than they do with other proficiencies. We did not gather grade data, but we suspect that Game Design student grades in Computer Science 1 and 2 support this assertion, based on conversations with advisees, students, and Computer Science faculty. In our 2020 Alumni Survey (see Appendix 3), students consistently ranked their "Understanding of Programming and Logic" lower than any other Game Design student learning objectives. In response to the question "Are there any classes you wish had been offered at Fitchburg State", 22 out of 60 alumni listed some variant on game programming, including advanced game programming, programming for Unreal Engine, or programming taught by Game professors. Several alumni noted that they struggled in CS classes but did fine when coding in Game classes, or lamented that CS classes did not focus on languages, processes, or optimization related to games.

This program deficiency could be improved by bringing on additional faculty with a game programming background (full time or adjunct). This would allow the program to run classes on visual scripting, C++ programming for Unreal Engine, or even game-focused alternatives to Computer Science 1 and 2, as was suggested by Computer Science faculty.

Project Management & Team Communication

Developing an ability to work constructively and collaboratively in groups is an essential skill. With few exceptions all video games, and most other software products, are created by teams. Knowing how to collaborate and work well on a team is a crucial "soft" skill. Increasingly, these traits are recognized and sought by companies and industries, including those primarily known for valuing "hard skills." While hard skills are of course important to develop, a 2018 LinkedIn study indicated 57 percent of leaders say soft skills are more important than hard skills. These include those key to good teamwork - communication, collaboration and time management – (Paul Petrone, LinkedIn, The Learning Blog, Jan. 2, 2018). Most of the FSU Game Design program's courses include group projects which emphasize these soft skills and they are part of every student's assessment.

Working in teams naturally requires good communication skills, but in today's workplace also requires use of synchronous and asynchronous communication and project management collaboration tools such as Slack, Trello, Discord, and source control protocols such as GitHub. Slack is a business communication platform Trello is a web-based list-making collaboration tool that organizes projects into boards. Discord is a less-formal communication platform, originally

designed for gamers to chat with each other and stream games, but is also widely used for communication and collaboration by small game development teams working on game projects. Having experience with these online tools helped our Game Design students readily adapt to online course delivery and remote working circumstances that the COVID-19 pandemic thrust upon the world and our campus in mid-semester of spring 2020. The post-pandemic business world is sure to integrate more remote work into practice and the ability to work effectively that way should be a plus for job candidates.

Over the last fifteen years, Agile project management/planning methodology has been widely adopted by the game industry. Agile is taught within the Game Design program and used in group projects, preparing students for when they encounter it in a professional setting.

Networking and Showcasing Student Projects

Networking is a core "soft" skill that is essential for success. Networking with game industry professionals is highly instrumental in how game developers make contacts and get jobs. The Boston area is fortunate to have a number of game industry networking groups and many of our classes require participation in a number of these monthly networking events. The experience and developing some comfort level in listening to and speaking with professionals has been beneficial for students.

Besides networking groups, the Boston area also hosts game industry conferences, such as the *PAX East* convention and *Boston Festival of Indie Games (BostonFIG)* conference. Other events which we encourage students to attend are *MassDIGI Made in MA*, *Boston Playcrafting,* and *New England Student Game Showcase (NESGDS)*. At most of the above events we arrange for student teams to showcase their game projects at an FSU table or booth.

We maintain an itch.io page to showcase student games, created in the Game Studio Capstone and other courses, from the various game jams we host, and independent projects. The address is http://fitchburgstate.itch.io. At this time we do not have a formal process. The Coordinator adds student games as appropriate to various collections.

Game Jams

In 2016, Prof. Amakawa led the charge to host Global Game Jam, which we have hosted annually, including the 2021 online edition due to the global pandemic. The Fitchburg State event has always been open to both the University's students and the wider community. Each year a small number of participants from outside of the University have consistently participated. Over the years, the University has contributed a considerable amount of resources and funding to running the event in the form of access to labs, equipment, facilities, refreshments and in kind faculty and staff participation. Our program believes that hosting the Global Game Jam provides a valuable opportunity to contribute to the community and spread awareness about our program and what we do. The event has garnered Fitchburg State University's Game Design program positive media coverage such as two articles in 2015 that covered the event in the Sentinel and Enterprise and a feature 2016 article in the Worcester T&G.

In fall semester 2019, the Game Design program added a Fall Game Jam event as a result of positive student feedback on the annual Global Game Jam events which only take place in spring semester, faculty recognition of the valuable experience students gain from these events, and the stated desire by students to participate in game jams more than once a year. Game Design faculty agreed to require Game Jam participation as part of course participation. We saw enthusiastic participation by students and alumni.

Putting Passion to Good Use

Lastly, all faculty encourage students to make games as personal projects outside of class, both as a means to develop skills and create portfolio content. Students of game design, as well as professionals, tend to be passionate about the subject matter. This kind of self-motivated, self-directed work is somewhat expected of those wishing to enter the game industry. Students who do this on their own or with teams, for *fun* and their sheer interest in making games, are on a highly promising track to success.

Congruence between course & program & future direction/needs of discipline

Balancing the anticipated future direction and needs of industry with current standards and practices is best addressed in our program through an emphasis on time honored core skills. Programming focused students are encouraged to pursue computer science to supplement their studies in Game Design, typically by advising them to add a Computer Science Minor. Students with an interest in the visual art or design side of game development are likewise encouraged to take supplemental visual arts courses, history courses, music courses, and to pursue a Minor where appropriate. Through developing an understanding of the core skill defining their chosen discipline, students prepare themselves for a long career where they can anticipate trends and change appropriately to stay relevant and up to date.

It is important for students to be aware of new technology and trends, and the University's Strategic Plan includes the directive to "make innovative use of developing technologies appropriate for students of the 21st century." Two such cutting-edge technologies, Augmented Reality (AR) and Virtual Reality (VR) have been added and integrated into the Game Design program. Augmented Reality, already accessible on mobile devices, was integrated first in Prof. Jon Amakawa's Mobile Game Design, Serious Games and History by Design courses. AR technology is sure to eventually become as pervasive as the smartphone and experience in developing AR applications will be an extremely important skill. When the FSU Game Design program was founded, commercially-available Virtual Reality (VR) technology was not yet on the horizon. When some of the prototype hardware was becoming available (Oculus Developer Kit 2) the Game Design program recognized the potential impact of this new form of media and invested in the hardware so that students could have access to the technology they otherwise would not have. When the first consumer-level VR headsets became available in 2017, the program invested in those as well and a new course, Virtual Reality Development, was created. Having experience with developing for these new technologies has already proven valuable to alumni seeking employment.

1b. Students

New Student Enrollment Trends

There are currently 178 Game Design majors -- approximately 45 per academic year. According to the Game Design Trend Data sheet (see Appendix 1), the Game Design program has so far managed to weather the overall trend of declining enrollments due to the shrinking population of college-aged students. Our original enrollment target set in our Program Goals was 32 students. This was raised to 40 students in AY16 by the administration in exchange for hiring our third new full-time faculty member (also in our Program Goals). Since that time, we have actually enrolled over 50 students in many years, thus we have been overenrolled every year with no additional faculty support.

Academic Year	AY 14	AY 15	AY 16	AY 17	AY 18	AY 19	AY 20
Incoming freshmen majors	24	32	46	39	42	44	40
Incoming transfer majors	13	6	5	4	7	13	12
TOTAL incoming majors	**37**	**38**	**51**	**43**	**49**	**57**	**52**
Enrollment Target	32	32	40	40	40	40	40
Exceeded Target	**5**	**6**	**11**	**3**	**9**	**17**	**12**

Qualifications

Enrollment at Fitchburg State is based on rolling admissions, with a priority deadline of December 1st. Students qualify based on a recalculated GPA, with optional test scores. There is no portfolio requirement.

Enrolled Student Profile

In AY2020, there were 178 Game Design majors and 15 minors. As a Massachusetts State University, the bulk of our student body are residents of the Commonwealth of Massachusetts, but 15-20% of our students are from out-of-state. About 25% of our students are non-caucasian, a trend that has remained relatively steady throughout our 7 years. In our first year, only 11% of the enrolled students were female. To address this gender discrepancy, we worked with the Admissions department in 2016 to develop programs geared towards recruiting incoming female Game Design students. As a result of this program, we managed to boost our female student enrollment above 20%, though the percentage has leveled off. Ultimately, we would like to see this get closer to 50%. We are not aware if the Admissions programs are still in place.

Academic Year	AY 14	AY 15	AY 16	AY 17	AY 18	AY 19	AY 20
Male	47	76	113	124	135	136	141
Female	6	11	18	29	37	41	37

TOTAL	53	87	131	153	172	177	178
% female	**11.3%**	**12.6%**	**13.7%**	**19.0%**	**21.5%**	**23.2%**	**20.8%**

1c. Faculty

The Game Design program currently has five full-time tenured or tenure-track faculty members:

- Associate Professor Jonathan Amakawa (tenured)
- Associate Professor Les Nelken (tenured)
- Associate Professor Britton Snyder (tenure track)
- Associate Professor Samuel Tobin (tenured)
- Professor Jeff Warmouth (tenured)

As noted above, Prof. Warmouth and Dr. Tobin created the Game Design program. To meet our initial program goals, our three additional faculty members were hired over the following three years: Jon Amakawa joined the faculty in 2013, Les Nelken in 2014, and Britton Snyder in 2015.

Full-time faculty members at Fitchburg State University teach a 4/4 course load. In addition, faculty are expected to maintain an active research agenda or creative practice, and engage in service to the University in order to meet the criteria established by the faculty union (MSCA) for tenure, promotion, and post-tenure review.

Faculty in the program hold a wide variety of terminal degrees, including Ph.D.'s and MFA's, and pursue a wide array of research interests. Additional information on faculty scholarship and service activities can be found in Appendix 7: Faculty Credential Table.

Game Design faculty at Fitchburg State unanimously value the importance of diversity within the program, in terms of representation among both faculty and students. We believe that a diverse body of game designers contributes diverse perspectives and therefore makes better games. We have strongly encouraged applicants from diverse and underrepresented backgrounds (minority, gender diversity and sexual orientation) when searching for new hires and will continue to do so. However, filling these positions has thus far been challenging. Since the program's initial inception in 2013, we have conducted three tenure-track searches which resulted in three faculty hires. One of the three hires was a faculty member with a minority background (mixed- race, Asian and white). Nonetheless, all of the hires have thus far been male. In each search, we received a small number of qualified female candidates, however, we have not yet been successful in hiring a female tenure-track candidate. Because the current Game Design industry as a whole, demographically skews male and white, the competition for hiring qualified underrepresented groups is acutely challenging.

While outside of the self study period, it should be noted that the major has recently made some progress in addressing faculty diversity. We have hired two adjunct faculty for the Spring 2021 semester-- a female instructor and a non-binary instructor.

FTE commitment by program

Game Design has 4.75 FTE. Dr. Tobin teaches .75 GAME and .25 COMM (note: that COMM course is required for Game majors). All other Game Faculty work a 1.0 FTE.

In addition to the full time faculty, faculty from other programs or departments (Communications Media, English Studies) do occasionally teach Game Design courses to fill a gap or Sabbatical replacement. So far this has not been with enough regularity to merit an FTE equivalent.

Game Design Coordinator

One faculty member serves as the Game Design Coordinator, which is an Alternative Professional Responsibility (APR) position compensated with a course reduction in Fall and Spring semesters (i.e. a 3/3 load). The Game Design Coordinator's responsibilities include: coordinate class schedules, rooms, and events; oversee the program budget and purchasing; manage Student Tech Assistants schedules and responsibilities; oversee maintenance of all equipment and facilities in coordination with Technology Department; act as a point of contact for current and prospective Game Design students; assist with student recruitment; manage the portfolio defense process in coordination with the Comm Media Internship Coordinator; and manage the loaning of equipment to students for remote use as needed. For the full APR description, see Appendix 9: Game Design Coordinator.

1d. Staff Support

The Communications Media department has four full-time staff members, two administrative assistants and two technical specialists, all of whom provide support to Game Design. In addition, we maintain Student Game Design Technical Assistants.

Administrative Assistants

Our administrative assistant team includes one full-time administrative assistant, Karen Valeri, and a 10- month, 25-hour per week administrative assistant, Samantha deManbey. As a large department with two majors, over 600 students, and 23 faculty members, both of these positions are essential. Both administrative assistants provide day-to-day support for the department chair, faculty, technical staff, and students. In addition, our full-time administrative assistant focuses on maintaining the department budget, purchasing and other financial transactions, while our 10-month administrative position assistant focuses on the maintaining department's social media pages and website and assisting with alumni outreach.

Technical Specialists

The department's technical staff members also assist in Game Design. Coelynn McInnch, an Instructional Media Specialist, provides technical support and supervises Work Study student workers. Paul Concemi, an Electronics Technician II, provides technical support to the Film/Video concentration and oversees the department's Trust Fund (or non-Work Study) student workers for the Game Design major. The budget for student workers is included in the

Communications Media Department budget, but not directly in our operating budget (See Appendix 11: Operating Budget)

Student Technical Assistants

When the program was initially proposed, budget was included for a part time (20 hour) Game Design Technical Assistant who would provide support to the program and the labs, and report to the Game Design Coordinator. For the first two years, this position was held by a part-time student, who maintained the position for a short time after graduation. However, due to the difficulty of filling a half-time position, and the University/Commonwealth policy which prevents a full-time student from holding a staff position, the position was converted to 40 hours of Student Trust Fund (i.e. non-Work Study). Students can work a maximum of 20 hours per week, so we typically hire 2-3 students who share duties.

We currently employ two of these Student Tech Assistants: Devon Hawley and Makayla Hicks. Their duties include maintaining lab facilities and equipment, recommending hardware, software, and game titles for purchase, training students & faculty on specialized equipment including mocap & 3D printers, checking out equipment to students, maintaining an inventory of games & hardware, keeping labs clean, and other related work. (See Appendix 12: Student Technical Assistants)

1e Resources

In 2013, our initial program setup budget was $364,950 (See Appendix 10: Starting Budget), which covered the creation of two new computer labs, each with 21 PC workstations (HP and @Xi) and 2 iMacs, and software including Unity, Unreal Engine, Adobe CC, Autodesk Maya & 3ds Max, ZBrush, etc. One of these labs was configured as an art lab, and included Yiynova pen displays (a budget alternative to the Wacom Cintiq). We outfitted the Game Lounge with consoles (PS3, PS4, XBox 360, XBox One, WiiU), HDTVs, and an extensive library of tabletop games & rulebooks. We purchased 16 iPads for mobile development & game research, and we configured a Motion Capture Studio with an OpenStage Motion Capture system.

Our current annual operating budget is $6985, which is a decrease from our initial 2014 operating budget of $8500, and has been level funded (or decreased) for the last several years due to institutional cuts (See Appendix 11: Operating Budget). Note that our operating budget per student drastically decreased from our 2014 numbers (from $8500 supporting 40 students to $6985 to support 178 students). All new software and hardware purchases, game titles, etc. must come from this annual operating budget, or by applying for Strategic Funding Requests.

Annual software maintenance licenses and regular computer lab refreshes (PCs, monitors, standard peripherals) are covered by the Instructional Technology Department. We had one major lab refresh in 2018-2019, during which all PCs & Macs in our two labs were updated to HP Z4 G4 workstations (c. $140,000).

We applied for and received several Strategic Funding requests, including $20,000 in 2015 to purchase motion capture components, Oculus development kits, and other peripherals, a 2019 upgrade of our budget Yiynova pen displays to industry-standard Wacom Cintiqs ($42,200), and a refresh of iPads ($4784).

Several years ago, Organic Motion, the company that developed our OpenStage motion capture system, went bankrupt and dropped all technical support for their products. Since that time, we have phased out motion capture in the studio, and purchased a portable Perception Neuron system. We have transitioned the Mocap studio into a flexible space primarily used as a space to set up VR. As noted above, we have invested in VR systems including HTC Vive and Oculus Rift and Quest systems (again, in small numbers through our annual operating budget). We have not run any VR courses since before the COVID-19 pandemic, but we plan to resume in 2022.

The addition of the Game Studio capstone course necessitated a dedicated space. For 3 semesters, we set up temporary labs in unused classrooms across campus, but in 2018-2019 we had the opportunity to configure a permanent studio space. The University had recently purchased a 1920's theater building on Fitchburg's historical Main Street, with storefronts and upstairs office spaces. Much of the upstairs was renovated to create a Game Studio suite, which visiting game industry pros have remarked feels like a real game studio. The studio is outfitted with 25 Z4 G4 workstations, 1 iMac Pro, Wacom cintiqs, and the space to co-work full-time for a semester. To create an interesting design feature to tie the building to our program, the architects solicited proposals from Game Design students to create a permanent ceiling mural. The resulting mural, designed by student Josh Rife with contributions from 5 other students, traces the history of game art styles, and is visible by pedestrians on Main Street.

2. Program Processes

2a. Curriculum

Process for Curriculum Development and Recent Activity

The Game Design major aims to constantly evolve to stay current with advances in technology and industry trends. Curriculum development is driven by the five full-time faculty, informed by observing & discussing deficiencies or weaknesses in the program, classes, or student portfolios; observing trends in game development and other academic programs; attending conferences and other professional development; and feedback from students & alumni.

Examples of recent curriculum development in response to new trends in the field include new courses such as Mobile Game Design and Virtual Reality Development. Courses that were introduced in order to provide opportunities for interdisciplinary study include Games and Arts in Japan and History by Design.

Other curriculum changes happen as a result of faculty noting a deficiency or agreeing that the program has a need. For instance, we noted a lack of upper level game art options for interested & capable students, so we developed Advanced Game Art (originally 3D Modeling II) and Concept Art for Game Development. 3D Modeling II became Advanced Game art to emphasize the full process of asset creation for game development, including teaching 2D art and texture painting, and not just advanced digital modeling/sculpting. Concept Art for Game Development was created to give the students more experience in design and foundational art skills. As noted in earlier sections, Game Studio Capstone was developed in response to a deficiency of viable internship sites.

In addition to new courses, we implemented several more nuanced changes, such as adjusting prerequisites, adding & removing LAS requirements, and restructuring the electives. A few examples include:

- Instituted a minimum 2.0 grade in certain core prerequisites, on observing student success in subsequent courses.
- Added Computer Science I as a prerequisite to Game Design Workshop, on observing that students with prior programming experience were more confident and successful.
- Added Logic as an option in the Game Programming & Logic elective category to provide an alternative for students who struggled with higher-level programming classes.
- Adjusted elective structure to make it easier to navigate and ensure relevance.

Once approved by the Game Design faculty, all curriculum changes must be reviewed through governance. In accordance with the MSCA collective bargaining agreement, the Communications Media department constitutes the Department Undergraduate Curriculum Committee (DUCC) each year. The DUCC makes a conscious effort to include committee members from each concentration as well as the Game Design major to ensure balanced representation from across the department. The MSCA collective bargaining agreement also requires two student representatives on the committee. The DUCC seeks broad representation from its student members, typically inviting two students from different concentrations/majors to join the committee. Likewise, when possible, the DUCC tries to include student members from underrepresented groups on campus. In 2016-2017, the DUCC included a Latino student, in 2017-2018 the DUCC included a transfer student, and in 2018-2019, the DUCC included a non-traditional student.

Curriculum and course scheduling are informed by our Four Year Plan of Study (Appendix 18) and Two-Year Course Rotation (Appendix 19).

Course Delivery Methods

Prior to the COVID-19 pandemic, nearly all Game Design Program courses met in-person, once a week for two hours and forty-five minutes. This type of course scheduling is beneficial for several reasons. It allows adequate time for software and equipment demonstrations, workshop and critique, group-based work, project testing and discussion. A small number of courses are

offered in a hybrid or online format, and three or four courses a year are offered online during the Summer or Winter sessions.

The Game Studio capstone is a notable exception. As a 12-credit studio, students are expected to spend at least 36 hours per week on site, based on the Carnegie Unit for Studio courses. For the majority of students, this co-located environment gives them the opportunity and the motivation to work collaboratively and in teams.

In March 2020, due to the pandemic, the University rapidly shifted to online course delivery for the remainder of the Spring 2020 semester. This included all Game Design classes, including the Game Studio capstone. From a faculty perspective, we were able to transition all of our courses smoothly and effectively into an online format, using a combination of Blackboard, Google Meet, Zoom, Discord, and Slack, depending on course, instructor, and student needs. During Fall 2020, most Game Design classes were run in a synchronous online format, and several were asynchronous. One course began the semester in person, but shifted through a hybrid format to finish the last month fully online. All Spring 2021 courses save the capstone are online, either synchronous or asynchronous. The capstone will be run as a hybrid course, with students electing to participate in-person or remotely.

During the shift to remote learning, we provided resources to students as needed. This support included loans of laptops, Wacom drawing tablets, iPads and Android tablets, as well as the ability to use software licenses for Adobe and ZBrush off-campus. We consider ourselves lucky that most of the software we use is free for students, and that most of our students have computers powerful enough.

Learning Experiences

As previously mentioned, all Game Design students in the major are required to complete a 12-credit capstone, either Internship or Game Studio. In preparation for their capstone, students develop a resume and portfolio, which is reviewed by Game Design faculty members and, if appropriate, the Internship Director. Guidelines for the Game Studio Capstone and Internship can be found in Appendix 6: Game Studio Capstone.

Progress Review Policy

The Game Design Progress Review Policy establishes criteria for students to continue in the major after completing the five core required courses.

It is the responsibility of all Game Design students to meet with their advisors each semester for pre registration advisement and progress review. During that review, the student's progress through the curriculum is discussed, with particular attention paid to whether or not the student is maintaining the 2.5 or higher GPA in Game Design coursework required to participate in the capstone experience.

- Any student with a GPA below 2.5 in the major who has completed the first five Game Design Core Requirements (COMM 1105, GAME 2000, GAME 2200, GAME 3000, and

GAME 3030) will be referred to the chair with the recommendation that the student be dropped from the Game Design Major.

- Any transfer student who has transferred nine or more credits toward the major must earn a GPA of 2.5 or higher in the first two required courses in the Game Design major or be referred to the chair with a recommendation that they be dropped from the major.
- Students who are recommended to be dropped from the major may petition the chair in writing to a) switch to a Communications Media concentration (capacity permitting at the time of the petition); or b) appeal the drop recommendation. If, with respect to (b), the chair decides to uphold the drop recommendation, the student may appeal that decision to the Dean of Arts and Sciences.
- Students must maintain at least a 2.5 GPA in Game Design coursework to qualify for the Professional Capstone Requirement.

Program Processes that Affect Curriculum

The game design program follows the same policies and processes as the University as a whole. Fitchburg State University is a four year college with a strong background in the liberal arts. To work within this system, students have an option to focus 12 credits of LA&S courses into a path that will help them in their game development. A student can use this block of credits towards computer science courses, art courses, history courses or language courses. This gives both flexibility as well as opportunity for some degree of specialization.

The Game Design program is also a part of the Communications Media department, giving the students a direct connection to those disciplines, including Graphic Design, Film & Video, Professional/Marketing Communication, and Theater.

Effectiveness of Curriculum

Students demonstrate the effectiveness of the curriculum most clearly through each student's required 12-credit capstone course (Game Studio or Internship). There is a clear distinction between the entering freshman and graduating senior in a number of ways. In their senior year, students ideally have developed in the "T design" with a core skill, supplemented with a broad understanding of the entire game development process and ability to participate in all disciplines to varying degrees. The understanding of creating games as well as the quality of assets and overall design is observable when comparing entering projects with graduating seniors.

Portfolio Defense

To measure curriculum effectiveness, we use a portfolio review in the semester prior to each student's required 12-credit capstone course (Game Studio or Internship). Student portfolios are reviewed by at least two Game Design faculty members, and the Internship Director where appropriate. Feedback from portfolio reviews provides important data used to revise and update the curriculum. A sample of portfolio defense data from Fall 2015 through Spring 2017 is included in Appendix 5: Portfolio Defense Data. Included in Appendix 5 is the Portfolio Defense Evaluation Form currently used by faculty to determine whether a student's portfolio meets the standard. This rubric is used by all concentrations in Communication Media, and is therefore

quite generic. One point that we can improve upon is to update this rubric to be more specific to the needs of Game Design students.

Students who do not pass their portfolio defense are given the opportunity to revise their work and repeat their defense. This allows students to fix elements of their portfolio or include additional work. However, one of the challenges of reviewing students' portfolios in their last semester of classes prior to the capstone is that it does not allow adequate time for students to fully address any areas of weakness or develop new skills prior to their internship. Game Design & Communications Media faculty have discussed the possibility of developing a way to review students' portfolios earlier in the program, possibly at the end of the second year or beginning of the third year. The goal would be to identify any areas in which a student may need to improve and provide feedback. This would give students adequate time to develop their work further in order to be successful. At this time, faculty have not determined exactly how this would be implemented.

Achievement of Objectives from the Perspective of Alumni

Student feedback has been overall positive. It is a difficult task to be fully prepared for the competitive game development industry in a four year program, but the Game Design program has overall provided a very positive outcome for most of the students surveyed in the short term. In our Nov 2020 Alumni Survey, we asked alumni to self-assess their skills in the following areas, all directly related to our Student Learning Objectives. Understanding of the core concepts of game design

- Ability to independently develop games or related media
- Ability to work as a member of a team or group
- Proficiency with game development tools
- Understanding of programming and logic
- Foundational knowledge of visual art and design
- Understanding of games from historic, social, aesthetic, and theoretical perspectives
- Ability to think analytically and logically
- Ability to acquire new skills and knowledge on your own
- Ability to write effectively
- Ability to use the knowledge, ideas, or perspectives of game design

For nearly all the questions, 75% of alumni indicated "Very Well" or "Well." The exception, "Understanding of programming and logic", is described above. See Appendix 3: Game Design Alumni Survey for full results.

Many students are working in closely related or directly related fields to Game Design and there are a number of graduated students expressing that even though they are not currently in Game Design or closely related work, they are satisfied with the experience in the undergraduate education and feel it has helped them reach their current path.

2b. Students

Learning expectations

The game design degree expects students to graduate with a well rounded balance of the technical and artistic side of game design. In addition to their core of game classes, the University experience gives the student a liberal arts education with the opportunity to specialize some elective tracks to their chosen major of Game Design.

Learning supports

Learning supports offered through Fitchburg State include tutoring for classes both in and outside of their major. There are numerous clubs and organizations as well as opportunities for students to network both in the school and through local game development organizations such as Boston Indies, Boston Post Mortem.

Retention Initiatives

Our efforts towards student retention overlap with our efforts to simply have the best possible program. We feel that an impactful and meaningful program of study, well designed and taught courses, and vibrant student culture, all contribute strongly to retention. More pointedly we see advising as central to retention. Most of our faculty advise more than 35 students. Even with this load we feel that we do a good job helping our advisees to navigate our program and the university in general. We all meet with students during our advising period before registration, in our weekly office hours and more recently through remote video. We support these advising and mentorship efforts with events including a yearly (sometimes twice a year) “town hall” or “state of the program” meetings. These specific meetings were featured in Jose Zagal’s paper-presentation “Jams, Clubs, Shows, and More: An Overview of Institutional Support for Game Students” at the Game Developers Conference in 2019. While our Game Jams serve many purposes (community building, portfolio development, enrichment, fun) they also contribute to student retention. We bring in industry and scholarly experts to speak to classes and as larger events, as well as encourage (and in some classes require) our students to go to similar events off campus, typically in Boston. Finally, our faculty advise numerous student clubs, including the Game Design Student Association, Role-Playing Guild, and other game-related clubs, thereby contributing to ongoing student culture and morale.

Student retention rates in the Game Design major remain strong and above the institutional average. In AY16 through AY20, student retention rates for Game Design averaged 77%, with a high of 87.88% in AY16 and a low of 69.23% in AY17. During this time period, the student retention rate for Game Design was 7% to 17% above the institutional average. See Appendix 1.

Game Design Program Trend Data Day-School								
	AY 14	AY 15	AY 16	AY 17	AY 18	AY 19	AY 20	Trend
Retention Rates 5								
Retention Rate in Major - Game Design	N/A	60.87%	87.88%	85.11%	69.23%	70.00%	73.81%	
Retention Rate Changed Major - Game Design	N/A	21.74%	0.00%	4.26%	12.82%	10.00%	7.14%	
Retention Rate in Major Institutional	N/A	62.15%	58.75%	62.36%	65.17%	61.38%	61.71%	
Retention Rate Changed Major Institutional	N/A	15.19%	16.11%	12.55%	12.80%	11.98%	11.78%	

2c. Faculty

Teaching Responsibilities

Fitchburg State University is a teaching institution. All full time faculty at the University teach a 4 course, 12 credit load per semester. Faculty generally teach in their chosen discipline with an emphasis on teaching industry level skills while keeping the experience broad and versatile to accommodate the different styles of learning and the University mission of a broad liberal arts education. The structure and frequency of assignments is at the discretion of each faculty member and based on the course being taught.

Advising responsibilities

Students are assigned to a Game Design faculty member as their academic advisor. Faculty are required per the MSCA contract to meet with their advisees at least once per semester to assist students with selecting a course schedule for the following semester. Many faculty members go above and beyond this requirement and meet with their advisees several times a semester. Game Design faculty take an excess of 30 students each semester as advisees, and try to share resources in order to support such a big load.

To aid with student advising, the department has developed the Game Design Major Advising Check Sheet (see Appendix 2) which lists requirements and electives in the major as well as LA&S curriculum requirements. Copies of the check sheet are available for students and faculty in a display rack at the entrance to the department office. We also began distributing a Game Design Advising Guide at the start of the advising & registration period, with updated course options relevant to Game Design students.

Professional development initiatives

Fitchburg State offers various professional development opportunities throughout the year. The Faculty Union guarantees each faculty member Continuing Scholarship funds (last year this was $872) towards expanding their scholarship. Several faculty have been awarded Academic Affairs Special Projects Grants or MSCA Professional Development Funds. The Communications Media department maintains a travel fund for faculty members who attend or present at conferences (local, national, or international) with additional money awarded at the

end of the year from excess funds unused. However, these travel funds are typically not sufficient to cover expenses for larger national or international conferences such as GDC.

3. Program Outcomes

3a. Program

Alumni Feedback Form
Game Design faculty administered an alumni survey in November 2020 that yielded a very useful data set. We had 59 respondents, or 46% of our alumni. A subset of our alumni survey solicited qualitative data about our program and how our alumni felt about it. In this section we synthesize and comment on this feedback and highlight trends. Please see the full survey for more detail and all responses. See Appendix 3

Are there any specific Game Design classes that best prepared you for your career?
Some students choose to highlight specific faculty as opposed to courses. These have not been included in the breakdown which follows. In rough order of frequency from most often mentioned to least:

- Advanced Game Workshop
- Game Design Workshop
- Game Studio/Capstone
- Game Level Design
- 3D Modeling 1 and 2
- Game Studies Seminar
- Animation
- Independent studies
- Japan Trip
- Life Drawing
- History of Interactive Media
- Elements of Game Design

Are there any classes that you wish had been offered at Fitchburg State?
Students want more skills and more of them at high levels. Trends:

- More programming
- Sound/music
- QA
- Advanced versions of existing courses (eg Level Design)
- (tech)animation

What was the most important aspect of the Game Design program for you?
If you could change one thing about the program, what would it be?
There is a fair amount of overlap here with the ‘courses’ question above. Trends:

- Tech and software suggestions eg. more Unreal, more C++,
- More advanced game design, rather than art or programming eg: systems, mechanics, analog game development
- More rigor, higher expectation and more difficult material
- Less theory and history in favor of development courses
- Explicit student specialization and/or concentrations (eg: an artist track).

What did we not ask you about but you feel we should know?
This category is the most diverse and very difficult to sum up so rather here are some noteworthy trends and themes:

- Suggestion to connect courses so that students “don’t start from scratch” every time, that assets could be made in one course and brought into another or courses could be used to develop for other courses.
- Importance of, but also difficulties in, working with programming and taking Computer Science classes.
- The importance of networking.
- A desire (as alumni) to help current students.

One aspect of the Game Design alumni survey that we believe there is room for improvement is the current 42% response rate of students working in their chosen field. It is our hope that this review process will help us bring this closer to the 67 - 70% of students working in their chosen field as reflected in the 2019 Communications Media program review.

3b. Student

Student Learning Outcomes

The expected learning outcomes and competencies include:

Game Design students will, through a combination of required courses and electives, be exposed to and attain competency in the following concepts, practices and skills:

- Analytical understanding of games, gameplay, and game design
- Foundations in visual art and creative writing
- Principles of game logic and programming
- Industry-standard game engines and software
- Team-based iterative design process
- Games as media of communication and aesthetic expression

Student competency in these objectives will be assessed through key courses, the internship preparation process, and the internship itself.

Scholarly and Creative Productions

VISIONS Student Honors Festival & Exhibition

Each year, VISIONS, the juried honors exhibit of student work from the Communications Media department is held in April. This event is held over the course of several hours in the late afternoon and early evening, and includes the Visions Forum, in which students present research projects, an Alumni Panel, a gallery opening of student work from the Photography and Graphic Design concentrations, a Game Design showcase, a Theater showcase, and a Film/Video screening. The department archives student work accepted into VISIONS.

Trend Data Reflection/Analysis

Summary and discussion of Game Design program data AY 14 - AY 20

Majors

Game Design grew quickly from 53 majors in AY 14 to 178 majors in AY 20. Numbers of majors have been consistently in the 170s since AY 18. Since AY 2015 the Game Design percentage of Fitchburg graduates has increased from less than 1% to nearly 5% of day school graduates.

Double Majors

While we only have data for last year the numbers of double majors are small, 1.7%.

*Out-of-State Majors**

Initially out-of-state/New England students made up around 20% of their cohorts but that number dropped to the high teens for the last four years. This may reflect new Game Design programs of study developing regionally, changes in student funding options or a general decline in marketing and outreach for the program, department and University in the region.

*Data gathered does not account for our students from outside of New England nor for International students.

Minors

There has always been a relatively small number of students who minor in Game Design. The numbers of declared minors are trending upwards and at a rate of growth faster than the growth of the major. That said, less than half of the students who declared a minor ended up completing one by graduation. The program should better support student success and completion, including this small group of minors.

We anticipate that the new Digital Humanities Major at the University will help to support these students by giving them an academic framework that includes Game Design & Media Studies.

Retention

Game Design major retention rate* has varied, going from near 60% to the high 80s to 70s. These rates are better than the institution as a whole but can be improved. A relatively small number of students (less than 5 per AY) change to other majors at Fitchburg.

*there is no data for Ay 2014 retention rates.

Enrollment by Race, Ethnicity and Gender

Our Game Design program has a diversity problem, in terms of both race and gender expressions. In terms of gender:

A 2013 study[1] showed that the national average rate of women in game design programs nationally in 2013 was 12.6%. In AY 14, 15 and 16 Fitchburg State showed similar percentages between 11 and 14%. In 2017 this improved by 5% and has stayed in the low twenties since. While there has been a 10% increase in women Game Design majors at Fitchburg State in the time covered by this report there is no evidence that this rate of increase will continue or that indeed not backslide (as it has by 2 points in AY 20). The game design faculty feel that meaningful intervention is required at the programmatic, departmental and university levels. This is important not just for the health of the program but for the diversity of the game industry and related fields. At one time, the Admissions department had instituted programs to increase enrollment of women, but it is unclear whether these programs are ongoing, due to personnel and policy changes.

A caveat: the gender category in this collection only allowed for the selection of “male” or “female” and did not allow for students transitioning or in other ways presenting themselves in ways which did not conform to the collection protocols. Game Design does have students and alumni who have either transitioned since coming to Fitchburg State or now identify in a way which is not represented in the data.

The racial make-up of Game Design majors at Fitchburg State also lack diversity. The majors in the program have stayed about 75% White for the time period addressed in this report. The students in the other 25% are roughly, by percentage: Hispanic followed closely by Black or African American, then by people who identify as having more than one race and then Asian. The increase, small though it may be, in the number of non-white students is a promising trend but, as in the case with gender it seems to have leveled off as our numbers of majors in general has stabilized. Fitchburg State is a regional university and should reflect the make-up of our region of North Central Massachusetts. For comparison, the City of Fitchburg is 37.7% non-white[2].

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[1] https://www.gamasutra.com/blogs/MonicaMcGill/20130604/193603/Examining_the_Pipeline_Demographics_of_Undergraduate_Students_Studying_Games.php

[2] https://www.census.gov/quickfacts/fitchburgcitymassachusetts

Note: the faculty aspect of these issues is addressed in another section of this report (Faculty Diversity).

Graduation Rates
As a comparatively new major, Game Design only has graduation rate data for a few years. For AY 2013 the rate of gradation was 73% and for AY 2014 it was 71%. Total numbers of Game Design Major graduates grew from 4 students in AY 15 to to 38 students in AY 20, and as of Jan 2021, we have 131 graduates.

Integration into department

We are represented on all Communications Media department committees, and we are advisors to the Game Design Student Association, Pokemon Society, Role Playing Guild, Rubik's Cube Club and Fitchburg Smash Club. We participate in departmental meetings and governance.

D. Analysis and Action Plan for the Future

As we are a relatively new program, we still struggle to find our true strength & identity. We strive to provide students with broad experience in all aspects of game design & development, and have provided a highly flexible curriculum structure that allows students the freedom to craft an educational experience that is as broad or deep, as theoretical or technical, as they would like.

A double-edged sword in our program is the fact that we have consistently exceeded our enrollment targets. As noted, our initial Program Goals established 3 new faculty hires in the first three years, and 32 incoming students per year. However, in exchange for hiring the 3rd planned faculty member, the administration insisted that we raise our enrollment target from 32 to 40 students in AY2016, with no additional increase in faculty, staff, or operating budget. Despite this target, Admissions has in fact enrolled over 50 students almost every year between AY16-20, and we are under constant pressure to admit first-year and transfer students beyond the program goal. Thus, we have a total of 178 Game Design majors in AY20, or 50 students above the stated Program Goal of 128.

While this is reassuring in times of enrollment and economic crisis, it is the root cause of numerous issues in the program. The most obvious issues are enrollment and advising overloads. Our student/teacher ratio increased from a proposed 25.6 (128 students / 5 faculty) to 35.6 (178 students / 5 faculty), leading to an advising overload (our faculty union considers an excess of 30 advisees per faculty to be an overload). In addition, there is a constant class overload, in which faculty feel a need to oversubscribe courses in order to serve our students, and the need to run additional “catch-up” sections of required courses which are not in the two-year course rotation.

To be fair, the need to oversubscribe courses is not entirely due to our overloaded enrollment. A number of students need to repeat core Game classes, in part due to our minimum 2.0 grade

requirement for core courses. This requirement is not the issue, as we feel it is important to ensure the quality of students, our program, and future student employment in the field. Another recent contributing factor, likely shared by other academic programs and institutions, is that students during the pandemic have struggled with student success due to mental health and social/economic insecurity, often leading to extended incompletes, withdrawing from, or failing courses, and needing to retake them to avoid falling even further behind.

A more subtle implication of our enrollment overload is that since faculty are needed to cover required courses in the curriculum, we don't have the flexibility to offer courses in subjects indicated by our Alumni feedback, in which many alumni stated a desire for more advanced or specialized courses such as advanced game programming, visual scripting, design (including systems, mechanics, level design, analog game design), sound, QA, tech art or animation, C++, Unreal Engine, and other subjects.

There are two options to address this overload and bring us in line with our current needs and the faculty/student ratio from our Program Goals: 1) admit fewer students, or 2) hire additional faculty. We recommend that an additional full-time faculty be hired to teach in the program, ideally with an emphasis on game programming and other related areas. Please note that a Computer Science faculty would not be an appropriate substitution: the disciplines of Computer Science and Game Development have quite different needs and approaches, and such a workaround would not benefit either department, as the Computer Science faculty have made clear.

The issues that are not resource-bound may be improved with better integration and communication with the game industry. Several of our faculty are already deeply involved in the game industry and regional professional associations. However, as noted, after struggling for years to secure suitable internships for our students, we have refocused our attention on the Game Studio capstone. Of the Spring 2021 students fulfilling the capstone requirement, only 3 out of 20 have internships. More troubling is the only 42.4% of graduates employed in a field closely related to Game Design. There is hope, as several of our alumni were recently hired by game studios including Rockstar New England and Epic Games, and there has been some discussion about recruitment, and alumni are moving into positions where they can recommend qualified peers. Perhaps an external Advisory Board would help in our continuing outreach.

As noted, we recognize that the senior portfolio defense as it stands (see Appendix 5) is not a sufficient instrument to assess student learning across the major. We would to explore and revise the portfolio process.

Finally, we recognize that our Student Learning Outcomes may be outdated, and our goals & objectives are not specifically aligned with the University's new Strategic Plan that was approved within the last year. Two goals moving forward will be to rewrite the SLOs and map them to the new Strategic Plan.

Proposed Action Plan

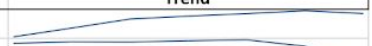
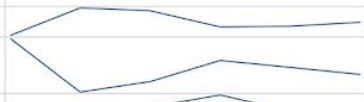
- Hire a 6th faculty member with experience in game programming and related areas
- Develop a new portfolio review process
- Update SLOs to reflect new University Strategic Plan
- Work with Director of Assessment to develop an assessment plan
- Form an external Advisory Board

E. Appendices

Student Data

Appendix 1: Game Design Program Trend Data

Game Design Program Trend Data
Day-School

	AY 14	AY 15	AY 16	AY 17	AY 18	AY 19	AY 20	Trend
Total Enrollment in Game Design classes	**211**	**318**	**428**	**463**	**494**	**528**	**495**	
Total Enrollment in All Classes	33,952	34,081	34,062	34,169	34,257	33,695	31,984	
Percentage of total enrollment: Game Design classes	**0.62%**	**0.90%**	**1.30%**	**1.40%**	**1.40%**	**1.60%**	**1.55%**	
Graduates in the Major	**0**	**4**	**12**	**15**	**27**	**27**	**38**	
Percentage of overall graduates		**0.60%**	**1.60%**	**1.90%**	**3.60%**	**3.70%**	**4.83%**	
Graduates in the Minor	**0**	**1**	**1**	**2**	**3**	**1**	**4**	
Number of Majors2	**53**	**87**	**131**	**153**	**172**	**177**	**178**	
Overall declared majors3	4,017	3,806	3,840	3,862	3,837	3,805	3,607	
Percentage of overall declared majors	**1.32%**	**2.29%**	**3.41%**	**3.96%**	**4.48%**	**4.65%**	**4.93%**	
Number of incoming freshmen majors	24	32	46	39	42	44	40	
Percentage of incoming freshmen class4	2.97%	4.35%	5.85%	5.11%	5.56%	6.10%	5.85%	
Number of incoming transfer majors	13	6	5	4	7	13	12	
Percentage of incoming transfer class4	2.94%	1.38%	1.23%	0.88%	1.59%	3.13%	3.93%	
Number of Minors	**4**	**8**	**10**	**11**	**10**	**13**	**15**	
Retention Rates 5								
Retention Rate in Major - Game Design	N/A	60.87%	87.88%	85.11%	69.23%	70.00%	73.81%	
Retention Rate Changed Major - Game Design	N/A	21.74%	0.00%	4.26%	12.82%	10.00%	7.14%	
Retention Rate in Major Institutional	N/A	62.15%	58.75%	62.36%	65.17%	61.38%	61.71%	
Retention Rate Changed Major Institutional	N/A	15.19%	16.11%	12.55%	12.80%	11.98%	11.78%	

1*Academic Year* covers the fall and spring semesters ending with the spring term of the academic year date (ex. Fall, 2018 and Spring, 2019 = AY19)

2 *Number of Majors* for this department includes both major 1 and major 2.

3 Number *Overall Declared Majors* is the number of matriculated undergraduate day-school students, excluding Pre-majors.

4 *Incoming freshmen/Incoming transfers as percentage of incoming class*

5Academic year indicated for *Retention Rates* is the year for which students were retained. *Retention Rates* is calculation for full-time freshmen entering in fall and retained for the following fall semester.

Diversity of Students in the Major

	AY 14			AY 15			AY 16			AY 17			AY 18			AY 19			AY 20		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
American Indian or Alaskan Native	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asian	1	0	1	3	0	3	5	1	6	4	1	5	3	2	5	2	1	3	6	1	7
Black or African American	1	1	2	3	0	3	5	1	6	5	5	10	5	5	10	5	4	9	6	1	7
Hispanic	4	1	5	4	1	5	10	3	13	9	3	12	8	3	11	7	6	13	10	5	15
More than one	5	1	6	7	1	8	7	1	8	5	1	6	4	3	7	5	3	8	5	5	10
Native Hawaiian or Pacific Islander	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	1	0	1	2	0	2	5	1	6	6	1	7	3	1	4	4	1	5
White	36	3	39	58	9	68	84	12	96	96	18	114	109	23	132	114	26	140	110	24	134
Total	**47**	**6**	**53**	**76**	**11**	**87**	**113**	**18**	**131**	**124**	**29**	**153**	**135**	**37**	**172**	**136**	**41**	**177**	**141**	**37**	**178**

Fall Cohorts retained at the university in a major other than Game Design

Fall 13	5	2 COMM, 1 BSAD, 1 ENST, 1 ITEC
Fall 14	0	N/A
Fall 15	2	2 COMM
Fall 16	5	1 COMM, 1 BIOL, 1 BSAD, 1 ENST, 1 INDI
Fall 17	4	2 COMM, 1 COMP, 1 HUMS
Fall 18	3	1 COMM, 1 HIST, 1 PREM

Double Majors

For fall 2020, 1.7% (3) students are double majors; 2 are COMP and 1 is HIST

Out of State Majors

AY14	# Majors	53	**% Out of State**		AY18	# Majors	172	**% Out of State**
	CT	2	3.8%			CT	6	3.5%
	NH	4	7.5%			MD	1	0.6%
	NJ	1	1.9%			ME	3	1.7%
	NY	2	3.8%			MI	1	0.6%
	RI	2	3.8%			NH	3	1.7%
	VT	1	1.9%			NJ	2	1.2%

	Total	12	22.6%			NY	2	1.2%
						RI	6	3.5%
AY15	# Majors	87	**% Out of State**			VT	4	2.3%
	CT	3	3.4%			Total	28	16.3%
	ME	1	1.1%					
	NH	6	6.9%		AY19	# Majors	177	**% Out of State**
	NJ	1	1.1%			CT	11	6.2%
	NY	3	3.4%			IL	1	0.6%
	RI	5	5.7%			MD	1	0.6%
	Total	19	21.8%			ME	3	1.7%
						MI	1	0.6%
AY16	# Majors	131	**% Out of State**			NH	2	1.1%
	CT	5	3.8%			NY	3	1.7%
	ME	1	0.8%			RI	6	3.4%
	NH	7	5.3%			VT	3	1.7%
	NJ	1	0.8%			Total	31	17.5%
	NY	3	2.3%					
	RI	6	4.6%		AY20	# Majors	178	**% Out of State**
	VT	1	0.8%			CT	7	3.9%
	Total	24	18.3%			ME	5	2.8%
						MI	1	0.6%
AY17	# Majors	153	**% Out of State**			NH	3	1.7%
	CT	5	3.3%			NJ	1	0.6%
	ME	2	1.3%			NY	2	1.1%
	NH	3	2.0%			RI	5	2.8%
	NJ	2	1.3%			VA	1	0.6%
	NY	2	1.3%			VT	1	0.6%
	RI	7	4.6%			WI	1	0.6%
	VT	2	1.3%			Total	27	15.2%
	Total	23	15.0%					

Appendix 2: Academic Advising

Game Design Advising Checksheet

BACHELOR OF SCIENCE IN GAME DESIGN

Student Name:_____

GAME DESIGN MAJOR Requirements (60 Credits)

I. Core Requirements (8 courses – 24 credits)

__COMM 1105 Introduction to Communication & Media Studies
__GAME 2000 Elements of Game Design
__GAME 2200 Introduction to Game Art

__GAME 2300 Game Design Workshop *(prerequisites: GAME 2000 & 2200; CSC 1500)*
__GAME 3030 Game Level Design *(prerequisites: GAME 2000 & 2200)*

__GAME 3060 3D Game Development *(prerequisites: GAME 2300 & 3030)*

__GAME 3500 Advanced Game Workshop *(prerequisite: GAME 3060)*
__GAME 4000 Game Studies Seminar *(prerequisites: GAME 2000, Writing 2, Junior/Senior Status)*

II. Specialization Electives (4 courses - 12 credits)

Choose one Specialization Elective from each category (A, B, C, D).

A. Game Design (choose one)

__GAME 3005 Mobile Game Design
__GAME 3040 Virtual Reality Development
__GAME 3050 Serious Games
__GAME 3003 History by Design
__GAME 3510 Contemporary Issues in Games
__COMM 3304 Interactive Media Project Design

B. Game Art (choose one)

__GAME 2020 Concept Art for Game Development
__GAME 3070 Intermediate Game Art
__GAME 3075 Advanced Game Art
__GAME 3080 3D Animation
__ART 2200 Life Drawing
__ART 3300 History of Architecture
__ART 3500 History of Modern Architecture

C. Game Programming (choose one)

__GAME/CSC 3650 Game Programming
__CSC/MATH 1900 Discrete Mathematics
__CSC 2560 Systems Programming
__CSC 3560 Mobile Application Development
__PHIL 1100 Logic

D. Game Writing (choose one)

__GAME 3010 Game Narrative Design
__COMM 3470 Document Design
__ENGL 3510 Fiction Writing
__THEA 3035 Playwriting

III. Electives (4 courses - 12 credits)

In consultation with their advisor, students select four courses from the Specialization Electives above, from the list below, or from GAME, COMM, TETA, or THEA courses. Note: these courses could also count toward a minor in Art, Graphic Design, Computer Science, or Theater.

GAME 2001 Games & Arts in Japan
ART 1600 Design
ART 1650 Three-Dimensional Design
ART 2150 The Art of Puppetry
ART 2250 Intermediate Drawing
CSC 3200 Programming Languages
CSC 3500 Object-Oriented Programming
CSC 4210 Computer Graphics Programming
MUSC 1400 Intro to Music Technology
MUSC 3760 Film Scoring

1._____
2._____
3._____
4._____

IV. Professional Capstone Requirement (1 course – 12 credits)

A full-time, semester-long pre-professional experience. Qualification includes completion of all previous requirements, a 2.5 GPA in the Game Design Major, and the development and defense of a professional portfolio before a faculty committee. Students should begin early in their academic careers to prepare and maintain a strong portfolio of their work.

__GAME 4100 Game Studio __COMM 4880 Internship

Updated Oct 10, 2019

BACHELOR OF SCIENCE IN GAME DESIGN

Student Name:_____

LIBERAL ARTS & SCIENCES Requirements

Readiness*

Mathematics Placement Exam

- ☐ 0-49: *Basic Math I* Required
- ☐ 50-81: *Basic Math II* Required
- ☐ Passed Math Placement Exam

English Placement Exam

- ☐ 0-7: Basic College Writing Required
- ☐ Passed English Placement Exam

* Institutional credit only. Credits do not count toward graduation.

CURRICULAR CLUSTER CORE (36 Credits)

SMT - Science, Math & Technology

4 Courses – minimum 12 credits

Math	3-4	☐
Lab Science	3-4	☐
Health & Fitness	3	☐
_____	3	☐

CTW - Citizenship and the World

3 courses – minimum 9 credits

History	3	☐
Human Behavior	3	☐
_____	3	☐

ART - The Arts

5 courses – minimum 15 credits

Art or Music	3	☐
Writing I	3	☐
Writing II	3	☐
Literature	3	☐
_____	3	☐

GLOBAL DIVERSITY **

2 courses – *credits count elsewhere in LAS.*

GDCN / GDAN _____	☐
Other cluster_____	☐

Global Diversity: at least one the two courses must address a non-Western region (i.e. GDCN** or GDA**N**), the other course must be from a **different content cluster** (if 1st is GD**C**N, the other may be GD**A** or GD**A**N)

GAME DESIGN REQUIRED LAS COURSES

4 courses – *Credits count elsewhere in LAS.*

ART 1400 Drawing _____	☐
COMM 2003 History of Interactive Media & Games	☐
CSC 1500 Computer Science I _____	☐
CSC 1550 Computer Science II _____	☐

ADVANCED LAS OPTIONS (12 credits)

In addition to the 36 credit core, students must select from one of the 3 LA&S options.***

OPTION A: 6 credits in one foreign language and 6 credits of LA&S coursework at or above the 2000 level.

OPTION B: 12 credits (with a minimum of 6 at or above the 2000 level) in a single LA&S discipline outside of the student's first major. *Note: Option B can be met by completing an LAS MINOR, including Art, Computer Science, English, History, etc.*

OPTION C: 12 credits (with a minimum of 6 at or above the 2000 level); a unique LA&S curriculum based on the student's interests, needs or goals, approved by the advisor, department chair and dean.

***CAREER RECOMMENDATIONS:**

Game Artist: Minor/Option B in Studio Art
Game Programmer: Minor/B in Computer Science
Game Designer: Minor/B in English, History, etc.

ADVANCED LAS OPTION _(A, B, or C)

4 courses – minimum 12 credits

2000+ _____	3	☐
2000+ _____	3	☐
_____	3	☐
_____	3	☐

FREE ELECTIVES

To reach 120 credits required for Graduation

_____	3	☐
_____	3	☐
_____	3	☐
_____	3	☐

Game Design Advising Guide Fall 2020

Advising Period - Oct 26 - Nov 13, 2020

- ❏ Sign up for an Advising appointment with your Academic Advisor
- ❏ Familiarize yourself with the Game Design program requirements: Game Design, BS
- ❏ Check Web4 / DegreeWorks to see how your courses fit
- ❏ If you like, download the Game Design Fillable Checksheet
- ❏ Browse the Registrar's Seats List (Course Offerings)
- ❏ Prepare a course schedule for next semester, including alternate classes

Registration Period: Nov 16 - 20, 2020

- ❏ Check Web4 / DegreeWorks to find your registration date & time
  - ❏ hint: set a reminder in your calendar!
- ❏ At that time, log into Web4 with the alt pin provided by your Advisor
- ❏ Register for Spring 2021 classes

Game Design Required Courses - Sp21

All of the following courses required for Game Design students are running in Spring 2021:

- ART 1400 - Drawing
- COMM 1105 - Intro to Comm & Media Studies
- COMM 2003 - History of Interactive Media and Games
- CSC 1500 - Computer Science I
- CSC 1550 - Computer Science II
  - *Prerequisite: CSC 1500*
- GAME 2000 - Elements of Game Design
- GAME 2200 - Introduction to Game Art
- GAME 3000 - Game Design Workshop
  - *Prerequisites: GAME 2000, GAME 2200, CSC 1500*
- GAME 3030 - Game Level Design
  - *Prerequisites: GAME 2000, GAME 2200*
- GAME 3060 - 3D Game Development
  - *NOTE: GAME 3070 Recommended. Prerequisites: minimum 2.0 in GAME 3000 and 3030.*
- GAME 3500 - Advanced Game Workshop
  - *Prerequisite: minimum 2.0 in GAME 3060*
  - *Recommended: take at least two **Specialization Electives** first!*
- GAME 4000 - Game Studies Seminar
  - *Prerequisites: GAME 2000, ENGL 1200 and Junior/Senior status*
- GAME 4100 - Game Studio OR COMM 4800 - Internship
  - *Prerequisites: Complete all previous requirements; portfolio review*

Game Design Specialization Electives - Sp21

All students must take at least one course from each area. Here are the Spring 2021 options.

A. Game Design Electives

- GAME 3005 - Mobile Game Design * **Strongly Recommended**
- GAME 3510 - Contemporary Issues in Games * **Strongly Recommended**
  - Explore games & play outside mass media, including art/theater/serious/narrative games
- COMM 3304 - Interactive Media Project Design * **Strongly Recommended**
  - Client & team based course examining production management & UI design

B. Game Art Electives

- GAME 3070 - Intermediate Game Art * **Strongly Recommended**
- GAME 3080 - 3D Animation * **Strongly Recommended**
- ART 3500 - History of Modern Architecture

C. Game Programming Electives

- CSC 1900 - Discrete Mathematics * **Strongly Recommended**
  - *Prerequisites: MATH 1250 or MATH 1300 or equivalent knowledge*
- CSC 2560 - Systems Programming * **Strongly Recommended**
  - *Prerequisites: CSC 1550 and CSC/MATH 1900 (may be able to red card)*
- CSC 3560 - Mobile Application Development * **Strongly Recommended**
  - *Prerequisite: CSC 1550*
- PHIL 1100 - Logic

D. Game Writing Electives

- GAME 3010 - Game Narrative Design * **Strongly Recommended**
- COMM 3470 - Document Design * **Strongly Recommended**
  - Client & team based course examining graphics, typography, and design principles
- ENGL 3510 - Fiction Writing
- THEA 3035 - Playwrighting

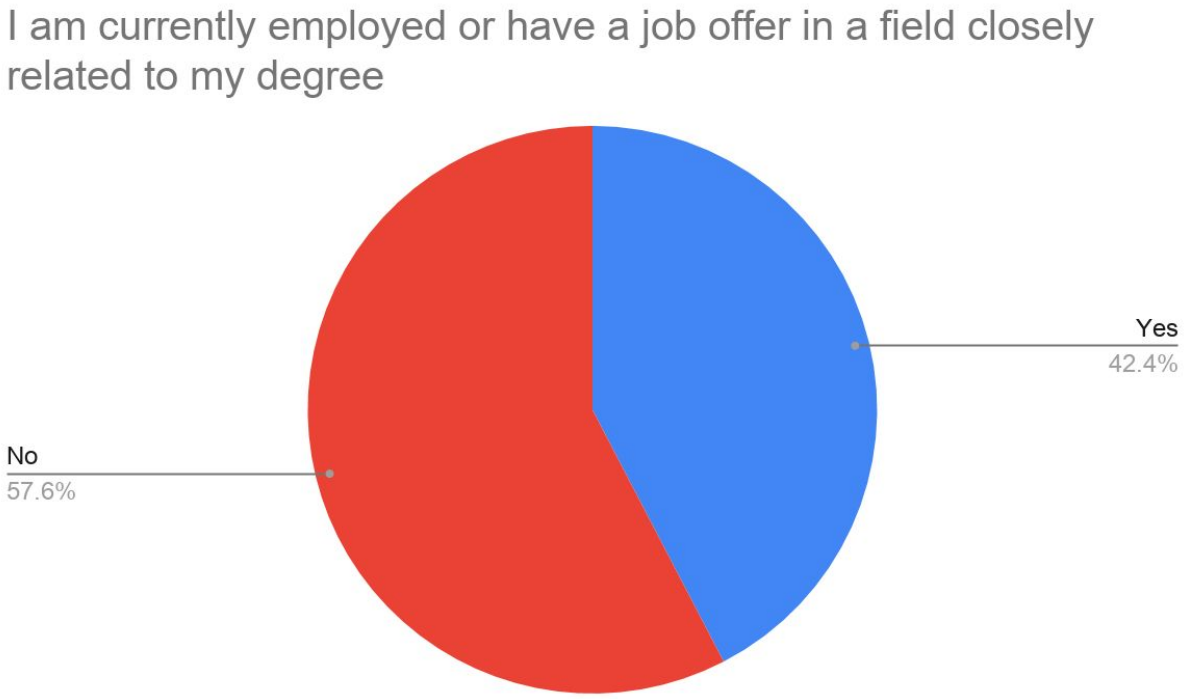
Department Electives - Sp21

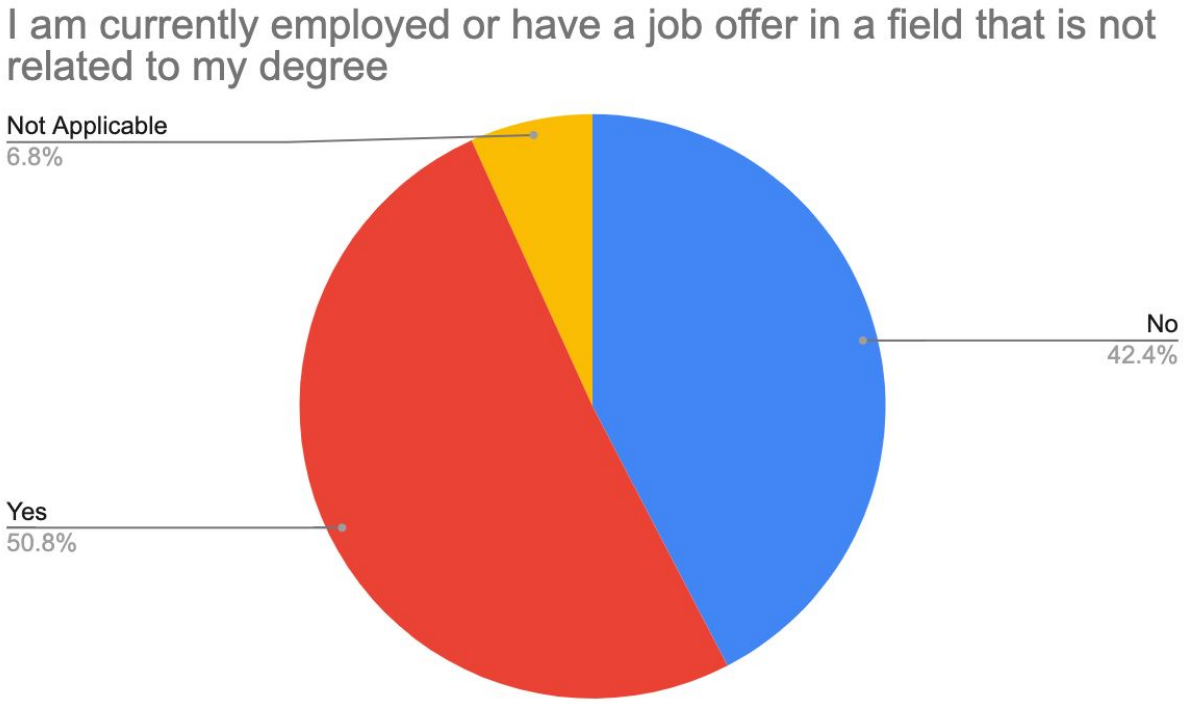
All students must also take four *additional* electives, which can include courses listed above, below, or any GAME, COMM, THEA, or TETA classes. Here are some Spring 2021 options:

- COMM 3810 - Introduction to Graphic Design * **Strongly Recommended**
  - Foundation of visual design; can expand career path for art & UI design
- THEA 3002 - Artist as Business * **Strongly Recommended**
  - *Prerequisites: Junior status, COMM 1105, COMM 1120 (can red card)*
- COMM 3010 - Introduction to Professional Communication
- ART 1650 - Three-Dimensional Design
- ART 2150 - The Art of Puppetry
- ART 2250 - Intermediate Drawing
  - *Prerequisite: ART 1400*
- CSC 4210 - Computer Graphics Programming
  - *Prerequisite: CSC 2560*
- MUSC 1400 - Introduction to Music Technology
- TETA 2300 - Fundamentals of Stage Lighting Design

Appendix 3: Game Design Alumni Survey

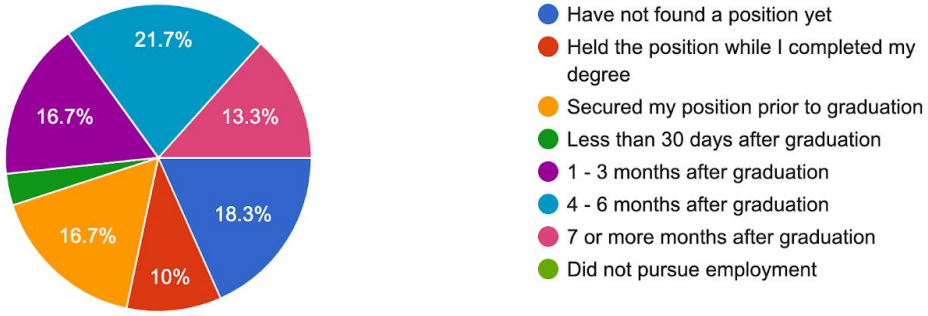
November 2020





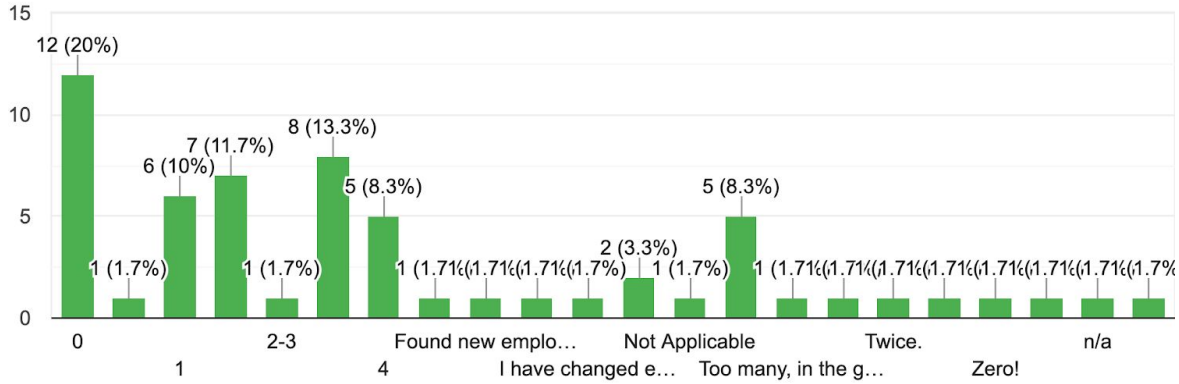
How long did it take you to find your first position after graduating?

60 responses



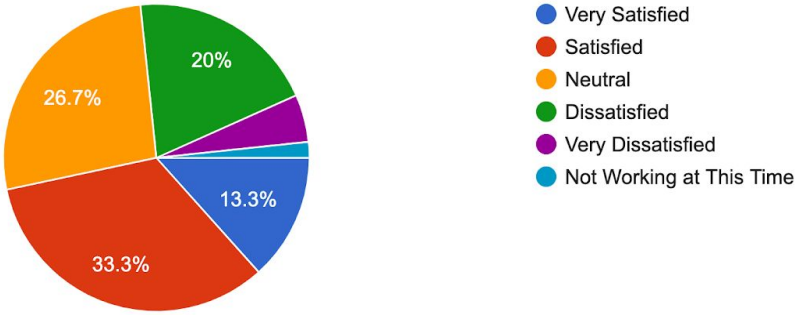
How many times have you changed employers or been promoted since graduation?

60 responses



How satisfied are you with the course of your career thus far?

60 responses

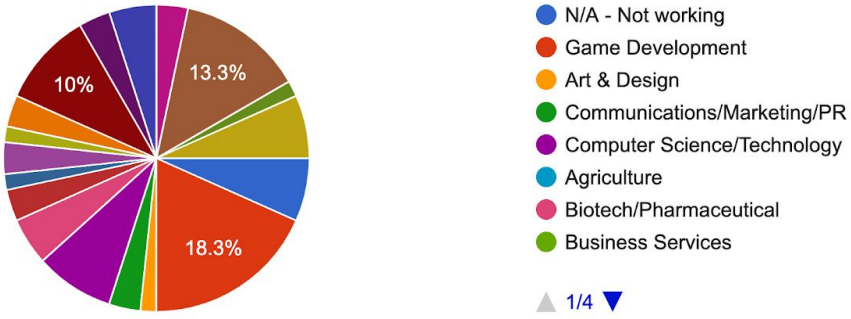


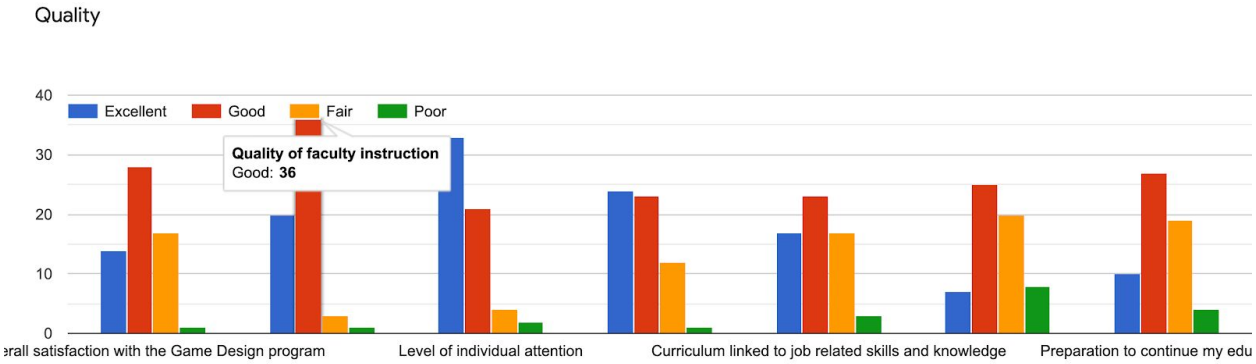
In what sector are you employed?

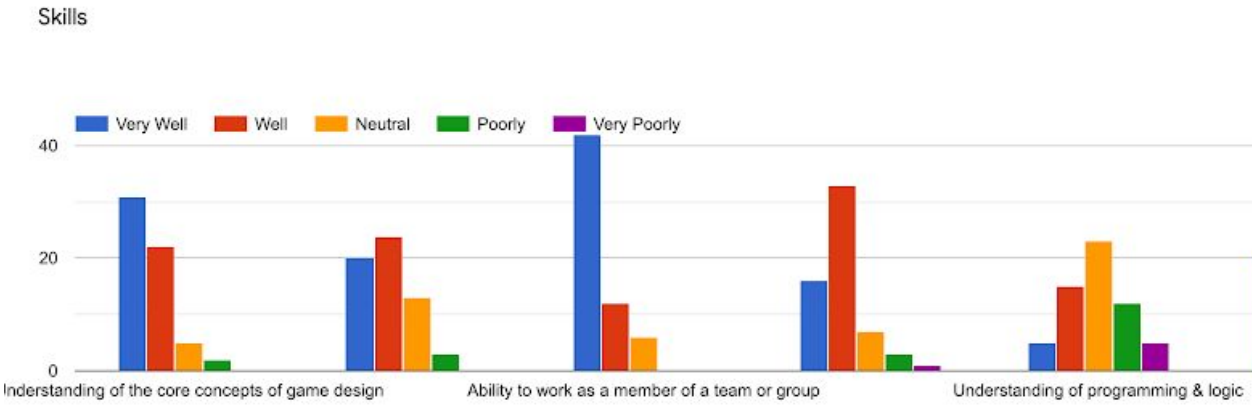
60 responses

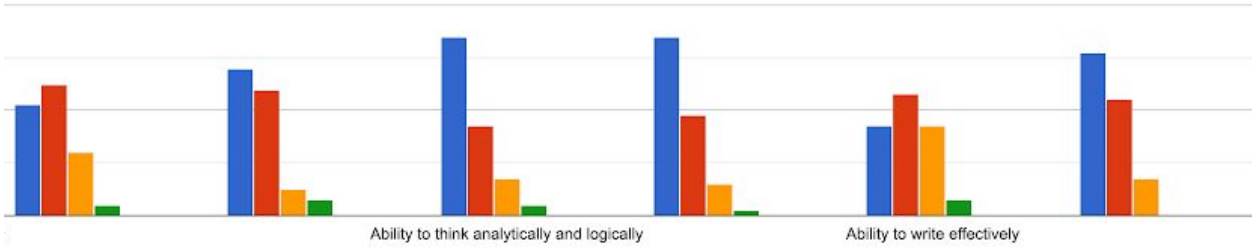
Please select the industry that best describes your employer.

60 responses









Where are you currently employed and what is your job title?

- Stewarts Shops
- Mu Han Total Martial Arts. Title: Master Instructor
- iRobot. Service desk
- Rockstar Games - Dev Support (Starting March) / SNHU Instructor

- Software Engineer, Tricky Fast Studios
- Assistant Graphic Designer at MIT Lincoln Labs
- Volunteer
- Health Scholars, Inc. - Technical Artist
- Salesforce - Site Reliability Engineer
- Software Support Team Leader @ Vision Government Solutions
- Wayfair - Senior 3D Artist
- Salem State University Library - Library Supervisor
- Digital Marketing Technologist
- Target, Tech Consultant
- Florida Medical Clinic, Medial Assistant
- New England Wire Products - Production Coordinator
- G4S Secure Solution
- WB Games Boston. Associate Software Engineer.
- Qa Engineer and Release Manager at MeQuilibrium
- n/a
- Kellex Co, Software Engineer
- N/A
- Raytheon Technologies, Software Engineer
- Senior customer service representative at SaviLinx
- Tricky Fast Studios | Software Engineer & Game Designer
- Producer and Designer at Tricky Fast Studios
- Clean Properties Incorporated, Environmental Technician
- Ringtail Games, Self Employed, Head of Game Development
- Currently self-employed. CEO, Executive Producer, and 2D Animator.
- Target, Asset Protection Specialist.
- QA Tester
- food delivery
- Cashier
- Not currently employed
- I am employed at Cogmedix as an Assembly Technician
- Temporary Financial Clerk
- In Walmart unfortunately but still actively looking!
- AMD, Technologist
- VP of Strategic Marketing at Enthusiast Gaming
- Addgene as Order Processing Assistant
- Nova Farms Joint Roller
- Triwire, Cable Technician
- Quality Assurance at Jibunu
- Call center rep at CVS
- Pilgrim foods, palletizer operator
- I'm unemployed currently due to COVID 19
- Design Tech
- Self Employed, Freelance Illustrator
- Big Y-Bakery Clerk
- House Husband
- Wayfair, 3D Artist
- Emerald City Games, Game Programmer

- Target Cafe Employee, and Subway Employee
- NUWC Newport - (Computer) Scientist
- St. Anselm College - Media Technician
- QA Software Tester - Epic Games
- FableVision, Inc, Developer
- Mount Sinai Health System Desktop Support
- Creative Edge Software, I am a Software Technician

Location

- Somerville, MA
- Leominster, MA
- Rutland, Vermont
- Lowell, MA
- Massachusetts
- Massachusetts
- Merrimack NH
- Whitman, MA
- Fall River, MA
- Metrowest, Boston
- Newton
- Denver, CO
- Walpole, MA
- Chicago, IL
- Boston, MA
- Lynn Massachusetts
- Boston Metro Area
- Salem, MA
- Tampa, FL
- Worcester, MA
- Lunenburg, MA
- Boxborough Ma
- Nashua, NH
- Morganton, NC
- Groveland, MA
- RI
- Topsham Maine
- Shrewsbury Massachusetts
- Wayland, MA
- Fitchburg
- Fitchburg, Massachusetts
- Auburn
- Stow, MA
- Billerica, MA
- fitchburg
- Attleboro, Massachusetts
- Lunenburg, Massachusetts
- PEABODY, MA

- Athol, MA
- Marlborough MA
- Los Angeles, CA
- Chelmsford, MA
- North Attleboro MA
- Portsmouth RI
- Greenville, NH
- Southwick, Massachusetts. Moving to Japan on December 12th, 2020.
- Pepperell, Mass
- Springfield, MA
- Boylston Massachusetts
- Burnaby, BC, Canada
- Newport, RI
- Merrimac, MA
- Still stuck in the Burg
- New York

Professional Organizations

- I plan on joining IGDA
- Harvard Business School Online
- NuPath Inc.
- I help organize the Boston Post Mortem group
- IAnimate and Animation Mentor
- I haven’t been able to join many aside from connecting on LinkedIn with game devs (Boston game development etc.)
- Design Buddies
- Currently a member of Boston Post Mortem
- NUWC
- St. Anselm College

Professional Development

- I launched a small game studio in September
- I have published multiple games as of the time of this survey and occasionally attend workshops and conferences (obviously not since COVID).
- Got a Top Secret Clearance with the US Government; Attended an LGBTQ Diversity Conference in 2019
- Taken several college courses in calculus, physics, and GPU programming
- Working on certifications currently
- Mentorship, Meet-ups, networking, purchasing tutorials from various outlets including Artststion, forum posting on Polycount
- I have been doing some personal things. Along with freelance writing/art, I educate students and patrons at the two libraries I work at. (Public+Academic) This includes people who have personal art/game/writing they want to improve on, or students who take graphic design or other classes at the university. Long story short, the things I have learned from game design can directly translate into my job as a library assistant / educator. (Especially on the tech side) They will also help me when I go for my master's in Library Science with a specialty in art.
- Published a Kickstarter-backed role-playing game, published a few other micro-games.

- I did work on one Game Jam after college with some random people I met online. But, since I started working at Target, I have not had the time or energy to get back into it. I'm usually just too exhausted and when I feel that passionate burst to work on something, I'm either at work, or it only lasts long enough for me to write an idea down or open an editor like Unity before losing interest. Plus, I need to learn Blender because I can't afford Maya or 3ds, so I feel like I'm starting over again. It makes me depressed.
- Co-Producer/QA Manager for The Station Game Inc. Earned my MBA from FSU
- Pursuing AWS Cloud Certification
- went to post mortem events to attempt to network
- Expanding my knowledge of Unity, learning algorithms and data structures, and making game prototypes.
- Released a Coin-Op Arcade game at River Styx Brewing independently
- - Published the video game Obsolete Souls™ on Steam.
- - Hosted a booth for Dennel Cake, LLC. at an open gallery for Black Lives Matter.
- - Made & delivered a full presentation for a new user interface to improve phone app navigation at NuPath Inc.
- - Launched an online store for Dennel Cake, LLC. via RedBubble.
- Conferences
- BPM, BITSHO
- I volunteer with Indie Mega Booth every year at PAX East. Also once at PAX South and GDC. I attend many game design events in Boston such at BPM, Boston Fig, Boston Unreal, and Boston Unity.
- Continued to expand my knowledge through skill share courses. Through Skillshare I refined my knowledge of HTML, Calligraphy, and general graphic design. I also got a mentor through quarantine at a marketing agency to teach me how to sell.
- IAnimate and Animation Mentor
- I've been working on my art and having plans on creating a small business as well as a little side gig! I haven't been able to attend any conferences and properly connect with people in game design yet though but it is a work in progress!
- Had a booth and presented a solo game project at BostonFIG 2018
- I have given talks at many conferences (PAX, Reboot Develop, etc)
- Design Buddies Events & Being mentored in Motion Graphics
- I still develop computer games. I currently have a large personal project I am working on. I have also broadened my skillset in order to do so.
- I've worked on a game or 2 briefly since graduating but have not found any full time positions or permanent positions with any companies or studios. The only big project I started myself is a webcomic called Division 5 on WEBTOON and recieved a lot of support from it!
- I have published an arcade game (complete with a cocktail arcade cabinet) alongside Connor Botts for River Styx Brewing in Fitchburg. Currently I am working on a project with Michael DeFranzia and Ryan Hill that we have scoped to complete by Fall of 2021.
- None within the past year due to COVID.
- Attended conventions, workshops, conferences.
- Continued to attend B.U.G, and Unreal events, Personal work and improving my skills on the job by utilizing my peers. Made in MA, PAX East
- Published a couple of smaller personal game projects on Steam, and continue to work on several unpublished projects.
- Internship at Virtual Reality Zombies for the summer of 2019.
- Assisted in the delivery of Virtual World projects and web app based trainings

- Had to teach myself Unreal Engine, and co-founded Their October Studios with Mike Gauthier
- CompTIA A+ certification

Any specific Game Design classes that best prepared you for your career?

- The final game design course (i was before the capstone, but the one where a small group spent the semester developing a game); the high-level study in games course taught by Prof. Tobin in 2016 (sorry I cant remember official titles!)
- 3D Game Development and Advanced Game Workshop. Also the independent studies they let me do.
- Game Design Workshop
- All of Tobin's classes and the Capstone studio.
- 3D Modeling II with Britt, Principles of Fundemental Modeling with Farley Chery, Game Design Workshop with Les
- Concept Art/Narrative Design, Seminar, history of multimedia&game.
- Advanced Game Workshop (Team Management, Independent Projects), Mobile Game Development (Solo experimentation, iteration), Game Studies Seminar (Academic logic and application, historical perspective, Rhetorical argument),
- 3D Game Dev 2
- All of the classes played a part but a class in quality assurance would have been helpful (ex. setting up automated testing)
- Game Workshop and Advanved Game Workshop
- Advanced Game Workshop (Or any project oriented class)
- The workshops
- Don't remember
- Computer Science 1 and 2
- The three classes 3D Game Dev, Advanced Game Workshop, and Game Studio
- Advanced Game Workshop / Game Studio
- Since my current employment does not relate to game design I don’t know that any specific game design class aided in preparation. I have however continued to work on design of analog games I my spare time and for that I found Elements of game design to be helpful
- Game Workshop / Advanced Game Workshop / Level Design
- Game Studio
- All the classes that focused on hands-on Unity development, like Advanced Game Workshop
- Game Design Workshop and Game Studio
- 3D Game Dev, 3D Modeling 1, Arts & Games in Japan, Concept Art, Game Design Workshop, Game Seminar.
- Concept art, 3D Modeling, Animation, life drawing (extremely important)
- Independent Studies, Capstone, Advanced Game Workshop
- Game studio capstone prepared me more than any of the classes and I improved really fast during it
- 3D animation courses set me on my tech animator path
- Les's Level design class where we got to use Unreal
- Game Design Workshop
- Advanced Game Workshop
- I feel like the workshops helped me the most! The Game capstone was also a great learning experience and I genuinely wish we had more classes where we all just sit down and make games. If there’s a way to have a semester where it’s just creating one sole game like internship

where all the classes sort of line up with one another in helping further develop that game, it may just help them learn how it is to be in the industry more! Having a bunch of unfinished games sort of left me at a loss but having one cohesive game where all the classes sort of connect could help actually make a full game! (I hope that makes sense)
- Game Studio, Mobile Game Design, Game Workshop, 3D Game Development
- Interactive Media
- Topics and Games in Japan, 3D Modeling, Contemporary Games
- Game studies seminar
- Game Theory with Samuel Tobin
- Game workshop
- Independent studies
- Contemporary Issues in Games, Game Level Design, Creative Writing for Games
- Modeling, Games Workshop
- Advanced Game Workshop, as well as the Capstone Project.
- Intended Career. Practices like Scrum/ Agile. Capstone was BEYOND beneficial towards my plans.
- I specifically loved all my classes with Les Nelken and Sam Tobin. Nothing wrong with the rest, but I felt more invested in classes taught by these too.
- 3D Modeling I, Game Design Workshop, Game Studio Internship
- None in particular, though the classes with longer development periods for projects were probably the most beneficial.
- 3D Modeling 1 and 2
- Game Design Workshop and Advanced Game Design Workshop
- Game Studio for sure; Game Workshop happening at the same time as my Computer Science II class was huge; 3D Games.
- Level Design, and Workshop 1, 2, and Adv.
- All of the independent/group project-focused classes
- Modeling and Technical Modeling classes

Are there any classes that you wish had been offered at Fitchburg State?

- Only wish there were classes that weren't required.
- VR
- AI Programming ;)
- A class in QA practices, since QA is the most entry level job in the field
- C++ and/or Unreal Programming
- More programming focused courses related specifically to game design.
- I honestly can't remember enough what was offered to make a proper suggestion!
- Sound production
- Rigging (or technical art in general)
- none
- Anything to do this using Substance painter, substance designer and the creation of photorealistic materials.
- Game Programming should be a required class, though I recall it was difficult to get into? I could be wrong.
- Solo Game Development (Use of pre-made assets, more "experimental" game development, game development as academic study)

- Current Game Studies (Looking at games themselves as academic work, Robert Yang, Bennett Foddy, Nina Freeman, Pippin Barr, etc. / Game Maker's Toolkit, Extra Credits, etc.)
- Workshop or Seminar on Game Industry Realities (Hiring Practices, Economics of AAA studios, Worker Rights, Sexism/Racism/Ageism, etc.)
- Ones more focused specifically on game programming, I struggled with the computer science courses beyond Computer Science 1 because they moved at a pace more suited to people who were only interested in programming, rather than meshing with the other aspects of game design.
- Game Programming, different classes to assist with art (more one on one) that had each professor making us use either max or maya instead of a mix. I feel not focusing one or the other actually did not benefit the class
- Quality Assurance, What Producers do for a game studio (topic)
- Sounds in video games, and QA in Video Games
- A class relating to cloud based technologies or their underlying concepts. AWS, Google Cloud, etc. and the role they play in modern software design.
- More game programing courses
- Programing for Games
- Programing in Unreal Engine
- An advanced level design class as an elective with a prerequisite of Level Design
- More Advanced Game Programming / AI Related
- I wish there were more classes that delt with game design from an analog perspective
- Foundations of UI/UX Design, Game Programming but not the CS one, **Advanced Elements of Game Design**, Analog Games Workshop
- None
- A class on programming in Unreal using C++
- Advertising for Games
- I think a class tailored to the business side of independent game development would be great, but I personally didn't see enough students interested in the idea to run a class. I think that a few more classes should focus on developing games in the Unreal Engine instead of listing Unreal Engine usage as an alternative to Unity. I also recommend familiarizing students with Jira, and Trello for the project development courses as well (Game Workshop, 3D Game Dev).
- Technical lighting (just focus on lighting and texturing)
- Programming classes centered around languages used in core GD classes
- Music specifically for games
- Tech animation focused courses
- Maybe a higher level level-design class. A QA class could be interesting, or part of a class to identify bugs and properly report them.
- A course on utilizing UX in games
- More animation/rigging classes as well as a game focused programing course
- Maybe more in depth programming classes where I actually program a game? I felt like the classes I took didn’t really help much :((most of the things I had to try to google or reread the book constantly to try to figure it out but it didn’t make sense to me since I wasn’t visually seeing what was going on. Also maybe more classes on how to create ambience for a game (background and music maybe?)
- A class that taught command line git, perhaps in conjunction with working on a large-scale project with an entire class to encounter branching and merge conflicts
- I did a lot of independent studies during my time with Warmouth so my history is a bit different than most and fit really well to my learning - and prepared me in an excellent manner. Due to this

(and because technically this was right as the degree was being developed) I don't have a recommendation.
- Professional Portfolio Development
- More virtual reality programs
- Japanese language, Coding strictly for games
- Yes. Since I was more looking to get into the buisness of board game / trading card game design, anything to do with the creation and production of non-digital games would have been interesting and a breath of fresh air.
- Dedicated programming classes were taught by less competent professors outside the game development program. I excelled when learning programming from my game development professors while working in Unity, and struggled in my dedicated programming classes.
- Not that I can immediately think of
- More ZBrush classes, more classes on concept art/2D art with more of a focus on visual arts
- Shader/Advanced graphics programming courses
- I would have liked to see a class specifically based around optimization within Unity/Unreal (or any applicable industry standard game engine). I felt I had learned some basics here and there in other classes, but it is such an integral piece of the 'game-design puzzle' to know that it warrants its own class in my opinion.
- Game Marketing & Producing (Teaching how to be a producer as its a required thing that can make or break the development of a game)
- "Programming for Dummies" and maybe a class that concentrated on materials / rendering. I didn't have the best grasp on that when I left. The program was new at the time. I'm sure they've fine tuned things quite a bit since then.
- Class dedicated to materials
- Using Substance tools
- More advanced modeling classes
- On the whole, I wish there were more options to improve my game programming abilities. We were introduced to the bare level understanding of how to code in Unity, but learned very little about things like efficient coding practices, optimization, debugging, repositories, and the like, which resulted in a LOT of learning in a very short time frame during my first job, in order to catch up.
- Due to shortage of students during the semester, I was not able to take animation classes.
- More game programming focused classes
- It sounds like this has since been addressed and something I already gave feedback on in the past, but a Portfolio Workshop earlier on would have been nice.
- Unreal Engine Development, C++ programming
- better programming classes
- More in depth on rendering 3D stills

What was the most important aspect of the Game Design program for you?

- Working with others on games
- Learning the tools
- Team work
- Very supportive faculty, I had a lot on my plate in school and the patience and support contributed greatly to my completion.
- Networking.
- The connections made

- Capstone/long term group projects
- Exposure to every part of the game development pipeline, as well as the facilities and freedom to create games outside of class with folks who are also interested in doing so
- Creative thinking skills as well as learning to work effectively in a team
- The collaboration with peers and the friends you make.
- Learning workflows. I really think learning the tools is one thing but learning the proper workflows is much more important.
- Diversity of classes and definitely learning how to manage your own portfolios, websites, etc.
- Creative freedom to make what projects we wanted, even when they were bad ideas.
- Feeling like my professors genuinely cared about me and my progress, which I believe they did. They are all wonderful people :)
- I was able to pursue a degree for my dream job, I just feel I was not fully prepared for how competitive it is, which is expected and fine. The professors were perfect but some classes definitely need to be adjusted
- Gaining a general idea of the whole process of game design
- Community, it seems even more then before the people you know can make the difference in getting work.
- The analysis of existing games and their design, talking about what works and what doesn't.
- The knowledge gained
- Art and Writing
- Learning how to communicate professionally in the real world, especially with a team.
- The most important aspect for me was definitely the higher level classes where I am forced to incorporate all that I had learned up to that point.
- Collaboration between Students
- General design tenants that can be applied to both analog and digital games.
- To be in a productive space where I was encouraged to work on my craft and meet like minded people to work on it with and be able to achieve heights I wouldn't have otherwise reached alone.
- Working with teammates
- I'm not sure what is meant by this question so I'll just say that I think the strongest part of the program relative to other graduates looking to get into the industry is the incredible classes on game academia offered here. Not useful for getting a job but probably very useful once you actually have one.
- Leaning how to actually use the engines
- Learning how to teach myself to achieve original concepts with the knowledge and tools given to me.
- Learning basic tools and software to execute my creative thoughts.
- Ability to work in teams to work on communication skills core to success in any industry.
- Learning about/from the different "concentrations" even if we are not planning to do them so we understand all the parts of a game team
- Interacting with peers in my field at events such as boston post mortem or talks held at the university
- The big workshop classes where we spent a lot of time just on our own making games was pivotal. Just throwing us on our own/with groups proved very useful.
- Learning how to work on a team and building a strong work ethic.
- Animation
- The modeling classes by far helped me the most!
- Meeting people that shared similar goals, and having classes structured to encourage self-learning, creativity, and prototyping/fast iteration

- learning a variety of ways to make games along with learning the different aspects that go into game development (art, programming, etc)
- Utilization of programs and hardware, as well as connections with peers.
- Learning the foundations of what makes a game a game and why people find them enjoyable
- To learn my strengths and weaknesses when it came to making games
- Learning to think analytically and logically, as well as how to properly balance games and formulate interesting concepts with smaller scopes.
- Game design workshop
- Developing the various skills
- Improving my skills in digital art so I can extend them to other areas like 3D modeling and world building
- Good access to information/base skill-set to pursue what interests you specifically.
- Definitely learning how to learn, if that makes sense. Game Design is such a broad field, students really need to experience game development outside of class on their own in order to succeed. Between that, and an industry that is always growing at a rapid pace, the ability to learn new software, programming languages, pipelines, etc. at an efficient pace is absolutely necessary. I believe Fitchburg State gave me the tools to do as such.
- Scrum & Agile practices as well as Capstone. They were both crazy beneficial to teaching proper company style mature communication and self governing.
- Getting to know a younger generation. I was on average 15 years older than most of my classmates.
- Game Studio internship
- I definitely appreciated being able to understand a bit about all of the different areas of the development cycle. Even if I don't actively work in the areas, it gives me a better understanding of the limitations and expectations in the other areas, and allows me to do my area better.
- Teamwork and Communication
- Getting to work on teams and go through the whole process of game development, from brainstorming to delivering a completed game!
- The collaborative creative process I think was one of the most fulfilling academic experiences I've ever had. Especially when we came together and built Land Under Rot with everything going on... I don't think that supportive, collaborative team environment where you can be creative within your niche to build something bigger than any one person is special.
- The sense of belonging and that the professor's truly want you to succeed, giving you all the tools you need to do so.
- being forced to work with others from different disciplines
- Learning the different tools needed to create a game.
- 3D Modeling

If you could change one thing about the program, what would it be?

- N/A
- I think students should be learning how to critique a game instead of being told to make projects and critique other work based on game design fundamentals they learned in a class about making board games. Good game design needs to be taught and discussed more after foundational classes are finished. I enjoyed Tobin’ s classes very much, but they felt disconnected from our hands-on work after Elements, which properly combined them. I’d suggest there should be a class that is like elements, but later on and advanced, now using the tools students know and use but focused more on things like critique, balance, game loops, scope,

agency, satisfaction, and necessity of game design. I almost feel like this is what advanced game workshop should be, since 3D game dev already has you create multiple projects with different people and let's you change scope and adapt way quicker and easier, and I gained more from it than workshop. Would also maybe get students to make another game for their portfolio instead of relying on their programmer in advanced ws. Just my thoughts, anyway. Probably would've saved a few headaches when getting to Game Studio.

- Stop the acceptance of students based on GPA and more on what work they can do.
- More unreal engine courses
- Listing three, sorry!
    - I love Sam, but I don't believe Game Studies Seminar or History of Interactive Media should be part of the core curriculum. I felt both of those classes did not contribute to my skills and should be replaced with more development classes.
    - I really think the program should switch fully to C++ for programmers. Many other universities are teaching C++ & Unreal, and most studios require C++ as part of the job. I think it serves as a disadvantage keeping Unity as the default engine in higher classes.
    - I don't believe work is criticized hard enough in classes. Anonymous reports are great, but I've seen so many lazy projects in school get a pass. I've seen plenty students refuse to learn more into their role and I believe they believe its not expected that they do. In a competitive field that requires a strong portfolio to break into, its disheartening being on a project with someone who isn't interested in doing more than their bare minimum.
- As a software engineer that has now built and released games in C#, C++, and JS I would be thrilled to hear about a larger emphasis on game programming in the course. I got the impression at my time at FSU that most students were leaning heavily into art, however, programming is a vital part of building a game and also opens the way for a lot of career opportunities outside of game development itself.
- Working more outwardly with other fields, like graphic design, film, or computer science. We worked with students from Berkley once and it was immediately very beneficial to have a different aspect on the project from someone with a different artistic lense
- More in depth explanation of certain tools, terminology, and functions of software.
- I think an independent study should be mandatory for each student, but that scales... poorly. It would give them an opportunity to explore a part of the development scene that really interests them.
- Focus on Scrum framework as it could be applicable to development outside of game design as well
- The program should be better built to actually help you get into the games industry. There are like 3-5 graduates total that are in the industry currently. Just before and after graduation I applied to 50+ entry level games jobs....not even a single call back. My degree had 0 to do with me getting my current position in government software it was purely based on a recommendation from a friend. My colleague (same title and pay) has no degree at all, and thus no debt like I have for a degree I will likely never ever use.
- Make it harder. I think Fitchburg, in comparison to what I've heard from other 3D art and game design students from other colleges, is far too easy. It's setting people up for thinking this industry is a cake walk when after getting out of college I realized that it requires a lot more work and self improvement than I realized.
- Focusing also on how your skills will benefit you in other careers.
- A clear expression of the program's focus - theoretical/academic, independent/generalist, or job preparation/specialization.

- Less video tutorials, if possible. While helpful for more focused concepts, when watching them for a full game tutorial it felt like something I could've just done at home. I think it'd be better to use the tutorial concepts from the videos and apply them to have a class make a game - or a couple of group games - together. Less watching, more doing. Failure is the best teacher after all.
- I would only have us do comp sci 1 and 2 if we are pursing the programming half. Make us take game programming instead. Have less projects where just the one person makes a game by themselves. Make the capstone program be less like 3d game dev, because when i took them, it was literally the same thing
- At the time I started it was a brand new program, I am sure there have been improvements in the program as a whole. When I was there I feel like it only scratched the surface of game design.
- Harsher punishment to people who slack in team related projects since unfortunately, your game is only as good as your weakest link.
- A deeper dive into game design in regards to multi-player games. Getting students thinking about (possibly designing?) elements including but not limited to; in-game economy, real world monetization, game balance / fairness, how to promote different interactions (co-op or competitive), how to be immersive in a multi-player experience, etc.
- more of a focus on skill development over theory.
- Improve Programing section of curriculum
- I wish professors would adjust the difficulty of their course based on student skill levels. I sat in quite a few classes that were very repetitive. Both programming basics and very simple 3D modeling was taught more than once to my 2016 colleagues.
- i cannot think of anything at the moment.
- I'm sure it is clear from the last few questions that analog game design is important to me and I would love to more of it implemented within the major. The issue I find is that so much of the major is devoted to video game design and I don't know how to implement more analog design with weakening the skill set of a potential student for the high level classes such as workshop
- The program tends to focus so much on how to make games that I feel that teaching how to design games and have your game accomplish it's target goals was forgotten. Sure there is Elements of Game Design but that is literally the first class you take and by the time you are getting around to really make your first game post-Workshop you've had 1 class about design and 3 other classes about making games (Intro to Game Art / Workshop / Level Design). Not to say that those classes don't teach design but the things I remember most from those classes were How to use Photoshop/Maya/ZBrush, How to use C#/Unity, How to use Blueprint/Unreal. After learning 5 software suites I feel like the design stuff sort of gets lost in how frantic and difficult it is to actually pump the game demos out the door that are generally needed to pass these classes.
- Basically I am advocating for more design classes somewhere in the mix after you've taken all your intro classes. Things that reinforce ideas like properly developing mechanics that fit your game's goal, mechanics feedback, properly communicating ideas and information to the player, communicating in a way that fit's the games goal, etc..
- Greater focus on engineering
- I would change the name of the major to "Game Development" and make sure that all students have the capability to self publish a game by the time they graduate.
- Make a more clear stepping stone for the system, where each class builds on previous knowledge.
- More mandatory usage in the Unreal Engine.
- A curriculum made specifically for the difference departments involved in game design.

- Game Programming majors should be more integrated with the Game Design major/programming classes at different levels that more closely relate to the engines and languages used
- refining the required programming classes (these may have already been changed in the past couple years but I didn't have a good experience or a big takeaway when I took them, I learned more in the actual game classes when we programmed in unity/unreal)
- Tech animation courses
- More game programming classes. Or a teacher that knows Unreal's Blueprinting would be awesome.
- Helping students refine a primary skill. Having game design students understand different parts of what goes into a game is a good thing until they need to fill a specific role in a team.
- More focus on game programming as well as more portfolio work
- I felt like I didn’t really fully learn everything I was supposed to. Granted our last year got cut short and I was working and double majoring so that could just be a personal thing, but I would really like to have the first two years of classes be more hands on with our major and not just have math courses that don’t really correlate with programming. Maybe if we could have a math class specific to coding that would help? I also wish we could have used the motion cap room more too! I only got to use it for VR but not actually create a game using motion capture.
- A few more concept teaching-style courses for programming and technical art/VFX. A lot of the programming electives from the Comp Sci department were really weak
- Have professional resource (person) transitioning into internship programs.
- A better program to convey students to professional roles.
- More hands on exercises for the students
- As I stated previously, adding classes for the creation and production of non-digital games. A few of my classmates at the time were more interested in those fields, and there were not too many classes that scratched that itch.
- Improvements to dedicated programming classes
- More insight on how to find a job.
- More opportunities for internships or jobs. More connections to studios and developers who would be hiring.
- More options for concentrations (programming/art)
- I think that it would highly benefit students going through the game Design program at Fitchburg State University to have a Capstone-like class or summer project to offer to sophomore/junior year students. Much like Game Jam, the Capstone Project does an excellent job of showing students the reality of working on a game alongside their peers.
- The main difference of course with the Capstone in comparison to the Game Jam, or even Game Workshop/Advanced game Workshop, is students are dedicating all of their time towards one game over a span of several months rather than several games over a shorter period of time.
- If students are exposed to this environment earlier in their careers at Fitchburg State, I believe that they will be vastly more equipped to receiving an internship senior year as opposed to taking the final Capstone Project. Even if students cannot achieve this, they will be far more prepared to accomplish an amazing feat during their senior year Capstone Project.
- I understand when it comes to integrating this into a curriculum is easier said than done, but if there is a way to make it happen I believe it will make a world of difference.
- Better roadmap structure. intending to start people in ALL divisions equally but after a midpoint review of all their skills being placed where they were most proficient for the second half of their tenure.

- Ultimately, I think fine tuning here and there was what they needed. As well as a few years and cycles of students under their belts. I'm sure much has changed in the 4 years since I graduated.
- I feel students should be held accountable for their work. During my time in the program i remember multiple times professors would extend assignments because students would not have work in on time.
- I guess it would be to make it so the students have a better understanding of how the production cycle of game development comes together as a whole. When I graduated, I knew a little bit about each area, but I didn't have a good knowledge on how those things would come together on a project of a decent scale. I had never actually experienced the process of making tasks, tracking tasks, handing off working, receiving and implementing finished work, completing milestones, etc. We scratched the surface on agile scrum, but for the most part, class projects were primarily unstructured from a production side, and team members delivered work whenever, and stuff got done whenever, because there was no goal we had to hit, other than our own. If a list of key features the game project will present at the end of the deadline was a requirement, and the project was graded based on the promised deliverables that were achieved, I think that would be more beneficial.
- More instruction in finding jobs and preparing for them.
- More game programming focused classes, less classes that conflict schedule-wise or classes that get canceled due to low student count :(
- I almost wish there was a way to stay on during the summer. Some kind of program that would allow you to stay and keep building with other student developers, even if it was on a lower-key basis. This is speaking from a place of personal struggle I suppose, but I know staying productive during summers (as I am sure it is for many) was hands down my greatest weakness. Commuting in didn't help, but I think I work better over all when there is a persistent presence of others with a common goal. If there was an opportunity even just for just a few game summer courses, I think it might have been a nice motivator to stay more pro-active during those quieter times.
- Lack of Unreal development
- better classes to/more encouragement to learn programming
- More rendering classes

What did we not ask you about but you feel we should know?

- I still don’t know where I want to be in the game design scene, but I know that I want to make games and music for them. Not getting a game design job right away is a choice I’ve made to prepare myself monetarily and fulfill myself creatively before I leave my cozy Vermont cabin and become a city-dwelling pawn of capitalism and Starbucks, and I do not feel in any way that my education is responsible for me working retail, especially during this pandemic, after college. I may sound critical of the major at times but I immensely appreciate and respect all of my game design professors and the work they put in to help me realize my game design goals. Maybe this is a message better suited for email, but whatever. Thanks! (It’s me, Jon Medlin)
- Make the program or at least credit transfer more suitable for transfer students. I had to take classes at fitchburg that were very similar to my previous school and I couldn't petition them because they were mandatory classes and not electives. This kept me from learning a few of the biggest tools that were used. Such as, 3ds Max, Maya, and photoshop.
- First, I know it's hard to stress the importance of networking (not the programming kind) to students, but it really is one of the most important things coming out of this program. Second, I feel like students aren't effectively prepped in their first semester for how to best utilize their time in the program. Everyone in the Game Design major should understand each of the main pillars

of Game Development and this major provides that, however, I feel it is immensely important to get the student to focus on a specific career path within Game Development. A student should know by the end of their first year whether they want to be a 3D artist, concept artist, technical artist, programmer, etc. and the rest of their course work and schedule should tailor as much as possible to that focus.

- Professors seem to be very artistic-centeric overall. Their professions, while amazing, focus more on art than the other aspects of Game Design. If there was someone that programmers could work with/aspire to be, i can see that being very beneficial for those students
- I would not recommend someone attend Fitchburg State University for the purposes of learning Game Design
- My feelings toward college as an institution. Kidding. Nothing, probably.
- Overall, I believe that the focus from day one should be understanding the expectation of the industry and pushing students to create portfolios in light of industry professionals and standards. I know you all do this indirectly but I think students need to be made aware this this is make or break. The effort they put in from day one will be visible until the day they leave and that can often determine whether they get a job. As Les once told to me, you need to want to create more and push your skills to improve. That's what makes you an artist.
- I enjoyed Fitchburg a ton and I loved every class each of you taught me but I do thing I got lucky compared to a lot of my peers. Sure I put in a lot of work during my capstone project but I wish I had take things way more seriously and understood the stakes from day 1. Not sure if you guys are responsible for that but I'd be happy to help deliver that message.

- Lastly, I'd love to get more involved with the current students to help give back any of the knowledge that I've collected from working in the industry and just impressing the importance of working and honing your skills. I've talked a bit to Jeff about it but I'd love to create some sore of mentorship program of some sort. I think it would really benefit the students tremendously.
- Just being aware of students who are not aiming for going into a big gaming studio. I graduated with this degree, but I knew I was only going to use it for education, social media, freelancing, etc.
- Having not gone into the games industry after a rather rude awakening at GDC 2018, I still don't regret my game design education. I learned incredibly valuable skills, was given room to experiment and attempt a leadership role in the community, met some of my dearest friends, and did in fact make some good games. I experienced exponential personal growth and the faculty were key to that, and they should be given all the credit in the world for building a niche program, and at a public institution!
- My hindsight can boiled down to, I think, unclear expectations both of students and of the program, hence my largest recommendation being a clear declaration of the program's focus. The only other structural problems with the Game Design program are those of any public institution, chiefly attempting to be selective (or self-selective) with the student body. Many students could benefit early on from the adage "If you can imagine yourself doing anything else, do that instead", alongside the expectation of outside work.
- This could have changed by now, but this was one of my biggest gripes with the Game Design Major. Participation in game design events being a required portion of my grade was very stressful for me. They were often far away and cost me gas money that I could barely afford. I went to one event that was a mixture of boring and upsetting because of an awkward talk and the people I met being rude (this is not typical behavior of the game industry community, I am sure, just a bad event). This gave the events a very negative connotation for me and made me want to go even less. I would’ve happily gone to the events if they were at/closer to the college, and I did

go to some such as John Romero’s Doom post Mortem and Pete Paquette’s animation talk, those were awesome. I would strongly encourage for those in-school events, whenever they happen, to be mandatory and graded, and the other off-site ones to be optional for extra credit.

- Please don't take this harshly! I just want future students to be prepared and get the best education. Since I've moved, i've found I like the medical field and start my pre-reqs for RN school this January. My Game Design professors will always be the best ones i've ever had though. You guys rock
- Just wish I had started with a huge interest in code. It seems without coding experience, or amazing art with every application there is a more qualified person in the field. Just wish things had been more digestible.
- I feel that the program necessitated that I teach myself many technical aspects of my preferred niche in game design (coding). That was overall a very very good thing. In my job, I have had to learn new technologies pretty regularly to perform daily tasks. This is viewed as normal and part of the job and I hope it continues to be enforced in this program. Being able to read docs and research issues on my own is such an invaluable skill, I cannot stress it enough.
- The lack of opportunity on the east coast
- With how fast the industry changes, what is a new technology that you believe we should teach in Game Design courses? (I feel you'll get the best answers from alumni)
- If people are going to focus on programming they should definitely take the "data structures and algorithms" class offered in computer science.
- I’d say that very little in my personal life went to plan after graduation so while I did attempt to find employment within the game design field, many other personal issues I have been dealing with initially derailed my hunt and it has been challenging to get back on track
- I'm sure y'all already know this but I would be more than happy to participate in any sort of event that helps helps current students and encourages growth, be it judging game jam again, giving a talk about programming or UI/UX, doing a panel on professional development, etc...
- I get the same number of interviews as my computer science major friends do in 6 months as they get in 1 month. We have similar callback rates (about 1/15), so no knock against my education, I think my resume is very good- but they send out about 6x the number of applications, and not for lack of trying on my part. The reality is that there relatively low job opportunity in this field. No big secret, I know. I am pretty confident I will get the game industry job I want, given enough time. But I doubt very many people who graduate this program end up with jobs in the industry. I think the program could benefit by being more focused- either a small program that prepares students to be AAA or mid-size indie employees, or a larger program that prepares students to be solo developers and gives them the business experience to form their own studios. Right now I feel like it's closer to the latter, so why not lean into it and be up front about exactly what the program is, set expectations accordingly, and make sure people are graduating with the skills to make their own path in the industry?
- My strongest skills and a focus on those particular skills. Time to time it felt like I was simply testing the waters to figure out what I liked, though this type of thinking is necessary it should not be the focus for every new game designer. I myself new what I wanted to be from the start and I just wish all my classes simply pushed me down those skills I exceeded in.
- How we feel we've been prepared on a professional and networking level. Always felt slightly abandoned in that aspect throughout my college career. However, I understand this requires a new specially trained faculty member with these connections.
- The game design lounge was one of the most helpful places to get work done, decompress, and make friends in a rough period of my life, and the friends i made there are still close today.

- I wish we had a designated professor that helps us get employed at the end of our 4 years there. That's always been my major complaint and concern.
- This survey is a good idea but I think it’s results will be flawed. I decided to step out of my comfort zone and look for other forms of employment due to my desired job being harder to find during a global pandemic. A lot of students may be experiences the same difficulties.
- Nothing
- I genuinely don’t know how to answer this question. I think if anything maybe keep an eye on groups forming with the same people all the time. There was always a “clique” where all the friends would go create a game together and if anyone didn’t have a friend group they ended up being left out and not having a place. Maybe for projects we should have a thing where we come up with an idea like in capstone and form groups based off of whoever’s idea gets picked? Or have the class take turns picking ideas so everyone gets a chance too!
- Three years later I'm still really happy with my overall experience and choice to pursue Game Design at FSU. Thanks!
- What career line are you looking to pursue and how can we help you get there?
- All the professors did a marvelous job, legitimately, they were some of the brightest parts of the school. Sam Tobin and Jeff Warmouth specifically.
- What goals are you looking to accomplish over the next 10 years, and how can we get you on the right track to accomplishing them?
- Setting up separate tracks of the program to be more geared towards specific area of focus/expertise instead of completely generalized.
- Placing people based on their skill-set is crucial to the major as there is a tenancy to have the work weight very unevenly distributed due to lack of skill of one or more members in the area they were placed
- Nothing. I haven't had enough coffee to dig to deep inwardly at this time. I loved FSU. The school. The professors. The belonging. I miss it, and in many ways I feel like I'm still there. I wish I have been a bit more productive professionally since, but all in good time.
- The program needs to be more critical of the work that is being made by students. As the years go by i see better work coming out of the new classes which I hope continues and makes me excited for what the next class will put out. I think there should be more crits for students in the art path so they can see the work being done by their peers. They need to always want to improve and they should be encouraged to look for critique outside of the classroom.
- I'm not sure if the structure of class assignments is very effective from a game development standpoint. Each time I worked on a game project, we'd build it up from scratch, and were given only a few weeks to do it. By the time I graduated, I was good at "starting" game projects, but never actually learned about polishing them. There just wasn't enough time, before we moved on to something else. But in the game industry, you need to work on something until it's clean and polished. You also don't have to begin from scratch each time, as code and assets are routinely reused between projects.
- If the asset production classes assignments were geared specifically toward the game development class assignments, I think that would go smoother. You would have time in each of the other classes to polish that one aspect of production, so that when it came to the creation of actually creating a playable game, you'd already have a series of assets and systems created and polished from other classes to work with, so you can now focus on design, production, and integration, instead of just art and code generation.
- Fitchburg State should help students who are graduating find employment.
- Apart from what I have already mentioned, it warrants mentioning again that my experience learning to program in the Communications Department was solid... but it was pretty mixed

outside of professors specifically within the Gaming major. I praise my lucky stars I had Professor Sethi for both Comp. Sci. I and II, because throughout my time at Fitchburg... I won't lie, I heard some horror stories coming out of the teacher-to-student dynamic with most other professors in the Comp. Sci. Department. I never encountered anything so dramatic personally, but the Game Programming course (prior to re-taking it with Jeff) offered by the Comp. Sci. Department was incoherent and borderline useless and pretty much killed my desire to pursue a minor in Programming at Fitchburg. Unless that department can get its ducks in a row, I think the more Programming that can happen "in-house" (i.e. within the Game Design major) the better.

- You guys are amazing, keep being amazing.
- keep on selling that importance of self-directed projects!!!! it's why i am where i am!!!!!!!!
- It was a good education, needs to have a more solid capstone project/ internship program

Appendix 4: Course Descriptions

COMM 2003 - History of Interactive Media and Games
This course examines the history and historiography of interactive media. Students will explore what “interactivity” has been, is, and might become. This class provides a wide-ranging history of the uses, effects and design of interactive media from their beginnings to the present. Students will study the history of the functions and forms of interactive systems thereby better equipping them as users as well as potential designers of interactive media. This course is required for game design majors. ART. Prerequisite(s): ENGL 1100

GAME 2000 - Elements of Game Design
This course introduces students to the process of planning and designing the interactive experience of game play. Students will develop a critical understanding of the formal, dramatic, and systems elements of games across a wide range of game styles and genres, from traditional physical games and sports to video games. Students will work individually and in teams to modify and develop tabletop games such as board or card games. Emphasis is placed on understanding game systems and fine-tuning the player experience through the iterative design process.

GAME 2001 - Games and Arts in Japan
This course explores contemporary arts and culture in Japan with an emphasis on the three pillars of Japan’s modern culture–video games, Anime and Manga. These contemporary art forms will be examined in the context of the country’s tradition of design, visual arts and culture in order to gain a better understanding of Japanese Game Art Aesthetics. The course will culminate in a study abroad trip to Japan.

GAME 2020 - Concept Art for Game Development
This course will teach students foundational art skills in drawing, painting and sculpting necessary for pre-visualization and 3D/2D game development. Students will combine studies in life drawing/anatomy with applying this to the creation of unique conceptual art for their games. Topics covered will also include character design, prop design, creative visual problem solving techniques, storytelling through visuals, art history as applied to video game development and direct application of these techniques to a final game product created in the class. Prerequisite(s): ART 1400, GAME 2000 and GAME 2200

GAME 2200 - Introduction to Game Art
This course provides an introduction to the concepts, tools and techniques of creating art for games. Students are introduced to visual literacy, concept art, storyboarding, and development of art for 2D and 3D games, while building proficiency in industry-standard 2D raster and vector software and an introduction to 3D software. Projects include interface design, 2D sprite and asset design, texture & background creation, 3D modeling, character design. Note:

Recommended to have ART 1400, ART 1600, or COMM 3810 or permission of instructor. May be taken concurrently with GAME 2000.

GAME 3000 - Game Design Workshop
In this course, students will design and develop several digital game prototypes, while building proficiency in an industry-standard game engine. Students participate in design pitches, presentations, critique, and team productions, learn to implement game logic through scripting, and deliver a final, playable game project. This course is cross listed with CSC 3010. Prerequisite(s): GAME 2000, GAME 2200 and CSC 1500

GAME 3003 - History by Design
In this team taught class, students in interdisciplinary teams will conduct historical research, interpret the past, and design virtual game exhibits for historical sites. Faculty in both history and game design will teach the basics of historical interpretation and design and how to apply them for public history. This course is cross listed with HIST 3003. Prerequisite/Concurrent Courses: COMM 1105 or GAME 2000 or HIST 1400 or HIST 1500 or HIST 1000 or HIST 1100

GAME 3005 - Mobile Game Design
This course will introduce students to the design and development of games for mobile platforms including iOS and Android. Students will explore the relationship between design and technology from user, designer, and developer perspectives, create several digital game prototypes to test on mobile devices, and prepare a final game to be published on a mobile platform. Prerequisite(s): GAME 3000

GAME 3010 - Game Narrative Design
This is a writing-intensive course in which students develop the dramatic and narrative elements of games. Topics will include brainstorming & idea development, world building, modes of interactive storytelling, structures of narrative, building story arcs, character development, dialogue, and proper writing technique. The course also covers writing formats for game design documents. Prerequisite(s): GAME 2000 and ENGL 1100

GAME 3030 - Game Level Design
In this course, students will learn concepts, tools, and techniques to design and build playable game levels or environments for a series of “off the shelf” games, both pen and paper and digital. The ability to modify games is crucial to the development of a game designer, and level design remains a core competency for aspiring professionals. Over the course of the semester, students will develop crucial perspectives on iteration, challenge, spatial and temporal dynamics, environmental and architectural design, and gameplay balance, while building the requisite technical and aesthetic competencies involved in developing with an industry-standard 3D game engine, including modeling & construction, placement and editing of objects and textures, lighting design, animation and scripting. Prerequisite(s): GAME 2000 and GAME 2200

GAME 3040 - Virtual Reality Development

This course introduces students to virtual reality (VR) development, the principles and history of VR and VR systems, as well as how this rapidly advancing medium can be used in interactive and narrative entertainment, education and training, art and film creation, and other content areas. Topics include 3D interaction and VR user interface types, haptics, human perception, social VR, telepresence, augmented reality (AR) and the philosophical and scientific implications of how virtual reality may inform and alter human perception of reality. Students will playtest and critique a variety of VR games and apps, and work individually and in groups to create VR projects. Prerequisite(s): GAME 3000 and GAME 3030

GAME 3050 - Serious Games
In this course, students learn principles of serious games: games as a means of social engagement pedagogy, learning games, editorial games, games for change, and the overall persuasive and rhetorical possibilities of games. Serious games offer game designers and players the chance to engage with social problems, activism, political processes and even propaganda. Students will playtest a variety of existing examples, then work in teams to design and implement and to complete a serious games project. Prerequisite(s): GAME 3000

GAME 3060 - 3D Game Development
In this course, students will continue to build proficiency with an industry-standard 3D game engine. Students will work individually and in production teams to explore game modeling, environmental and architectural design, character development and world building, while balancing game elements, objectives, challenges & rewards. The course will culminate in the creation of a 3D game with original content, for computer or console. Note: GAME 3070 is recommended. Prerequisite(s): Minimum grade of 2.0 in GAME 3000 and GAME 3030

GAME 3070 - Intermediate Game Art
In this course students will learn core concepts for creating artwork for digital game development. Topics include 3D modeling, 2D sprite creation, texture painting, material creation, animation and implementing artwork into a real-time game environment. Projects will include creation of 3D and 2D game assets modeled, textured and game ready. Prerequisite(s): GAME 2200

GAME 3075 - Advanced Game Art
This course will build upon the skills learned in Intermediate Game Art for the purpose of creating game ready assets that can be incorporated into real time game environments. Topics covered will include digital sculpting, digital painting, material creation, animation and asset integration into an industry standard game engine. Students will combine studies in life drawing/anatomy with learning industry standard 3D sculpting tools toward the creation of completed character models. 2D game asset creation will be covered from sprites through digitally painted assets. Prerequisite(s): GAME 3070

GAME 3080 - 3D Animation

Students will learn the fundamentals of digital 3D animation, from modeled objects and characters to motion capture. Topics covered will be: principles of animation, movement and timing, frame composition, pre-visualization and storyboarding. Students will learn rigging for motion, lighting, animating and rendering frames, and exporting for 3D game engines. Prerequisite(s): GAME 2200

GAME 3500 - Advanced Game Workshop
This course introduces students to more advanced concepts in game design & development such as ideation, digital prototyping, interface design, usability testing, quality assurance, team work, project planning & management. Students will work in teams to conceptualize and execute an innovative serious, casual or indie game that draws on skills, concepts, and proficiencies learned in previous courses. Students will follow an iterative design path to develop, prototype, playtest, and ultimately deliver a complete, polished small game project. Prerequisite(s): Minimum grade of 2.0 in GAME 3060

GAME 3510 - Contemporary Issues in Games
In this course, students will confront a range of recent developments in gaming through reading, critique and design practice. Topics may include: virtual reality, gamification, monetization and wagering, new directions in interface, alternate reality and geotagged play, social networked games, or gaming communities. This class allows students to study and to make or modify games in order to respond to and directly address trends, problems and possibilities in gaming culture and aesthetics. Student work will take the form of both digital and analog game design (individually and in groups) as well as written and oral commentary and critique. This course may be taken up to two times for credit. Prerequisite(s): GAME 3000

GAME 3650 - Game Programming
This course covers main game programming techniques and related algorithms. Topics may include game program architecture, game engine design patterns, game library, rapid prototyping and game testing, bitmap handling through programming, sound and music in game programming, pathfinding algorithms, and 3D programming. Game programming tools will be implemented using Object-Oriented paradigm and students will be able to choose any appropriate programming language for their main project. This course is cross-listed with CSC 3650. Prerequisite(s): CSC 1550

GAME 4000 - Game Studies Seminar
In this seminar, students will read, discuss and write about the major questions, developments and movements in the study of games. Readings will be interdisciplinary and heterodox and drawn from classic works on games and play as well as the contemporary digital wave. In this course students will explore the histories of video games as well as the key ways in which video games, games in general and play have been theorized in the humanities and social sciences. Over the course of the semester the class will come to define play and how it relates to games, work, war, sociability, learning and other key concepts. Students will write a series of short

commentaries as well as a final paper. Prerequisite(s): GAME 2000, ENGL 1200 and Junior/Senior status.

GAME 4100 - Game Studio
Game Studio is a capstone graduation requirement for Game Design majors. It is a full-time, semester-long, pre-professional learning experience in which students work in teams to plan, design, develop, test, and prepare for publication of a significant game project, in an environment that closely mirrors a professional game studio. Candidates must successfully complete a Game Studio Qualification Program in the semester immediately prior to this course, which includes mandatory attendance at a series of seminars, and the development and defense of a professional portfolio before a faculty committee. Game Studio placement is competitive and based on academic performance, faculty recommendations, and performance in the Game Studio Qualification Program. The capstone requirement may be fulfilled by Game Studio or by COMM 4880 Internship. Prerequisite(s): Completion of all LAS requirements, and previous Game Design Major requirements with a cumulative GPA of 2.5 or better; portfolio review and interview process.

COMM 4880 - Internship
The Communications Media Internship is a full-time, semester-long, pre-professional learning experience that is designed to successfully link academic preparation with successful entry into a student's career path. Interns must successfully complete an Internship Qualification Program in the semester immediately prior to the internship, that includes mandatory attendance at a series of seminars, the development and defense of a professional portfolio before a faculty committee, and an internship placement interview with the Program Director. Internship placement is competitive and based on academic performance, faculty recommendations, and performance in the Internship Qualification Program.

Communications Media Course Listings
- COMM 1105 - Introduction to Communication and Media Studies
- COMM 1120 - Message Design
- COMM 2003 - History of Interactive Media and Games
- COMM 2005 - Introduction to Social Media
- COMM 2012 - Color Dynamics
- COMM 2100 - Video Production Fundamentals
- COMM 2200 - Typeface Design
- COMM 2320 - Script Writing
- COMM 2400 - History of Photography
- COMM 2405 - History of Film I
- COMM 2415 - History of Film II
- COMM 2420 - History of TV
- COMM 2430 - History of Graphic Design
- COMM 2450 - History of Documentary
- COMM 2800 - Journalism

- COMM 3009 - Packaging Design
- COMM 3010 - Introduction to Professional Communication
- COMM 3013 - Multi-Camera Television Production
- COMM 3017 - Short Film Story Development
- COMM 3024 - Post-Production Essentials
- COMM 3025 - Social Media Campaigns
- COMM 3200 - Contemporary Cinema
- COMM 3304 - Interactive Media Project Design
- COMM 3305 - Web Design
- COMM 3306 - Web Design and UX Basics
- COMM 3309 - Interface Design
- COMM 3350 - DVD Authoring
- COMM 3430 - Writing for Advertising
- COMM 3460 - Public Relations
- COMM 3470 - Document Design
- COMM 3505 - Introduction to Film and Video Production
- COMM 3506 - Pre-Production Planning for Film and Video
- COMM 3510 - Audio Production for Film and Video
- COMM 3520 - Intermediate Digital Cinema Production
- COMM 3521 - Intermediate Documentary Production
- COMM 3530 - Editing
- COMM 3550 - Producing
- COMM 3560 - Sound Design
- COMM 3580 - Lighting
- COMM 3600 - Photography I
- COMM 3610 - Photography II
- COMM 3620 - Photography III
- COMM 3630 - Large Format Photography
- COMM 3640 - Color Photography
- COMM 3645 - Digital Photography
- COMM 3660 - Photo Management
- COMM 3690 - Photography Seminar
- COMM 3710 - Intermediate Film Production
- COMM 3730 - Directing
- COMM 3740 - Compositing and Visual Effects
- COMM 3750 - Cinematography
- COMM 3760 - Film Styles, Genres, and Movements
- COMM 3765 - Writing for Film and Video
- COMM 3810 - Introduction to Graphic Design
- COMM 3820 - Intermediate Graphic Design
- COMM 3830 - Illustration
- COMM 3850 - Publication Design
- COMM 3860 - Writing for Organizations

- COMM 3870 - Feature and Magazine Writing
- COMM 3880 - Typography
- COMM 3895 - Advanced Documentary Production
- COMM 3900 - Image and Design
- COMM 3940 - Motion Graphic Design
- COMM 3950 - Advanced Graphic Design
- COMM 3955 - Motion Graphic Design II
- COMM 3960 - Advanced Cinema Production
- COMM 4000 - Writings in Aesthetics
- COMM 4010 - Information Design
- COMM 4200 - Human Communication
- COMM 4205 - Seminar in Communication Theory
- COMM 4206 - Media and Society
- COMM 4211 - Writing for the Professional Artist
- COMM 4212 - Marketing Communication
- COMM 4220 - Organizational Communication
- COMM 4230 - Communication Law and Ethics
- COMM 4240 - Media Criticism
- COMM 4250 - Research Seminar
- COMM 4260 - Advanced Professional Study
- COMM 4270 - Pre-Press Production
- COMM 4280 - Intercultural Communication
- COMM 4281 - Gender and Communication
- COMM 4880 - Internship

Appendix 5: Portfolio Defense

Portfolio Defense Data from Fall 2015 through Spring 2017

Game Design

N = 38	[Material Quality]	%	[Design Quality]	%	[Presentation Quality]	%	[Sequencing]	%	[Professional Usefulness]	%
Unacceptable	2	5.26%	4	10.53%	4	10.53%	2	5.26%	4	10.53%
Needs Improvement	12	31.58%	10	26.32%	9	23.68%	9	23.68%	8	21.05%
Acceptable	10	26.32%	12	31.58%	15	39.47%	17	44.74%	15	39.47%
Exceeds Expectations	6	15.79%	6	15.79%	4	10.53%	5	13.16%	4	10.53%
Excellent	8	21.05%	6	15.79%	6	15.79%	5	13.16%	7	18.42%
	38	100.00%	38	100.00%	38	100.00%	38	100.00%	38	100.00%

Portfolio Defense Evaluation Form

* Required

1. **Student's Name:** *
   (Full Name)

2. **Student's Concentration:** *

3. **Name of Faculty Evaluator:** *
   (Last Name)

4. **Current Semester and Year:** *
   (i.e. Fall 2015)

5. *
   Mark only one oval per row.

	Unacceptable	Needs Improvement	Acceptable	Exceeds Expectations	Excellent
Material Quality	◯	◯	◯	◯	◯
Design Quality	◯	◯	◯	◯	◯
Presentation Quality	◯	◯	◯	◯	◯
Sequencing	◯	◯	◯	◯	◯
Professional Usefulness	◯	◯	◯	◯	◯

Appendix 6: Game Studio Capstone Guidelines

Game Studio Capstone - Guidelines
Spring 2021

Welcome to Game Studio, the Capstone course for the Game Design major!

As you know, Game Studio is a full-time, semester-long, pre-professional experience in which students work in teams to plan, design, develop, test, and prepare for publication a significant game project, in an environment that closely mirrors a professional game studio.

This document outlines some of the logistical guidelines & expectations for the semester. We have tried to make it as comprehensive as possible, based on past iterations of the course. However, every semester is different, and this may need some adjustment or interpretation.

A few things to note: **Game Studio is neither a job or a class**; it is a learning experience that aspires to prepare students for a creative professional environment.

Students

This document shows the Current Students in Spring 2021 Game Studio and includes contact info.

- Students will work with faculty to select the projects to develop, set production milestones, and maintain the production schedule.
- Students are expected to be largely self-directed and managed throughout the semester. You should expect to:
    - Fully participate in the Studio and project(s) in development
    - Maintain a total of 36-48 hours per week at the studio, including the core studio hours of 9:30-3:30 Mon-Fri.
    - Maintain a daily log and weekly journal to track your hours, tasks, and what you are learning.
    - Define and excel in your production role(s) throughout the semester.
    - Communicate with your team members and faculty about your work.
    - Update your CV and portfolio with work completed during Game Studio
    - Complete additional written internship assignments
    - Attend and participate in events, including showcases, studio visits, lectures, and meetups, some of which may be on evenings or weekends. *(Due to COVID-19 we expect all, or most, such events will be online/virtual)*

Faculty

Jeff Warmouth and Les Nelken will co-teach the course this semester. On Monday mornings from 9:30-11:45, we will hold Full Studio meetings, Sprint retrospective & planning sessions, pitches, demos, etc. Based on the needs of the studio, we can schedule other regular meetings, and there may be some informal check-ins at any time.

Faculty serve as facilitators, not job supervisors.

- We are available on request for problem solving or emergencies
- We will also check in through Slack, email or other online social media
- Evaluation/Grading is by faculty, with significant input from team members.

Collegiality and Professionalism

Maintaining a stress-free and safe work environment, for yourself and others, is an important part of professional life. The successful team member will:

- Act with civility and collegiality towards others.
- Keep disagreements civil; make sure that arguments do not get out of hand.
- Do not contribute to drama, stress, distractions, or negativity in the studio environment.
- Start on time and make sure you are keeping your studio hours.
- Minimize distracting behavior (i.e. interrupting others while working, etc.)
- Wherever you're working- maintain personal hygiene. We really cannot stress this enough. At a minimum: shower daily, wash hair regularly, wear shoes and deodorant, don't overdo artificial scents.
- In general, help to keep morale high and interpersonal strife at a minimum.
- Intervene positively if you find that others are not following these guidelines.
- Approach faculty if there are persistent issues that you are not able to resolve.

Health & Safety Expectations and Protocols Regarding COVID-19

Important info if you're on campus or visiting campus:

Public health is everyone's responsibility. All students are expected to comply with the rules and precautions implemented by the University, including, but not limited to, wearing face coverings, washing or sanitizing hands, social distancing, monitoring of symptoms, and self- reporting of symptoms or a positive COVID diagnosis. Behaviors that jeopardize the health and safety of the University community will not be tolerated. Students suspected of, or found to be in violation of, the preceding may be immediately removed from the residence halls and/or the University, pending further action. Failure to comply with these rules and precautions implemented in response to COVID-19 is a violation of the University's Code of Conduct and could subject students to sanctions, up to and including expulsion from the University. Consistent with the university's statement of non-discrimination, Fitchburg State will not tolerate discrimination, profiling, bias, or any form of racial intimidation in conjunction with this or any other COVID-related policies. Any reported incidents will be addressed in accordance with university policy.

Please follow the standards below:

SOCIAL DISTANCING. *Stay at least six feet apart when able, and be mindful of distancing in enclosed spaces.*
HANDWASHING. *Wash hands often.*
FACE COVERINGS. *Everyone on campus is required to wear a face covering over the nose and mouth when indoors. This includes classrooms, public restrooms, open office and common spaces, hallways, meeting rooms, libraries, and other indoor spaces. Students who enter facilities without a face covering will be asked to leave. Face coverings are also required outdoors when six-foot physical distancing cannot be maintained.*
CLEAN THINGS THAT ARE FREQUENTLY TOUCHED. *doorknobs and countertops) with household cleaning spray or wipes.*
SYMPTOM CHECK. *Watch for fever, cough, shortness of breath, or other symptoms of COVID-19. All students should remain where they are and notify the Office of Student Affairs (978.665.3130) if they are experiencing symptoms. If the onset of the symptoms occurs after regular business hours, remain in place and call University Police (978.665.3111).*
For additional guidelines and information, please see the coronavirus web page

Course Description (from the Syllabus, *see full Syllabus on Blackboard)*

Game Studio is a capstone graduation requirement for Game Design majors. It is a full-time, semester-long, pre-professional experience in which students work in teams to plan, design, develop, test, and prepare for publication a significant game project, in an environment that closely mirrors a professional game studio. Candidates must successfully complete a Game Studio Qualification Program in the semester immediately prior to this course, which includes mandatory attendance at a series of seminars, and the development and defense of a professional portfolio before a faculty committee. Game Studio placement is competitive and based on academic performance, faculty recommendations, and performance in the Game Studio Qualification Program. The capstone requirement may be fulfilled by this course or COMM 4880 Internship.

Goals (from the Syllabus, *see full Syllabus on Blackboard)*

- Students will apply and enhance their skills in game design, art, programming, writing, and management.
- In the first week, students will develop pitches and prototypes for a game project to develop over the semester (see Project Pitches).
- During the second week, students will present these proposals, after which students & faculty together will decide which project(s) will be developed and will organize development teams based on project needs and student skills/interests.
- Throughout the production cycle, teams will develop and update milestones, use Agile/Scrum/Burndown sheets to track their progress, and use source control to maintain their projects.
- Each team will develop collateral materials for their game, including design documents, visual identity, website, social media and other materials.
- In addition, students will work to hone their own professional portfolio and individual skills.

- When possible and appropriate, professionals from industry and related institutions may also offer critique and guidance.

Game Studio is a learning experience where teams of self-directed students work on games full time using industry methods to achieve professional results.

Objectives & Outcomes (from the Syllabus, *see full Syllabus on Blackboard)*

- Gain experience working in a professional production environment
- Demonstrate the interpersonal skills necessary to work in a collaborative studio, including self-motivation, independence, and team-building.
- Learn to recognize your own performance in a group dynamic, with the aim of enhancing strengths and minimizing weaknesses.
- Effectively apply the Agile / Scrum methodology to a full-time production schedule
- Successfully meet milestones throughout the semester.
- Professionalize your skills to prepare you to enter your chosen field.
- Experience the entire production process, from pitch to publication.
- To understand and implement professional work-flow and source control methods.
- Develop and refine a portfolio through the creation of work in a chosen area of interest (art, programming, design, etc.).

Logistics

Attendance & Studio Hours

Whether virtual or in a meatspace office, this is a professional environment with a consistent daily production schedule. You are expected to be present and fully engaged every day throughout the semester.

- You are responsible for maintaining 36-48 studio hours per week, to earn 12 credits as mandated by the US Dept. of Education. (12 studio credits *represents 36-48 hours per week of supervised and/or independent practice*.)
- Keep a daily log of your hours and tasks you performed (in addition to burndown sheets or other task management software, such as Trello or Jira, that your team may use)
- Like many game studios, we will also maintain **Core Hours. Those are typically Mon-Fri 9:30-3:30**. You must be available during core hours (minus lunch break). You may not work another job or attend a class during these core hours.
- Weekly Full Studio meetings are every Monday, 9:30 - 11:45. This will include announcements, project & studio updates, Sprint Retrospective & planning, etc.
- For those of you participating remotely, we will use Zoom. ***** CAMERAS REQUIRED *****
- The team should organize Daily Standups at 9:30 (or other agreed-upon time) Tuesday-Friday.
- Meetings should only be scheduled during core hours. If you are sick you should still try to be available for daily standup, and if possible to remotely attend meetings, etc.
- You are also expected to attend outside events (see Events)
- You are also expected to maintain a weekly journal. This should be a more subjective & reflective process. Note any new things you learned, roles you performed, etc.

Facilities
For those of you participating in person:

- The Game Design Studio is located on the 2nd floor of the Main Street Theater Block, 717 Main Street, Fitchburg, MA, designed by Icon Architecture.
- Across the hall is the Idea Lab, a business incubator which hosts clients including the nonprofit organization NewVue Communities.
- Please be aware that you are working in a shared professional environment, and that there may be other scheduled activities in the building.
- You have 24 hour access to the building, 7 days a week until the last day of final exams. The building is fully wired with security cameras viewable by campus police.
- Please let faculty know if there are any issues with facilities or security.

Kitchen, Lunch, Coffee

- The kitchen contains a Keurig coffee maker; students are responsible for their own coffee/tea pods, cream, sweeteners, etc.
- If you are on the meal plan, you can eat on campus, just pay attention to the shuttle schedule (see Transportation/Shuttle - 11:45 & 1:00)
- The entire studio cannot simultaneously use the microwave, so work together or eat in shifts if needed.
- If you can afford eating out for lunch, some of our favorite downtown Fitchburg lunch spots are:
    - Strong Style Coffee (great coffee, amazing grilled cheese). They can also provide a daily carafe of coffee at a discount if you'd like something better than Keurig.
    - El Bohio (Dominican comfort food - roasted pork / chicken, beans & rice, etc.)
    - Zapata! (Mexican - awesome $2 street tacos on Tuesdays - they also run a taco truck some days by City Hall on Water St.)

Transportation/Shuttle

- Shuttles from Campus to the Theater Block leave Aubuchon Hall Mon-Fri at:
    - 8:30 AM
    - 11:45 AM
    - 1:00 PM
    - 5:00 PM
    - 6:30 PM.
- It should take about 15 minutes to reach the Theater Block, after which it loops to the Civic Center and back through campus.
- You can also take ANY campus shuttle to the Intermodal and transfer to a Route 5 or 6 bus, (free with your OneCard).
- Free Parking is available in the University-owned lot 1 block away on Central Street. If you are driving past the studio, turn right on Central St. The parking lot is to your right.

- Finally, walking is an option - the Theater Block is a 20-25 minute walk from campus.
- If you are on the meal plan & use the shuttles, your lunch break would be 11:45-1:00, though you will need to stay until 6:30 a couple nights per week to fulfill the minimum of 36 hours

Events

Note: *Due to COVID-19 we anticipate most events and networking group meetings will be online, and some may be cancelled. If virtual attendance is the only available option for any of these listed below, then this is acceptable.*

In addition to the Game Studio hours, you will also be responsible for attending a handful of additional events, including game showcases, studio visits, lectures, and professional meetups. Most of these take place on evenings or weekends, so please plan ahead.

In a Fall Semester, this may include the Boston Festival of Independent Games (BFIG) and the New England Student Game Design Showcase. In a Spring Semester, this may include the PAX East Made in MA event in late Feb. or March.

For some of these, you will be presenting your game in-progress.

- At least ONE Boston Post-Mortem meetup (link for BPM on: **Boston Game Dev**)
- At least TWO additional professional meetups:
    - Boston Indies
    - Boston Unity Group
    - Boston Virtual Reality
    - Boston Unreal Engine Meetup
    - Boston Illustration & Concept Art Meetup
    - Women In Games Boston
    - Women Who Code Boston
    - Worcester Game Pile
    - or another meetup approved by your instructors

Note: A number of these networking groups require an RSVP through **Meetup.com.** If you do not already have a Meetup.com account, create one and join the groups. Several of the groups are part of the **Boston Game Dev** collective, be sure to join it.

Game Projects

Projects & Pitches

The project(s) will come from the students, though faculty will help to determine feasibility and otherwise shape their creation. Early during the second week of the semester, students will pitch proposed game concepts. Proposals can be from individuals or student teams. We highly recommend that your pitch includes BOTH a slideshow AND a working prototype and other

collateral material - anything you can do to convince your studio-mates that your idea is the best one to develop.

Clearly, the scope of the proposed project must be considered. Factors to be determined on a per-project basis include:

- Feasibility
- Appropriateness of matching project to team members' skills & career goals
- Ability for team members to add to portfolio
- Publishing format, platform, engine, versioning, monetization model, interface, etc.

Project Milestones

On a weekly basis, the schedule will be organized around various releases of your proposed game. Every Friday afternoon the team will officially release a new version of their game, ready to demo/playtest. Monday mornings will be dedicated to Sprint Retrospective & Planning sessions.

We recommend that Even-numbered weeks are dedicated to implementing new features. Odd-numbered weeks are dedicated to bug fixes. Commencing with week six (6), the teams should begin to conduct public formal playtest sessions.

Student Teams will be responsible early in the semester for creating and maintaining a schedule of milestones.

Agile/Scrum

Teams will organize themselves using the Agile project management methodology used extensively in the game industry. A key feature of Agile is the Daily Standup, which is a brief stand-up meeting (literally everyone stands up to keep the meeting short) in which all team members answer the following questions:

- What did I accomplish yesterday?
- What do I plan to accomplish today?
- What blockers are getting in the way?

Scrum progress is typically organized into Sprints of 1-2 weeks. The goal at the end of each sprint is a new official build or release of the game. Each Sprint begins with a planning session, which generates the Backlog, a document that contains all desired features to incorporate during the Sprint. Progress on each task during the sprint is recorded in the Burndown Chart, a document which monitors team and individual progress on a daily/hourly basis, and helps to predict how closely the team is meeting its Sprint goals.

- Monday mornings will be devoted to Sprint Retrospective and Sprint Planning for the upcoming week's sprint.

Core Mechanic & Playtests

A crucial aspect of iterative design is the playtesting cycle. **Eric Zimmerman suggests that the core mechanic of a game should be prototyped no later than 20% of the way through the production cycle, which translates to Week 3.** Meaningful playtests must be conducted early, and throughout the process, so that feedback can be incorporated into the game's evolving design. Play testers will be recruited from other game courses as well from on and off campus pools of potential players.

Shared Work Environment & Communication

We recommend a few best practices:

- Create a Slack workspace for studio communication.
- All documents created for the studio semester should be stored in this **shared Google Drive folder** created by faculty, including planning documents, burndown sheets, daily logs, assets, etc. Note that you must be logged in to your Fitchburg State Google account to access this folder.
- This is a link to the **Game Studio Google Calendar**
- We strongly recommend using source control (the default is GitHub).
- If you are using your own laptop or PC, please ensure that you are using the same software versions as the rest of the development team, to avoid catastrophes!

Professional Development

Throughout the course, students will also be expected to engage in professional development, for which they will be assessed accordingly. These activities will include:

- Incorporating work-in-progress for the team project into the portfolio
- Updating résumé, website, and professional social media (LinkedIn, etc.)
- Attending local events, lectures, and networking meetups, such as Boston Post Mortem, Boston Playcrafters, Boston Unity Group, Boston Unreal Group, Boston VR, etc.
- Attending or participating in industry conferences, such as PAX East, Mass DIGI Game Challenge, Boston Festival of Independent Games, or the Game Developers Conference
- Participating or organizing visits with game studios in the region
- Sharing games in progress with visiting professionals and incorporating their feedback
- Researching and applying for a professional position, writing a cover letter

Projects/Pitches:

Please DO think of potential pitch ideas. We will hold the first pitch session the 2nd week of classes, so if you have a game idea you want to pitch, please have a demo/presentation ready to go.

We STRONGLY recommend having a working prototype to demonstrate.

Consider a range of project types: 2D as well as 3D, a mobile project, possibly a client project. It may also be good to consider a game project that does NOT involve shooting, slashing, or other depictions of violence, or a project that is NOT primarily targeted to a "hardcore" gaming audience.

There is a list below of previous Game Studio Projects. Please look through these, play as many as you can, and critically analyze them all, individually and in groups (feel free to self-organize).

- For each game, what aspects seem to be most successful?
- For each game, what are the major failing points? How might the team have improved these aspects?
- Which games were (and were not) successful at generating portfolio material for team members?
- What kinds of games/projects are missing?
- What other kinds of games do you feel should be represented in Game Studio?
- Based on this, do you have any concerns, goals, or new ideas?

Previous Game Studio Projects

Here are the games created by previous semesters of Game Studio. We recommend playing these, viewing trailers, etc. to get a sense of what has been done in the past.

Game Studio Capstone - Collection by Fitchburg State Game Design

- Fall 2021 - Quarantine
- Spring 2020 - Code Rot Games (also linked from https://fitchburgstate.itch.io/)
    - Land Under Rot
    - Dextra
- Fall 2019 - Hydration Games
    - Lore, Tile Heroes, Neo Inferno
- Spring 2019 - Punch Brook Games
    - Dark World Burger, Dab Revo, The Magus' Apprentice
- Spring 2018 - Stopped Clock Studios
    - HuntFell, Pizza Time!
- Fall 2017 - Underworld Allies
- Spring 2017 - Happy Birthday Kai, Jr.
- Summer 2016 - Inverminator (this was FSU's first Game Studio capstone, it was a 4-person team)

We look forward to working with you this semester!
-Jeff & Les

Faculty Data

Appendix 7: Faculty Credential Table

Name	Rank	Type of Appt	FT or PT	Highest Degree	FTE by Prog.	Very Brief description of Activity		
						Teaching	Scholarship	Service
Jonathan Amakawa	Assoc.	T	FT	MDes	1.0 Game	Game development, art & design, serious games, history	Serious games in the mobile space, augmented reality	International studies
Les Nelken	Assoc.	T	FT	MArch	1.0 Game	Game development, level design, narrative design, virtual reality		Club advisor Visions Committee
Britton Snyder	Assoc.	TT	FT	MFA	1.0 Game	Game art, animation, Game Studio		Visions Committee
Samuel Tobin	Assoc.	T	FT	Ph.D	.75 Game .25 Comm	Game Studies Seminar, Elements of Game Design, History of Interactive Media and Games	Research and publication on games, play, everyday life, tabletop war games, roleplaying games, game history.	Club advisor Curriculum Committee Graduate Committee
Jeff Warmouth	Prof.	T	FT	MFA	1.0 Game	Game Design Workshop Game Studio Capstone Game Programming Mobile Game Design interactive media	Visual art & media Video installations Interactive sculpture Art on the Marquee	Game Design coordinator Club advisor Curriculum Committee

Appendix 8: Faculty Demographic Data Table

Demographic Faculty Summary	**No. of Full Time Assigned to Unit**	**No. of Part Time Assigned to Unit**
Women		
Men	5	
Ethnicity		
White/Caucasian	5	
Asian	1	
Hispanic/Latino		
Black/African American		
American Indian		
International or Other		
Credentials – highest degree held		
Bachelor's Degree		
Master's Degree	4	
Doctorate	1	
Experience		
0-3 years		
4-7 years		
8-11 years		
12-15 years		
16-24 years	4	
25+ years	1	

Appendix 9: Game Design Coordinator

Alternative Professional Responsibilities (APR)

- **Faculty Name**: Jeffrey Warmouth
- **Faculty's Department**: Communications Media
- **Period Requested**: AY22
- Fall 2021 - Workload Reassignment: 1 course/3 credits
- Spring 2022 - Workload Reassignment: 1 course/3 credits
- **History of Request**: ☐ New Request ☒Existing APR
- **Sources of Funding**: ☒ University ☐ Grant Funded

Describe in detail the responsibilities to be assumed by the applicant. Please be sure to address principles 2 a-e above (page 1), including how the responsibilities align with the University's strategic plan, if it is related to accreditation, its support of student success and campus/School priorities, the quantity of reassigned time, the scope of work, and number of students directly served per year.

Game Design is an innovative and distinctive major at the University. According to SSC, the enrollment in the Game Design major for the Fall 2020 semester was 168 students. The Game Design Coordinator's responsibilities include the following:

- Coordinate class schedules for five Game Design faculty members and manage classroom assignments in specialized computer labs across multiple buildings on campus
- Oversee the program budget and complete budget requisition paperwork
- Research all purchases of equipment, hardware, software, supplies, tabletop and digital games, etc.
- Manage Student Game Design Tech Assistants' schedules and responsibilities
- Oversee maintenance of all Game Design equipment and facilities in Conlon Hall and the Theater Block in coordination with department and University staff
- Coordinate with Technology department on hardware and software purchases, system and software updates, and on-campus & remote software licensing
- Manage the loaning of equipment to students for remote use, as needed
- Act as a point of contact for current and prospective Game Design students with questions or concerns about advising, classes, career preparation, or technical issues
- Coordinate on and off campus events related to Game Design, including student showcases, guest speakers, game jams, Visions, and the PAX East convention
- Assist with prospective student recruitment and Admissions events, as needed
- Manage the portfolio defense process and scheduling for all Game Design students preparing for their Capstone requirement, in coordination with the Internship Coordinator

The Game Design Coordinator position requires significant administrative duties, management, and leadership beyond the scope of a faculty member's core responsibilities as described in the MSCA contract. This APR provides considerable benefit to the Game Design major and Communications Media department, and directly serves well over 100 students a year.

Resources

Appendix 10: Starting Budget

Game Design Program Starting Project Expenses

Classroom Upgrade - CCS Presentation System	$43,224
Equipment Orders	$253,665
Software Orders	$58,175
Instructional Materials - Games, consoles, peripherals	$5000
Marketing	$5000
Total	$364,950

Program Starting Software Orders

Item	Quantity	Vendor	Price	Price	Maintenance
Unity Pro Perpetual w/ iOS & Android	53	Studica	$495.00	$26,235	None
Source U (Using Free Version)			$ -	$ -	None
Unreal Engine (Open Source)			$ -	$ -	None
Playmaker	53	Academic & Collegiate Software	$50.00	$2,650	None
Zbrush 4R5 Floating License Fee	1	journeyEd	$940.00	$940	
Zbrush 4R5 Win/Mac Floating Lic Academic (Electronic Download)	53	journeyEd	$352.00	$18,656	
Autodesk Entertainment Creation Suite	54	Studica	$89.00	$4,806	None
Autodesk Entertainment Creation Suite Annual Support			$495.00	$495	$495.00
GameMaker for Windows	0	Academic & Collegiate Software	$42.99	$ -	$ -
Marmoset toolbag	27	SHI	$59.00	$1,593	
FacShift (Freelance Version - Academic)	10	Faceshift	$280.00	$2,800	$2,800.00
Total Software Orders				**$58,175**	

Program Starting Equipment

Item	Room Number	Quantity	Vendor	Price	Extended Price	P.O. #
HP 23" Widescreen LCD Monitor	N304	65	Govconnection	$ 204.00	$13,260	P0055988
Total - Monitor Order - Hewlett Packard		65			$13,260	
Gaming PC (Config #2)	N301	22	GovConnection	$ 3,374.00	$74,228	P0056028
Gaming PC (Config #1) Out to Bid	N302	24		$2,871	$68,901	P0056026
Total Gaming PC Orders		46			$143,129	
Hp Laserjet Pro P3015dn Printer	N302	2	Amazon	$ 569.99	$1,140	Amazon order #105-3486936-9297058
Total - Printer Order		2			$1,140	
Epson Perfection v500 Photo Scanner	N302	2	Amazon	$ 149.99	$300	Amazon order #105-3486936-9297058
Total - Scanner Order - Amazon		2			$300	
					$0	
Apple iMac 27"	N302	4	Apple Computer	$ 2,513.00	$10,052	P0055990
Mac mini 2.5GHz Core i5 4GB RAM	N303	4	Apple Computer	$ 678.00	$2,712	P0055989
iPad w/Retinal Display 16GB, Black		16	Apple Computer	$ 499.00	$7,984	P0055994
Total - Apple Order		24			$20,748	
Pen Tablets - Yiynova MSP19U Tablet	N304	21	Available only from Amazon	$ 599.00	$12,579	Amazon Order #105-6598346-5801051
Shipping					$451	
Total - Pen Tablets Order - Amazon		21			$13,030	
LG 60" Full HD LCD TV & Mount	N303	4	GovConnection	$1,452	$5,808	P0055986
Total - TV Order - GovConnection		4			$5,808	
Ergotron Tablet Charging Cart		1	GovConnection	$1,400	$1,400	P0055987
OpenStage V2.0 - 14 Camera System		1	Organicmotion	$57,850	$54,850	P0055995
$3,000 Software Maint fee for OpenStage paid by IT			***Not Included in Grand Total ***		$3,000	P0055995
Grand Total					$253,665	

Appendix 11: Operating Budget

FY20 Operating Budget – this is our typical annual operating budget

Program	GAMM	Game Design		
	Beginning Balance	Adjusted	Spent	**Balance**
	$6,985			
"F" (Teaching Supplies and Materials	3,000.00		0.00	**3,000.00**
"K" (Educational Equipment)	1,650.00		0.00	**1,650.00**
"L" (Equipment Rental/Maintenance/Repair)	1,000.00		0.00	**1,000.00**
"U" (Information Technology)	1,335.00		0.00	**1,335.00**
				6,985.00

Annual Operating Budget by Year

	2014	2015	2016	2017	2018	2019	2020
E00 - Admin Expenses	$2,000	$2,000	$1,350	$1,335	$0	$0	$0
F00 - Teaching Supplies	$0	$0	$3,000	$3,000	$3,000	$3,000	$3,000
H00 - Consultant Services	$0	$1,000	$0	$0	$0	$0	$0
J00 - Operational Services	$0	$1,000	$0	$0	$0	$0	$0
K00 - Educational Equipment	$2,500	$4,000	$1,650	$1,650	$1,650	$1,650	$1,650
L00 - Repair	$0	$0	$1,000	$1,000	$1,000	$1,000	$1,000
U00 - Information Technology	$4,000	$0	$0	$0	$1,335	$1,335	$1,335
Total	**$8,500**	**$8,000**	**$7,000**	**$6,985**	**$6,985**	**$6,985**	**$6,985**
Enrolled Students	40	76	121	140	178	178	178
Budget per student	$212.50	$105.26	$57.85	$49.89	$39.24	$39.24	$39.24

Game Studio - Lab Refresh 2017

Product Description	Vendor	Quantity	Unit Cost	Cost
Keyboard: Razer Ornata Chroma Gaming Keyboard	B&H Photo	21	$89.71	$1,883.91
Mouse: V7 Gaming Mouse 4000dpi	Connection	21	$12.50	$262.50
Computer: HP Z440 MT Xeon QC E5-1620 v4 3.5GHz / 8GB / 1TB / DVD SM / GbE / W7P64-W10P HP Workstations	Connection	21	$1,300.00	$27,300.00
8GB PC4-19200 288-pin DDR4 SDRAM RDIMM for Z440, Z640, Z840 HP Workstations Accessories	Connection	63	$139.00	$8,757.00
4-year CarePack Onsite Next Business Day Hardware Support for Workstation Only HP PSG/Services	Connection	21	$40.93	$859.53
GeForce GTX1080 PCIe 3.0 Turbo Graphics Card, 8GB GDDR5X Asus	Connection	21	$514.00	$10,794.00
1TB 850 EVO Solid State Drive (White Box B2B Packaging) Samsung Storage	Connection	21	$314.00	$6,594.00
Drive Bay Adapater 3.5" to Dual 2.5" Bays Enclosure Siig	Connection	21	$3.25	$68.25

Display: (1st of 2) LG 27UD60B 27" UHD IPS 4K Gaming Monitor	B&H Photo	18	$274.58	$4,942.44
Display: (2nd of 2) HP 21.5" ProDisplay P223 Full HD LED-LCD Monitor	Connection	10	$113.00	$1,130.00
Tablet: Wacom Cintiq Pro 16" (Option 1)	Connection	11	$1,350.00	$14,850.00
Logitech Pro Stream Webcam C922	CDW-G	21	$84.31	$1,770.51
			TOTAL	**$79,212.14**

Game Design Trust Fund Student Workers (FY19)

	Hours /Wk (M-F)	Weeks/ semester	Total Hours per Semester	Summer Hours/ Week	Weeks/ Summer	Total Hours per Summer	TOTAL Hours (Hours per Semester x 2) + Hours per Summer	Hourly Rate	SUBTOTAL	
Game Design Student Workers	40	15	600	75	8	600	1800	$11.25	***TOTAL Needed***	**$20,250**

Appendix 12: Student Technical Assistant Position

Game Design Technical Assistant
Part-Time Student Trust Fund (non-workstudy) position
Department: Communication Media

Description:
Provide support to the Game Design program with additional support to the other concentrations in Communications Media. Maintain lab facilities and equipment, schedule and supervise student workers and assists with purchasing equipment, training programs. Determine training methods to be used to support and accomplish instructional objectives. Responsible for the Game Labs, Mocap Studio, and Game Lounge. Will assist in training faculty and support students in the proper utilization of equipment; schedule the use of equipment; and perform related work as required for Communications Media concentrations as applicable.

Duties & Responsibilities:

1. Will train faculty and support students in the proper utilization of Communications Media equipment such as the 3D printer, motion capture and game design software to ensure that equipment will be operated correctly, safely and efficiently.
2. Researches, plans, make recommendations and purchases equipment by matching the type and application of equipment with program and instructional needs with consultation with instructional program developers, concentration coordinators, and the department chair.
3. Provide assistance to students in the labs when appropriate.
4. Keep tables, keyboards, monitors clean.
5. Manage 3D printer & scanner & other equipment, help students troubleshoot, monitor printer spool levels, and ensure that it is not being abused and checkout and maintenance of tablet pens and their batteries.
6. Report to Coordinator re: status of labs, lounge, Mocap studio.
7. Provide access to Motion Capture studio and monitor the Mocap space to ensure that it continues to be set up correctly (adjust cameras, etc.)
8. Train students on use of Mocap system
9. Manage checkout system of iPads, games, equipment, etc.
10. Inventory games & game components
11. Ensure Lounge is clean, equipment is set up correctly, students are respectful, etc.
12. Assist with specification & requisition process for new equipment & software.
13. Assists in developing orientation or training objectives by assessing the needs of program faculty or student populations; determining training methods; and writing manuals, handbooks, materials, etc. for training, reference or other purposes.
14. Assists with game design budget, create requisitions work with procurement.
15. Schedules use and repair of equipment to ensure maximum utilization and good working order.
16. Inspects equipment for operational quality and recommends the replacement of equipment to assure high quality and relevance to the trends in the field.
17. Liaison with the Information Technology Department to ensure that computing equipment is implemented and installed for use, safety and efficiency.
18. Supervision of personnel, such as work study students, hired to work with equipment, such as to loan or repair, or monitor department laboratories and work spaces.

19. Assist in running and providing technology for Game Design-related events, such as PAX East, the Global Game Jam and Game Con.

Qualifications:

1. Applicants must have experience working in a fast paced setting, while maintaining exceptional customer service to an array of constituents.
2. Prior experience as a technical assistant or related technology position is strongly desired.
3. Ability to supervise, including planning and assigning work according to the nature of the job to be accomplished, the capabilities of subordinates, such as work study students, determining subordinates' training needs and providing or arranging for such training; motivating subordinates to work effectively;
4. Technical proficiency and expertise with Microsoft Office tools including Microsoft Excel, Word, Outlook, as well as database tools, such as FileMaker Pro.
5. Experience with Mocap and 3D printers preferred.
6. Excellent interpersonal, written (grammar, spelling, format) and verbal communication skills.
7. Excellent organizational skills and attention to details.
8. Ability to handle and prioritize multiple tasks simultaneously.
9. Ability to plan, assign and coordinate the activities of others.
10. Ability to give oral and written instructions in a precise, understandable manner.
11. Able to perform the position with or without reasonable accommodations.

Appendix 13: Work-Study Position

Department Name:Communications/Media
Position: Game Design Studio Supervisor

Duties and Responsibilities:

1. Controls In/Out access to Game Design Studios (A329,330,331 & 332) by having students sign in and out on security lab form.

2. Helps students with technical problems with the studio equipment, computers, & software. Appropriate supervisors will have a more sophisticated experience with the software and hardware in the studio complex. They will be familiar with several programs, be able to troubleshoot when possible and recognize when to shut equipment down if problems are too serious to handle without faculty supervision.

3. Checks out equipment (iPads, tablet pens, etc.) and game library titles (console & tabletop games) to qualified students, and ensures that they are returned by the end of evening.

4. Assists Game Design faculty as needed; this may include assisting with software/equipment instruction during classes.

5. Makes periodic rounds of the Game Studio Complex to verify the security of equipment and to ensure the safe and proper use of equipment. Otherwise remains available in the studios, labs and lounge throughout shift.

6. Contacts Campus Police if problems arise regarding health or safety.

7. Maintains single access control to the lab complex through the main doors.

8. Prepares reports for faculty regarding any technical problems they are unable to resolve. Informs faculty of any security problems.

9. Alerts Campus Police to lock up lab complex at end of weekend shift.

Job Qualifications:
Appropriate supervisors will have a more sophisticated experience with the software and hardware in the studio complex. They will be familiar with several programs, be able to troubleshoot when possible and recognize when to shut equipment down if problems are too serious to handle without faculty supervision.

They should be able to recognize common equipment problems and correct them. They should recognize when software or hardware problems are more serious and to have the judgment to shut equipment down when necessary. They should be able to assist students when needed.

Appendix 14: Library

Library resources and services to support the program review of the Game Design program

The New England Commission on Higher Education's Standard 7.22 calls for "access to library and information resources, services, facilities, and qualified staff sufficient to support its teaching and learning environments and its research and public service mission as appropriate." The purpose of this report is to outline the current Amelia V. Gallucci-Cirio Library's resources, services and facilities that support the undergraduate program in Game Design at Fitchburg State University. The material presented in this report will be discussed in an November 18, 2020 meeting with the Game Design faculty. Specific items we hope to discuss include:

- Partnering to develop your Game Design students' information literacy skills
- Technology Lending Library
- Controlled Digital Lending in place of physical reserves
- Open Educational Resources

ABOUT Game Design at Fitchburg State University

Undergraduate Students with (first) major as Game Design enrolled in Fall 2019	166

An analysis of the library support needed for the Game Design undergraduate major is classified into three categories: resources, services and facilities.

Resources for Game Design

Researchers in Game Design use academic journals, monographs (books), and films.

1. Journals and Databases

The Amelia V. Gallucci-Cirio Library offers access to over 115,000 online journals in over 179 databases. While there are no databases that are specifically designated for the Game Design major and courses, we are presenting these that support the interdisciplinary range of topics related to Game Design:

Core Full-Text Databases

1. ACM Digital Library
2. Applied Science & Technology Source
3. Business Source Premier
4. Communication Source
5. Psychology and Behavioral Sciences Collection
6. SocIndex with Full Text

Supplemental Full-Text Databases

7. Academic OneFile (Gale)
8. Academic OneFile Select (Gale)
9. Academic Search Ultimate
10. Business Insights
11. Credo Reference
12. Ebook Central (ProQuest)
13. eBook Collection (EBSCOhost)
14. Film & Television Literature index with Full Text
15. Fine Arts and Music Collection
16. JSTOR Arts & Sciences, JSTOR Life Sciences, and JSTOR eBooks
17. Kanopy
18. ProQuest Social Sciences Collection
19. PsycINFO (APA: American Psychological Association)
20. SocIndex with Full Text

See Library Table 1: Full-text Journal Databases by Disciplines related to Game Design. Usage statistics show a downward trend. We would be interested in talking with you about any suggestions you might have for new databases and/or how to increase usage.

The Library offers access to many journals related to game design. The following is a subset:

- American Journal of Play
- Analog Game Studies
- Computer animation and virtual worlds
- Continuum: Journal of Media and Cultural Studies
- Game Developer
- Games & Culture
- Game Studies
- International Journal of Computer Games Technology
- International journal of interactive mobile technologies
- Journal of Games Criticism
- Journal of gaming & virtual worlds
- Journal of Popular Culture
- Journal of virtual worlds research
- Loading...
- Media Psychology
- Refractory: a Journal of Entertainment Media
- Simulation & Gaming
- Transactions of the Digital Games Research Association (TODIGRA)
- Well Played

The Library welcomes the opportunity to discuss possible gaps in our journal collection and the possibility of increasing journal subscriptions related to Game Design.

In fall 2018, the library conducted a journal review project. It looked at the approximately 400 print and online journals to which the library subscribes (outside of the journals available through the databases). The library determined the annual cost per usage by dividing the annual cost for the journal title by the number of times the journal was used in a year. Criteria was established and applied that allowed the library to cancel journals that were not being effectively

used. No Game Design related journals were cancelled due to low usage.

In October 2020, librarians identified the following journal to cancel due to low usage and high cost: IEEE Computer Graphics & Applications is $1,600 per year and had 4 uses in AY20 and 16 uses in AY19. We are currently working with the vendor to renegotiate the annual cost or else will consider cancelling.

This journal review project allowed the library to increase journal offerings in needed areas as determined by interlibrary loan data as well as to purchase large, multi-disciplinary eBook collections. More information about the new eBook collection is below.

The library collection development policy has been, and continues to be, to provide the core journals and databases appropriate for each discipline. Reviews of databases and journals are consulted, peer comparisons are conducted, and faculty input on the effectiveness of the resource is critical when considering new databases. Funds for new databases and/or journals are then requested, and if granted, they are purchased.

2. **Books**

A review of our print collection in the Library of Congress call number ranges specifically associated with Game Design shows over 1,400 print books in our collection. See Library Table 2: Monograph Collection Description and Analysis.

In addition, almost all the books were in the print collection as the Library offered few eBooks. It was our recommendation that an eBook package that includes Game Design books be acquired to meet the needs of the undergraduate and graduate researchers and the faculty**.** This would not only increase the number of volumes available; it would also increase the number of books published in the past 5 years. Therefore, effective March 2019, the EBSCO Academic Complete eBook package was subscribed to that included approximately 1,132 Game Design related eBooks to meet the needs of the undergraduate and graduate researchers and the faculty**;** 64 of these eBooks were published in the last 5 years and 733 were published in the past 10 years. In addition to this, we also added the JSTOR EBA and DDA eBook collections which included 280 Game Design related eBooks; 53 of these were published within the last 5 years and 194 were published within the last 10 years. This increases the number of books associated with **Game Design in total to 2,899** books (print and ebooks) while providing on and off-campus access.

3. Films and other Media

In 2018, the Library purchased a subscription to the academic streaming film database Kanopy. 1,260 videos are available with subjects aligned with Game Design (this does include some duplicates). See Library Table 3: Films and Other Media Collection for a breakdown by category.

4. **Technology**

Starting in Fall 2020, the Library offers a robust Technology Lending Library to ensure that all students, regardless of their financial means, are able to access the technology needed to do their course work. The equipment listed is available for checkout. The library offers equipment such as a green screen backdrop, cameras, microphones, and laptops that may be useful for Game Design students, but we would like to discuss the possibility of adding other items to support your students. Students also have access to a range of technology available in the library building. See below for the Library Facilities section of this report.

Services for Game Design

Library Instruction

For all academic departments in the 2020 academic year, faculty librarians taught 177 research sessions and were embedded into 68 courses. Through these efforts, we reached over 4,700 students during the last academic year. With only 7 faculty librarians on staff, the number of classes with research sessions and/or an embedded librarian is impressive and requests continue to increase.

Campus-wide, undergraduate library instruction is mainly provided through in-person classes while graduate instruction mainly occurs through the embedded librarian program. As the Game Design department continues to evolve, consideration should be given to how library instruction can be delivered most effectively.

On a yearly basis (see below), in-person instruction requests from Game Design are low compared to other disciplines. Additionally, we received no requests to have a librarian and/or library research instruction materials embedded in Blackboard game design courses. Two game studies courses have had embedded research guides and/or in-person instruction in the past year and additional requests for fall 2020 asynchronous instruction videos. The library is interested in working with Game Design faculty to increase direct, course-specific interactions between students and librarians via in-person classes or our embedded resources, specifically for the capstone project.

Library Instruction					
	FY2016	FY2017	FY2018	FY2019	FY2020
Total Embedded Courses	37	102	63	72	68
Embedded Game Design Courses	0	0	0	0	0
Total In-person Sessions	185	161	184	194	177
In-person Game Design Sessions	2	2	0	1	2

See Library Table 4: Research Instruction for more information.

Library Research Guides

The Library offers 35 subject research guides plus 165 course specific guides, covering all disciplines at Fitchburg State. For Game Design, we have created one discipline-specific research guide and two course-specific research guides. The usage statistics for the Game Design disciplinary research guide show the guide was accessed 402 times in FY20, about 60% less than the usage the average subject guide receives (1003 views/guide avg.). Starting in fall 2019, the Library's Game Design Research Guide was made available at point-of-need within the Blackboard course management system in all courses, including Game Design, in order to facilitate access.

Research Help

The Library offers one-on-one reference services in a variety of modes, including dropping in at the reference desk, making a personal appointment, email, and chat instant messaging service. The overwhelming majority of such services are offered in-person at the research help desk, although this number has declined significantly over time. During the academic year, research help is available to students for 60 hours per week. In FY20, librarians answered over 1,100 research questions. The aggregate trends in research help appear in Library Table 5: Research Help. Statistics on the use of research help by Game Design students only are not available.

Reserves

The Library's Reserve system is well used by the Fitchburg State community. Last year, 98 professors put a total of 595 items on reserves. Checkouts of reserve materials by all students were more than 1,100 during the last academic year. During FY20, Game Design faculty had put 1 item on reserve. This item was checked out only once. The library also purchases board games for the collection listed under the Game Design department reserves. There are currently 23 board games on reserve for checkout. Due to COVID-19, print reserves, including the board game collection, are currently unavailable for circulation.

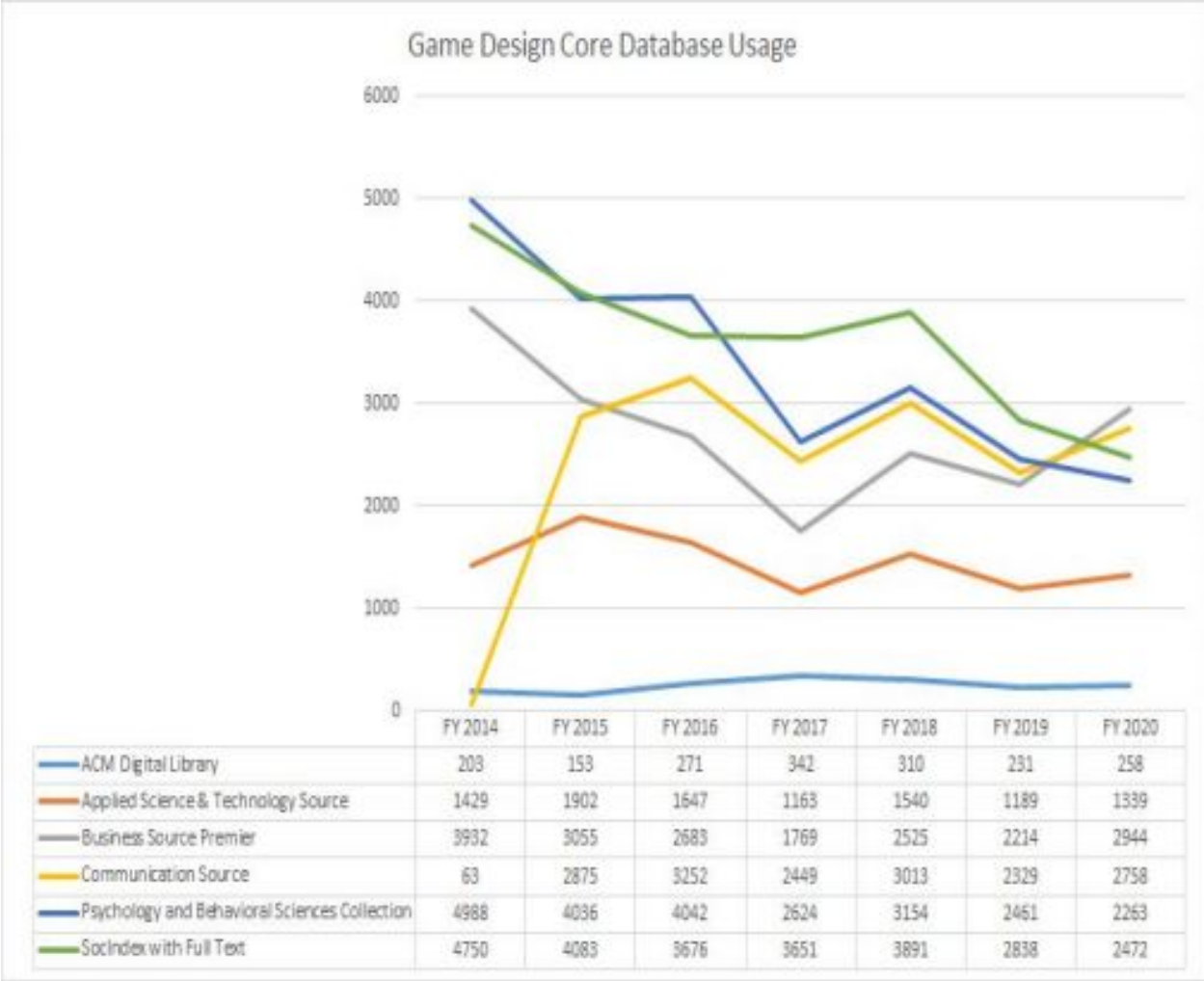
We hope to discuss with Game Design faculty further opportunities for Game Design faculty to utilize the new Controlled Digital Lending program, a digital reserve system. In addition, the Library is currently exploring ways to increase access to materials by students, including the insertion of digital library resources into courses and the adoption of Open Educational Resources, which would increase student access to no or low-cost textbooks and other course materials.

Interlibrary Loan Services Request

Data shows Communications Media students and professors have a low use of Interlibrary Loan Services based on discipline. See Library Table 6: Interlibrary Services for details. With the

Library's recent renovation, students have access to welcoming spaces designed to support individual and group work, and is more than adequate to meet the needs of students, faculty and administration. Building information is in Library Table 7: Facilities.

Database usage data disaggregated by discipline does not exist and it is not possible to determine how many articles were accessed by Game Design faculty and students only. In total though for the Fitchburg State community, over 132,000 articles were accessed through the Library's 179 databases in fiscal year 2020.



	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
ACM Digital Library	203	153	271	342	310	231	258
Applied Science & Technology Source	1429	1902	1647	1163	1540	1189	1339
Business Source Premier	3932	3055	2683	1769	2525	2214	2944
Communication Source	63	2875	3252	2449	3013	2329	2758
Psychology and Behavioral Sciences Collection	4988	4036	4042	2624	3154	2461	2263
SocIndex with Full Text	4750	4083	3676	3651	3891	2838	2472

Library Table 2:
Game Design Print Book Collection

Subject Area	LC	2014	2015	2016	2017	2018	2019	2020
Computer/electronic games	GV1469.15-GV1469.62	82	87	106	132	161	177	184
Recreational products (including games & electronic games)	HD9993	15	16	16	18	20	20	20
Educational games (including computer)	LB1029.G3	13	15	15	15	16	17	17
Visual arts, technique & composition (including computer art/digital art)	N7429.7-N7433.85	53	55	56	57	58	58	58
Drawing, design, illustration (including computer drawing)	NC	626	631	647	653	660	665	678
Artificial intelligence	Q335	42	42	42	44	48	52	55
Computer software topics (including computer games)	QA76.76	276	309	322	335	344	353	356
Computer graphics	T385	53	54	56	58	59	59	62
Video game equipment	TK6681	1	1	1	2	2	2	3
Flight games (computer)	TL712.8	0	0	0	0	0	0	0
Cinematography (including sound and computer animation)	TR897-TR897.75	45	47	48	51	51	52	52
War games (computer)	U310-U310.2	0	2	2	2	2	2	2
TOTAL		**1,206**	**1,259**	**1,311**	**1,367**	**1,421**	**1,457**	**1,487**

The total number of print books in the call number ranges associated with Game Design is 1,487. This is less than the number expected for a collection to support intermediate undergraduate coursework and research (12,000+ books). It makes sense it is low compared to other established disciplines as the game design field is relatively new. Effective March 2019, the EBSCO Academic Complete eBook package was subscribed to that included approximately 1,132 Game Design related eBooks to meet the needs of the undergraduate and graduate researchers and the faculty**;** 64 of these eBooks were published in the last 5 years and 733 were published in the past 10 years. In addition to this, we also added the JSTOR EBA and DDA eBook collections which included 280 Game Design related eBooks; 53 of these were published within the last 5 years and 194 were published within the last 10 years. This increases the number of books associated with Game Design in total to **2,899** books while providing on and off-campus access.

Library Table 3:
Film and Other Media Collection

# of Streaming Films by Subject in Kanopy Database	
Computer Science & Technology	316
Design	103
Science Fiction & Fantasy	160
Technical Expertise	47
Visual Art	914
Total (includes duplicates)	**1,260**

Library Table 4:
Library Instruction

	FY16	FY17	FY18	FY19	FY20
Total Instruction Sessions Conducted:	222	263	247	266	245
Game Design Sessions Conducted:	2	2	0	1	2
Percentage	0.90%	0.76%	0.00%	0.38%	0.82%
Total Embedded:	37	102	63	72	68
No. of Game Design Embedded:	0	0	0	0	0
Total In-person classes:	185	161	184	194	177
No. of Game Design In-person classes:	2	2	0	1	2

Undergraduate library instruction is mainly provided through in-person classes at the undergraduate level. As the Game Design program is revised, consideration should be given to how library instruction will be effectively delivered, particularly if an increase in the number of online courses is anticipated.

Note: The library offers both discipline-specific and general information literacy instruction

Library Table 5:
Research Help

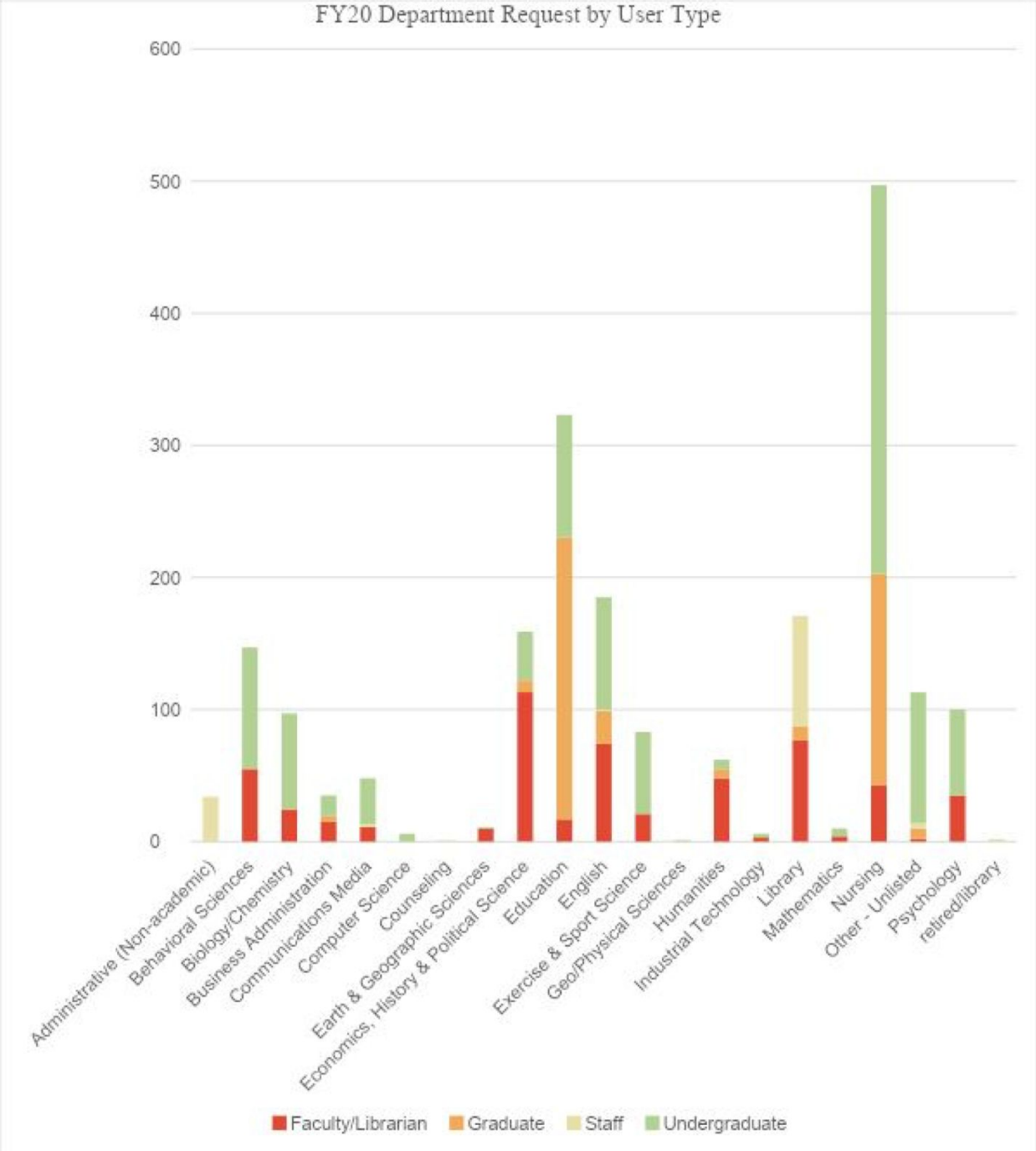
Library Research Guides

For Game Design, we have created one subject research guide and two course specific research guides. The usage statistics in the Game Design research guide show the guide was accessed 402 times in FY20, about 60% less than the usage the average subject guide receives (1003 views/guide avg.). Effective in summer 2019, the Game Design research guide was embedded in all Game Design Blackboard courses; we have seen a considerable usage in guide views since then.

Reference Statistics for University

	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Total Records	**3544**	**2642**	**2497**	**1875**	**2854**	**2803**	**2409**
Mode of Access	**FY2014**	**FY2015**	**FY2016**	**FY2017**	**FY2018**	**FY2019**	**FY2020**
In Person	2490	1959	1872	1386	2297	2253	1547
Chat	678	548	510	308	268	229	416
Phone/Email	272	133	112	162	287	320	420
Video Call	12	2	3	19	11	16	42
Questions by Patron	**FY2014**	**FY2015**	**FY2016**	**FY2017**	**FY2018**	**FY2019**	**FY2020**
Student	3016	2438	2320	1674	2632	2538	2091
Faculty	102	59	66	57	65	116	165
Extended Campus/DL	256	27	21	45	112	180	169
Public/Alumni/Other	145	111	79	89	131	123	134
Staff	16	7	11	10	8	14	29
Unknown	13	0	0	0	0	0	0
Duration	**FY2014**	**FY2015**	**FY2016**	**FY2017**	**FY2018**	**FY2019**	**FY2020**
0-2 minutes	1449	1104	1006	782	1483	1418	844
2-5 minutes	1008	735	683	532	689	634	644
5-15 minutes	628	509	424	327	331	350	433
15 minutes or longer	466	294	384	234	351	401	488

Library Table 6:
Interlibrary Loan Services



Library Table 7:
Facilities

Space	Specifications
Total Number of Seats in Library	596
Information Commons	Research Help Desk Circulation Desk 61 public computer stations (now distributed in 4 floors due to COVID-19) 3 multi-function printers KIC Scanner
Study Rooms	9 large (up to 8 people) containing conference table, white board, media viewing equipment, and Apple TV. 8 small (2 people) containing a conference table, computer, and whiteboard.
Media Production Room	Seating up to 7 people containing a computer, Apple TV, ceiling mounted projector, DVD player, and document projector.
Quiet Space	2 floors (3rd and 4th)
Archives	47,821 items used in FY20 38 Special Collections totaling 322 boxes. 13 record groups totaling 480 boxes 20 digital collections containing 14,600 items 2,500 rare books Art collection

Study Room Statistics	FY19	FY20
Unique Users	1743	1552
Total Bookings	9454	6330
Hours Booked	16869	11272

Appendix 15: Space/Facilities

Appendix 16: Technology

Game Design Software

Appendix 17: Equipment/Materials

Peripherals & Consoles

Name of Item	Quantity	System
Atari Flashback Controllers	2	Atari Flashback
Atari Flashback	1	Atari Flashback
Gamecube Controllers	6	GameCube
GameCube	1	GameCube
GameCube Memory Cards	2	GameCube
Charging Station	1	Misc
Powerjoy Steering Wheel Controllers	2	Misc
Yellow A/V Controller	1	Misc
Sony HDMI Hub	1	Misc
APC Power Bank	3	Misc
Sony A/V Selection	1	Misc
N64	1	N64
Nintendo 3DS	1	Nintendo 3DS
Super Mario Case	1	Nintendo 3DS
Pack of 3DS Screen Protectors	1	Nintendo 3DS
Nintendo 3DS XL	1	Nintendo 3DS XL
Pack of 3DS XL Screen Protectors	1	Nintendo 3DS XL
3DS Stylus Pens	2	Nintendo 3DS, Nintendo 3DS XL
3DS Universal Charger	1	Nintendo 3DS, Nintendo 3DS XL
Joy Con Guards	2	Nintendo Switch
Nintendo Switch	1	Nintendo Switch
Switch Dock	1	Nintendo Switch
Joycon Controllers	2	Nintendo Switch
Joy Con Charging Grip	1	Nintendo Switch
Wiimote Controllers	2	Nintendo Wii
Wii Nunchuk Controller	4	Nintendo Wii
Wii Paintbrush Controller	1	Nintendo Wii
Wii Plus Adaptors	2	Nintendo Wii
Wii Steering Wheel	1	Nintendo Wii
Nintendo Wii	1	Nintendo Wii

Wired Wii Controllers	2	Nintendo Wii (I think)
GameCube Controller Adaptors	2	Nintendo Wii U
Playstation Controllers	3	Playstation
Playstation Remote	1	Playstation
Playstation Memory Cards	2	Playstation
Playstation	1	Playstation
Playstation A/C adaptor	1	Playstation ?
Playstation 2	1	Playstation 2
Playstation 2 Memory Cards	2	Playstation 2
Playstation 3 USB Chargers	4	Playstation 3
Playstation 3	1	Playstation 3
Dualshock 4 Controllers	4	Playstation 4
Dualshock 4 Charging Station	1	Playstation 4
Playstation 4	1	Playstation 4
PS Vita	1	PS Vita
PS Vita Charger	1	PS Vita
Universal DDR Mats	2	PS2, GameCube (Xbox)
Sega Dreamcast Controllers	2	Sega Dreamcast
Sega Dreamcast	1	Sega Dreamcast
Wii U	1	Wii U
Wii U Controller	1	Wii U
Xbox 360 Controller Charge Base	1	Xbox 360
Xbox 360 Controllers	4	Xbox 360
Rockband Microphones	2	Xbox 360
Xbox 360 Play & Charge Cables	2	Xbox 360
USB Adaptor	2	Xbox 360
Rechargable Xbox 360 Controller Battery Packs	5	Xbox 360
Xbox 360 AA Battery Pack	1	Xbox 360
Pro Guitar	1	Xbox 360
Xbox 360	1	Xbox 360
Xbox Kinect	1	Xbox 360
Xbox One Controller	3	Xbox One
Xbox One Headset	1	Xbox One
Xbox One Media Remote	1	Xbox One

Xbox One	1	Xbox One

Digital Games

Platform:	Title	Platform
Sony Playstation 3 Games	America's Army: True Soldiers	PS3?
	Assassin's Creed Ezio's Trilogy	PS3?
	Batman Arkham Asylum	PS3
	Batman: Arkham City	PS3
	BioShock Ultimate Rapture Edition	PS3?
	Borderlands 2	PS3
	Borderlands Game of the Year	PS3
	Call of Duty: Black Ops	PS3
	Call of Duty: Modern Warfare	PS3
	Dead Space 2	PS3
	Dragon's Dogma	PS3
	Elder Scrolls V: Skyrim - PS3	PS3
	Far Cry 3	PS3
	God of War: Ascension	PS3
	Half Life 2 (part of Orange Box)	PS3
	Heavy Rain Director's Cut	PS3
	Hitman: Trilogy HD	PS3?
	Ico & Shadow of the Colossus	PS3
	Injustice: Gods Among Us T25	PS3?
	Jak and Daxter Collection	PS3
	Journey/Flower/Flow	PS3
	Little Big Planet 2	PS3
	Little Big Planet Move Bundle - PS3	PS3
	The Orange Box (Half-Life 2 Episode 2, Portal, Team Fortress 2)	PS3
	Madden NFL 12	PS3
	Mass Effect Trilogy T25	PS3?
	MLB 13 The Show	PS3
	Ninja Gaiden 3	PS3
	Orange Box (Portal, Half Life 2, TF2)	PS3

	Portal (part of Orange Box)	PS3
	Portal 2	PS3
	Rage	PS3
	Resident Evil 5	PS3
	Rockstar Games Collection	PS3
	Singularity	PS3
	Skylanders: Spyro's Adventure	PS3
	Sleeping Dogs	PS3
	Sonic's Ultimate Genesis	PS3
	Team Fortress 2 (part of Orange Box)	PS3
	Tomb Raider	PS3
	Tron: Evolution	PS3
	Uncharted 2: Among Thieves	PS3
	Uncharted 3 Game of the Year	PS3
	Uncharted: Drake's Fort	PS3
	God of War Saga	PS3?
	Blazblue: Chrono Phantasma	PS3
	Kingdom Hearts	PS3
	P4A: Persona4 Arena Ultimax	PS3
	Ultimate Marvel vs Capcom	PS3
	X-Blades	PS3
Sony Playstation 4 Games	Assassin's Creed IV: Black Flag	PS4
	Destiny	PS4
	The Last of Us Remastered	PS4
	Watch Dogs	PS4
	Wolfenstein: The New Order	PS4
	Bloodborne	PS4
	Alien Isolation	PS4
	Devil May Cry: Definitive Collection	PS4
	Mortal Kombat X	PS4
Sony PS Vita Games	Assassin's Creed 3: Liberation	PSV
	Little Big Planet	PSV
	Modnation Racers: Road Trip	PSV

	Touch My Katamari	PSV
	Ultimate Marvel vs. Capcom	PSV
TV Games	Pac Man Connect & Play - TV	TV
	Atari Flashback 4 Game Console	TV
	Harry Potter Hogwarts Challenge	DVD
Computer Games	Sketchfighter 2000 Alpha (20 licenses)	Macintosh
	Battlefield 2	Windows
	Fallout 3 Game of the Year edition	Windows
	Unreal Tournament 3 (with Unreal 3 - 20 licenses)	Windows
	Medieval 2: Total War	Windows
	Medieval 2: Kingdoms	Windows
	Emperor: Battle for Dune	Windows
XBox 360 Games	Batman Arkham Asylum	X360
	Bioshock Infinite	X360
	Brave	X360
	Call of Duty: Modern Warfare	X360
	Catherine	X360
	Crysis 3	X360
	Dead Island	X360
	Dead Space 2	X360
	Dishonored	X360
	Fable 3	X360
	FIFA Soccer 13	X360
	Grand Theft Auto IV	X360
	Halo 3	X360
	Halo 4	X360
	Halo Reach	X360
	James Bond 007 Legends	X360
	LA Noire	X360
	Medal of Honor	X360
	Michael Jackson The Experience	X360
	Midnight Club: LA Comple	X360
	Mirror's Edge	X360
	Mortal Kombat Komplete	X360

	Prototype 2	X360
	Resident Evil 6	X360
	Tekken Tag Tournament	X360
	The Elder Scrolls V: Skyrim	X360
	The Walking Dead	X360
	Dragonball Xenoverse	X360
	Rockband 2	X360
	Saints Row: Gat Outta Hell	X360
	Soul Calibur V	X360
	Brink	X360
	Spec Ops: The Line	X360
	Shadow of Mordor	X360
	Fallout 3: GOTY	X360
	Kinect Adventures!	X360
	Michael Phelps:Push the Limit	X360
	Legends of Rock	X360
	Rockband 3	X360
	Rockband	X360
	Guitar Hero; Aerosmith	X360
	Guitar Hero: World Tour	X360
	Hitman HD Trilogy	X360
	Mass Effect Trilogy	X360
	America's Army	X360
XBox One	Destiny	XBox One
	Wolfentstein: The New Order	XBox One
	FIFA 15	XBox One
	Halo Master Chief Collection	XBox One
	Sunset Overdrive	XBox One
	Far Cry 4	XBox One
Nintendo DS / 3DS Games	Mario Kart	DS
	New Super Mario Bros.	DS
	Pokemon Black Version 2	DS
	Sonic Classic Collection	DS
	Legend of Zelda: Ocarina of Time	3DS

	Pokemon Mystery Dungeon	3DS
	Wreck It Ralph	3DS
	Brain Age: Concentration Training	3DS
	Scribblenauts Unlimited	3DS
	Super Smash Brothers	3DS
Wii Games	Cabela's Dangerous Hunts	Wii
	Disney Epic Mickey	Wii
	Lego Star Wars: The Complete Saga	Wii
	Madworld	Wii
	Mario Kart	Wii
	Skylander Giants Starter Pack	Wii
	Super Mario Brothers	Wii
	Super Mario Galaxy 2	Wii
	Super Paper Mario	Wii
	Super Smash Bros. Brawl	Wii
	The Legend of Zelda: Twilight Princess	Wii
	The Monkey King - The Legend	Wii
	Wii Epic Mickey Paint Brush	Wii
	Wii Sports Resort	Wii
	Guitar Hero Smash Hits	Wii
	Guitar Hero World Tour	Wii
	Mario Party 9	Wii
	Metroid: Other M	Wii
	Band Hero	Wii
	Bit Trip Complete	Wii
	Link's Crossbow Training	Wii
	Muramasa	Wii
	Star Wars: The Force Unleashed	Wii
	Star Wars: The Clone Wars	Wii
Wii U	Infinity Starter Pack	Wii U
	New Super Mario Bros.	Wii U
	The Wonderful 101	Wii U
	Super Smash Brothers	Wii U
	Mario Party 10	Wii U

	Pikmin 3	Wii U
	Mario Kart 8	Wii U
	Infinity	Wii U
	New Super Mario Bros.	Wii U
	Nintendoland	Wii U
Sega Genesis	Altered Beast	Sega Genesis
	Sonic the Hedgehog	Sega Genesis
	The Simpsons Bart VS. The Space Mutants	Sega Genesis
Sony Playstation 2	Network Adaptor Start-Up Disc	PS2
NES	R.C. Pro-Am	NES
	Totally Rad	NES
	Faxanadu	NES
	Town & Country Surf Designs	NES
	Thrilla's Surfari	NES
	The Legend of Kage	NES
	The Legend of Zelda	NES
	Robocop	NES
	Rygar	NES
	Simon's Quest	NES
	Bubble Bobble	NES
	Renegade	NES
	Super Mario Bros./Duck Hunt	NES
	Heavy Barrel	NES
	Bionic Commando	NES
	Kung-Fu Heroes	NES
	Double Dragon III	NES
	Zelda II: The Adventure of Link	NES
	Life Force	NES
	Ninja Gaiden	NES
	Kirby's Adventure	NES
	Rolling Thunder	NES
	Metal Gear	NES

	Super Mario Bros. 2 (x2)	NES
	Double Dragon II	NES
	Gyruss	NES
	Dr. Mario	NES
	Super Spike V'Ball/Nintendo World Cup	NES

Tabletop Games

Title:	Players	Age	Time	Qty
7Wonders (+ Wonder Pack Expansion)	2-7	13+	30 min	
A Few Acres of Snow	2	14+	60-90 min	
Action Castle - Parsely	unlimited			2
Agricola	1-5	14+	30/player	
Are You a Werewolf	7-16	12+	20-60 min	2
Arkham Horror	1-8	12+	3-5 hours	
Asgard's Chosen	1-4	14+	120 min	
Axis & Allies 1941	2-5	12+	1-3 hours	
Battlelore	2	14+	45-90 min	
Battlestar Galactica	3-6	14+	2-3 hours	
Battletech	2+	13+		
Blackboard Jungle - Parsely	unlimited			3
Boss Monster	2-4	13+	30 min	
By Jove	2-6	10+	2 hours	
Candy Land	2-4	3+		2
Carcassonne (2-5, 13+, 30-45 min)	2-5	13+	30-45 min	
Car Wars	2+	10+	30 mins	
Castellan	2-4	10+	30-45 min	2
Catan Jr.	2-4	6+	30 min	
Cave Evil	2-4	16+	180 min	
Caverna	1-7	12+	30/player	
Chaos in the Old World	3-4	14+	1-2 hr	
Chess/Checkers/Backgammon	2			4
Compact Heroes	2-6	10+	30 min	
Diplomacy, 1954	2-7	12+	4-12 hours	

Dominion	2-4	13+	30 min	
Downfall of Pompeii	2-4	10+	45 min	
Dread Pirate	2-4	8+	60 min	
Dungeons & Dragons RPG Starter Set (5th Edition)				4
Dungeons & Dragons Basic Set	3+	10+		
Dungeons & Dragons Dungeon Masters Guide (4th ed)				
Dungeons & Dragons Dungeon Masters Guide (4th ed)				
Dungeons & Dragons Legend of Drizzt	1-5		1 hour	
Dungeons & Dragons Monster Manual				
Dungeons & Dragons Player's Handbook (Fourth Edition)				
Epic Spell Wars of the Battle Wizards: Duel on Mt. Skullzfire	2-6	15+	20-40 min	1
Euphoria	2-6	13+	60 min	
Family 7 + Mancala (7 game boards, collection)				
Fluxx	2-6	8+	5-30 min	2
Forbidden Island	2-5			2
Fortress America	2-4	14+	2-3 hours	
Frag	2-6	12+	1 hr	
Galaxy Trucker	2-4	13+	60 min	
Gauntlet of Fools	2-6	13+	30 min	
Glass Road	1-4	13+	20/player	
Global Mogul	1-4	14+	120 min	
Gloom	2-4	13+		
Go				3
Horror Clix 3D Monster Combat	2+	13+	60 min	
Jungle Adventure - Parsely	Unlimited			
Kemet	2-5	13+	60 min	
King of Tokyo	2-6	8+	30 min	
Mad City	1-6	8+	30 min	
Mage Wars	2	13+	90 min	
Magic The Gathering 2014 Core Set				
Memoir '44	2	8+	60 min	
Meta Game	3+			
Mille Bornes (Thousand Terminals: The French Card Game)	2-6	8+		
Monopoly	2-8	8+	45-60	3

Mr. Card Game (Kingdom of Loathing)	2-5	13+	60 min	
Munchkin	3-6	10+	1-2 hours	
Munchkin - Star Munchkin	3-6	10+	1-2 hours	
Munchkin Zombies	3-6	10+	1-2 hours	
Nuns on the Run	2-8	10+	45-60	
Othello	2	8+		2
Pathfinder Roleplaying Game Beginning Box				4
Pathfinder Roleplaying Game Core Rulebook				
Pix	4-9	8+		
Power Grid	2-6	12+		
Quantum	2-4	13+	60 min	2
Qwirkla Cubes	2-4	6+		
Revolution!	3-4	13+	1 hr	
Risk	2-6	8+	60-90 min	
Robo Rally	2-8	12+	30 min +	
Scotland Yard	3-6	10+	60-90 min	
Settlers of Catan w/expansion	3-6	10+	60-90 min	2
Shadows Over Camelot	3-7	10+	60-90 min	
Six-Gun Showdown - Parsely	Unlimited			2
Space Hulk: Death Angel	1-6	13+	30 min	
Space Station - Parsely	Unlimited			2
Spooky Manor - Parsely	Unlimited			2
Squish Blocks	1-6	7+	5 min	
Star Munchkin	3-6	10+	1-2 hours	
Steam: Rails to Riches	3-5	12+	90 min	
Style Wars: A Trump Card Game				
Terra Mystica	2-5	14+	30 min	
Ticket To Ride	2-5	8+	30-60 min	
Urbania	2-5	10+	45-60	
Warhammer 40,000 Dark Vengeance	2+	12+		
We Didn't Playtest This	2-10			
We Didn't Playtest This - Legacies	2-10			
We Didn't Playtest This Either	2-10			
We Didn't Playtest This Pasted on Theme at All	2-10			

Werewolf of the Apocalypse				
Z-Ward & Z-Ward X - Parsely	Unlimited			2
Zombicide	1-6	13+	1 hr	
Fluxx the Board Game	2-4	8+	15-30 min	
Star Wars X-Wing Miniatures Game	2	14+	30-45 min	
Rocket Jockey	2-4	10+	30-60 min	
King of Tokyo	2-6	8+	30 min	
Sorry!	2-4	6+		2
Xia - Legends of a Drift System				
Pokemon: Sylveon Collection				
Pokemon Card Game				
Imperial Settlers				
Traveller Core Rulebook				
Zombie Dice				
Tokaido				
Mahjong (unknown - text in Japanese)				
Legend of the Five Rings				
There's a Moose in the House				
Nisekoi (Trial deck)				
Stratego				2
Up The River				
Netrunner				
Catan				3
Catan Junior				
Ticket to Ride				
Munchkin Deluxe				3
Warhammer: The Game of Fantasy Battles				
Harry Potter, Scene It!				
Descent: Journey in theDark				
Eldrich Horror				
Star Wars: Imperial Assault				
Apples to Apples				3

Appendix 18: Four Year Plan of Study

Suggested Four-Year Plan of Study
GAME DESIGN

FITCHBURG STATE UNIVERSITY

Game Design

FRESHMAN YEAR

Fall Semester		*15 Credits*
ART 1400	Drawing I	(3)
COMM 1105	Introduction to Communication & Media Studies	(3)
MATH xxxx	Math Elective (at or above the 1200 level)	(3)
ENGL 1100	Writing I	(3)
EXSS 1000	Health & Fitness	(3)

Spring Semester		*15 Credits*
GAME 2000	Elements of Game Design	(3)
GAME 2200	Introduction to Game Art	(3)
ENGL 1200	Writing II	(3)
	Design **OR** any Art course excluding Game Design and LA&S core courses	(3)
	LA&S Elective	(3)

JUNIOR YEAR

Fall Semester		*15 Credits*
GAME 3060	3D Game Development	(3)
GAME xxxx	Game Design Specialized Elective	(3)
GAME xxxx **OR** COMM xxxx **OR** THEA XXXX	Game Design Elective **OR** Communications Media Elective **OR** Theater Elective	(3)
	Advanced LA&S Elective	(3)
	Advanced LA&S Elective	(3)

Spring Semester		*15 Credits*
GAME 3500	Advanced Game Workshop	(3)
GAME xxxx	Game Design Specialized Elective	(3)
GAME xxxx **OR** COMM xxxx **OR** THEA XXXX	Game Design Elective **OR** Communications Media Elective **OR** Theater Elective	(3)
	Advanced LA&S Elective	(3)
	Advanced LA&S Elective	(3)

SOPHOMORE YEAR

Fall Semester		*16 Credits*
COMM 2003	History of Interactive Media	(3)
GAME 3000	Game Design Workshop	(3)
CSC 1550	Computer Science II	(3)
ENGL XXXX	Literature Course	(3)
	LAB Science course	(3)

*Spring Semester**		*18 Credits*
GAME 3030	Game Level Design	(3)
GAME xxxx	Game Design Specialized Elective	(3)
GAME xxxx **OR** COMM xxxx **OR** THEA XXXX	Game Design Elective **OR** Communications Media Elective **OR** Theater Elective	(3)
CSC 1550	Computer Science II	(3)
MUSC 2000 **OR** ART xxxx	Commonwealth of the Arts **OR** Art Elective	(3)
PHIL 1000	Introduction to Western Philosophy **OR** CTW Elective	(3)

SENIOR YEAR

Fall Semester		*15 Credits*
GAME 4000	Game Studies Seminar	(3)
GAME xxxx	Game Design Specialized Elective	(3)
GAME xxxx **OR** COMM xxxx **OR** THEA XXXX	Game Design Elective **OR** Communications Media Elective **OR** Theater Elective	(3)
	Free Elective	(3)
	Free Elective	(3)

Spring Semester		*12 Credits*
COMM 4880 **OR** GAME 4100	Internship **OR** Game Studio	(12)

** Students should take one 18-credit semester in the first 3 1/2 years as senior spring semester Internship is only 12 credits. An example of an 18-credit semester is shown above in the spring semester, sophomore year.*

LA&S Elective List

1 CTW attribute *(Citizenship & The World)*
3 credits HAF attribute *(Health/Fitness)*
1 HIST subject *(History)*
1 HMN attribute *(Human Behavior)*
1 LIT attribute *(Literature)*

Advanced LA&S Options Area

Review the three options with your advisor and submit your decision to the Registrar's Office by completion of 60 credits.

Completion of 120 credits required for graduation.

Global Diversity Area

*Two courses taken must meet the Global Diversity requirement: GDAN course + (GDC or GDCN course) **OR** GDCN course + (GDA or GDAN course). These courses are allowed to satisfy this requirement and another requirement at the same time.*

Rev. 10-2016

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Appendix 19: Two Year Course Rotation

	Game Design Course Title	Required ?	Class Size	Fall	Spring	Year
COMM 2003	History of Interactive Media & Games	Required	25	1	1	2
GAME 2000	Elements of Game Design	Required	16	3	2	5
GAME 2001	Games & Arts in Japan	Elective	16		1	1
GAME 2020	Concept Art for Game Development	Elective	16		1	1
GAME 2200	Introduction to Game Art	Required	16	2	2	4
GAME 3000	Game Design Workshop	Required	16	2	1	3
GAME 3003	Topics: History By Design	Elective	16	1		1
GAME 3005	Mobile Game Design	Elective	16	1		1
GAME 3010	Game Narrative Design	Elective	20	1	1	2
GAME 3030	Game Level Design	Required	16	1	2	3
GAME 3050	Serious Games	Elective	16		1	1
GAME 3060	3D Game Development	Required	16	1	1	2
GAME 3070	3D Modeling I	Elective	16	1	1	2
GAME 3075	3D Modeling II	Elective	16	1		1
GAME 3080	3D Animation I	Elective	16		1	1
GAME 3500	Advanced Game Workshop	Required	16	1	1	2
GAME 3510	Contemporary Issues in Games (VR)	Elective	16	1		1
GAME 3560	Game Programming	Elective	16		1	1
GAME 4000	Game Studies Seminar	Required	20	1	1	2
GAME 4100	Game Studio	Required	30	2	2	4
	Game Program Coordinator			1	1	2
				21	21	42

Appendix 20: 2012 Game Design Program Proposal

New Academic Programs - Submission Template

Review Guidelines Prior to Submitting Materials
http://www.mass.edu/forinstitutions/academic/documents/expeditednprogramapprovalguidelines.pdf

Information requested may be typed directly onto form rows. Boxes will expand.
Submit one hard copy and one copy on CD.
Submit complete application between August 15 – April 15.

Proposed Degree Title: Game Design

Proposed CIP Code: 36.0113- Computer Games and Programming Skills

Date of Trustee Board Vote: July 25, 2012

Date Letter of Intent (attach copy) **submitted to Chancellor:** *(must be 30 days prior to application submission)* Please see attached.

Chief Academic Officer (CAO) Name and Title: Robin E. Bowen, Vice President for Academic Affairs

CAO Phone Number: (978) 665-3421

CAO Email: rbowen@fitchburgstate.edu

Has the Chief Academic Officer reviewed this petition? Yes

A. Alignment with Institution Mission Priorities.

How does the proposed program align with the institution's mission priorities?
This new Major is consistent with and supports the following goals of our University's Mission, Vision, and Core Values:
● Game Design *blends a professional education with liberal arts & sciences* within its curriculum (Mission), by drawing on a diverse range of course offerings, including Computer Science, Art, and English as well as in Game Design courses in Communications Media.
● The major will *extend beyond the classroom to include professional and co-curricular opportunities* (Mission), in the form of internships, practicums, and serious games partnerships with clients.
● It provides *leadership and support for the economic needs of the Commonwealth* (Mission), by training students to participate and to succeed economically in the successful and growing digital games industry in Massachusetts.
● The program of study *prepares students for a global society* through curricular innovation & program development (Vision), by fostering civic and global responsibility through "serious games" and game theory

courses.
● The major will *employ innovative uses of technology* (Vision) across courses, in student work and learning, and in the Games Library.
● It *builds partnerships within our community to provide real-world opportunities for our students* (Vision), through pairing with MassDIGI and game studios, and through the internship program.
● The program *offers equitable access to high quality programs and services* (Core Values), by creating the only Major in Game Design & Development at a public institution of higher learning.

B. Alignment with System Priorities

1. Will this proposed program address a regional/local/state workforce shortage? Explain.
Even in the midst of economic difficulties, the video game industry, in New England and nationwide, continues to grow and to search for talented and well-prepared applicants. According to the Entertainment Software Association, currently, computer and video game companies directly and indirectly employ more than 120,000 people in 34 states. The average salary for direct employees is $89,781. In Massachusetts, over the five-year period from 2005 to 2009, the industry has shown 8.86% real annual growth and directly employs 1,295 people. In October 2010, referencing MassTLC's 2009 Digital Games Cluster report, the Worcester Business Journal reported 76 firms and approximately 1,200 jobs in the industry. As of April 2011, approximately 110 companies across the state self-identify as participants in the sector, with a presence in nearly every corner of the state—from Boston to Williamstown and from Newburyport to Brockton. The top industry oriented local site had 242 jobs listed as of June 13, 2012.

2. With what other institutions have articulation agreements been arranged for this program? No agreements have been forged at this point. However, once the program is approved, plans are to pursue agreements with community colleges in the state that offer associate degree programs in Computer Science or other related programs as well as with other colleges and universities wanting to offer this option to their students.

3. **How will the proposed new academic program broaden participation and completion at the institution by underrepresented and underserved groups?**
Participation: Game Design is a program with global appeal. Games are played by both men and women across all ethnicities with varying socioeconomic backgrounds. Our hope is that this broad appeal will translate into a diverse student population in the program. Fitchburg State University is in a unique position to offer the first Game Design Degree in a *public* institution of higher learning in New England. Existing degrees in game design & development are located solely in private schools (Worcester Polytechnic Institute, Becker College, Northeastern, Champlain College, etc). Given the significantly higher tuition and fee rates at private institutions, a program housed in a state institution (especially one whose core values include accessibility and affordability) will make participation in a game design program financially accessible to a much broader population.
Completion: In an effort to enhance retention, Fitchburg State University identified faculty across the campus to serve as retention specialists, then provided specialized training to these faculty. Communications Media department has a trained retention specialist who works with students who are at risk. This Retention Specialist will also serve the Game Design program.

C. Overview of Proposed Program

1. Context. Describe the program's development, as well as its proposed administrative and operational organizational structure.
The VPAA and CIO at Fitchburg State University engaged faculty from the Communications Media program, who were teaching elective "gaming" courses, and the Chair of the Communications Media department in

conversation regarding the possible development of a game design program. Given the strength of our Communications Media program, the fact that we had faculty with both the background and interest to be involved with the program's delivery, and other academic programs on campus that could support the major (e.g. Computer Science, English Studies, Art, etc.), we felt we were well poised to offer such a program. Faculty in the Communications Media department designed the curriculum with input from faculty in Computer Science, English Studies and Art and presented a proposal for the program to the All College Committee (ACC), our institutional college governing body, in Spring 2012. The proposal was approved by the ACC in May 2012, was subsequently approved by the President in June of 2012 and then by our Board of Trustees on July 25, 2012.

The Game Design program will be managed by the Communications Media Department, its faculty, chair and departmental support staff. Program oversight (scheduling, budgeting, faculty hiring and personnel actions, student recruitment, program assessment, etc.) will be performed by the Academic Affairs office in collaboration with Finance, Human Resources, Enrollment Management, Assessment and Institutional Research offices, as is done with all existing programs.

2. Description. What is the intent /purpose of the program? What knowledge and skills will students acquire? For what careers will graduates be prepared?

The Major in Game Design presents an opportunity for students to develop skills related to the planning and design of the interactive experience of gameplay. Students will explore game design and development, art and visual design, computer programming, 3D modeling & animation, level design, creative writing, and game studies. Other program classes and topics include: serious games, mobile platforms, history of games, and aesthetics.

Program Outcomes (knowledge and skills students will acquire)

Game Design students will, through a combination of required courses and electives, be exposed to and attain competency in the following concepts, practices and skills:

- Analytical understanding of games, gameplay, and game design
- Foundations in visual art and creative writing
- Principles of game logic and programming
- Industry-standard game engines and software
- Team-based iterative design process
- Games as media of communication and aesthetic expression

Student competency in these objectives will be assessed through key courses, the internship preparation process, and the internship itself.

Careers

Students completing the program will be prepared for a broad array of careers within the gaming industry including game and level designers, producers, data managers, production assistants, interaction designers, game analysts, writers, game artists, programmers, game localization positions and quality assurance testers.

3. Curriculum, Requirements. Provide a complete description of the curriculum. Attach curriculum outline (see page 5) and course syllabi. Describe procedures and arrangements for independent work, internship or clinical placement arrangements, if applicable. Describe role and membership of external advisory committee, if any.

Curriculum Description: This major lends itself to an integration of the Liberal Arts and professional courses as the program itself is a meld of both technical and artistic aspects. Per our research of other related programs and conversations with experts in the field, required courses in the major relate primarily to the elements of game design and development. This program also includes a semester-long internship during the final semester. As part of the major, students will also take elective courses in the following four areas: Interactive

Media and Game Design Elements, Art and Design, Programming and Logic, and Writing. Students must also complete the university's General Education Requirements.

Curriculum Outline (see attached)

Procedures/Arrangements for Internships: To participate in an internship, students are required to have a GPA of 2.5 or better. Additionally, a written proposal detailing the responsibilities to be carried out to fulfill sufficient and appropriate outcomes is required. All internship proposals must be reviewed by a faculty sponsor and further approved by the Department Chair. Internship is the capstone graduation requirement for all Game Design majors, occurring during the final semester prior to graduation: a fulltime, semester-long closely mentored experience that provides a transition between academic coursework and entry to a student's chosen career. Students spend a full semester preparing for internship, completing a series of required seminars, developing and defending their portfolios before a faculty committee, and conducting an exit interview with the Internship Coordinator to determine internship placement. All internship placements are competitive, based on a student's academic performance, portfolio quality, and professional demeanor.

External Advisory Board

There is no formal external advisory board at this time, though Fitchburg State University graduates and others working in the Game Design Industry have been consulted during the development of the proposal. Once the program is approved, we plan to ask a number of these and other individuals to serve as a formal External Advisory Board. This Board will provide an important connection to industry to assure currency in the curriculum and also serve as a source for internships.

4. Students. For first year and transfer students, outline requirements for admission and graduation, expected time from admission to graduation, projected degree completion rates, and transferability of program participants' credits to other institutions.

Students seeking admission to the Game Design major will be expected to meet the undergraduate admission standards set forth by the Board of Higher Education for both freshmen and transfer applicants. If demand for the program exceeds capacity, the university will consider implementing higher admission standards currently utilized for our Film and Video Production and Photography programs in Communications Media. These include a priority deadline of January 1st and a preferred profile of a 3.0 GPA and a 1000 combined Math and Critical Reading SAT score.

Students will complete the curriculum outlined in the four-year plan of study to meet graduation requirements. The program is 120 credit hours and can be completed in eight semesters. We anticipate degree completion rates to be comparable to rates in the Communications Media program, which hover around 60%.

All earned credits would be transferrable to other institutions subject to individual institutional polices.

5. Feasibility. Describe faculty, staffing, library and information technologies, facility (including lab and equipment), fiscal and or other resources required to implement the proposed program. Distinguish between resources needed and on-hand. Complete faculty form (page 8). Display positions to be filled with qualifications. Attach vitae for current faculty.

Faculty and Staffing: We currently have two faculty members who will teach in the proposed program. Plans are to hire an additional faculty member each year for the first three years of the program. Adjunct faculty will be hired as needed to supplement specific areas of expertise during the programs development. The department already employs a full-time Internship Coordinator who will oversee internships for this program. It is anticipated that a part-time assistant will hired to support the Director with administrative tasks.

Library, Information Technologies and Facilities: Library, information technology and other equipment needs have been discussed with corresponding departments and budget estimates are based on these conversations. The Library has some holdings that will serve the program at this time, though we will need to supplement the holdings, primarily through on-line sources. We will establish two computer labs specifically configured with tools required for Game Design & Development as well as a Game Workshop room featuring computer workstations for seminars and small group work areas. A Game Library/Lounge will also be created

to allow students to research, playtest, and experiencing games together on a variety of systems and will be housed in the Communications Media department. The financial support needed for these two computer labs, workshop and library/lounge have been included in the start-up costs cited in the budget.
Fiscal Resources: Fiscal resources needed to begin the program will come from budget reallocations across the campus, including, but not limited to the Capital budget, Extraordinary Budget Request Funds (EBRQs), and the President's fund. Overall, if we are able to recruit a full class each year (and based on enrollment projections from other institutions offering like-programs, we fully anticipate we will be able to do so) income from the first and second year alone will exceed costs, including start-up costs, by the second year. Projections indicate income will continue to exceed expenses in future years as well.
Please see the attached faculty form as well as vitas for current faculty.

6. Licensure and Accreditation. Is this program intended to prepare students for licensure? If yes, name licensure organization and licensing exam. Project student passing rates. What professional or specialized accreditation will be pursued for the program? Project accreditation timelines.
We are unaware of any professional or specialized accreditations for such a program. Therefore, we do not intend to pursue accreditation or licensure at this time.

7. Program Effectiveness Goals, Objectives, and Assessment. Linked to each goal should be measurable objectives – such as job placement rates, faculty additions, facility or programmatic enhancements, etc. – timetable, and, if applicable, strategies for achieving them. (Please note that this section is intended to focus on overall effectiveness, not student learning, which is addressed elsewhere.)
Describe program assessment strategies that will be used to ensure continuing quality, relevance and effectiveness. Include plans for program review including timetable, use of assessment outcomes, etc.
Program Goals and Objectives: Please see the Table on pages 8-9 as it includes program goals and objectives.
Program Assessment: Once established, the program in game design will undergo a cycle of continuous program review consisting of annual reports on assessments of student learning completed by the program, as well as a complete program review every five years. The annual assessment report will highlight assessment activities completed in the prior academic year, and will include data gathered on learning outcomes, an analysis of that data, and an indication of any changes made to the program in response to the data. The annual assessment report will also include any changes in the assessment process planned for the upcoming academic year. These annual reports are reviewed by the Director of Assessment, The Academic Affairs Team, including both the Associate Vice President for Academic Affairs, and the Department Chairs, to provide feedback for program improvement.
In addition, every 5 years the program will submit a comprehensive program self-study, for both internal and external review, and undergo a site-visit by an external evaluator. The self-study will provide an analysis of the effectiveness of the curriculum in relation to desired outcomes as perceived by students, faculty, alumni and employers. It will contain a thorough analysis of student learning outcomes, advising outcomes, enrollment, retention, employment and graduate education data for the preceding five years. The self-study will also evaluate current levels of resources, program strengths and areas for improvement, and suggest future changes in program content, departmental organization, and resource allocation. The Associate Vice President and Vice President for Academic Affairs will select an external evaluator from a list of at least three potential candidates put forward by the department. Through a site visit and thorough review of the self-study, the external evaluator will assess how accurately the self-study reflects the current state of the program, and offer recommendations on plans for change and continued program improvement. The Associate VPAA and Vice President will discuss the report of the external evaluator with the program chair, and the program will craft a response to the external report, and to the recommendations of the Associate VPAA and VPAA.

D. External Review.

Attach the review team report and institutional response. *(obtain BHE approval of reviewers in advance; provide review standards – see appendix - to team)* See attached.

E. Market Analysis

1. Need for graduates. What is the local/regional/state labor market outlook for graduates of the proposed program? Include data and data sources that form the basis for need assessment.

Market Outlook: The video game industry is well established in Massachusetts, with dozens of major game studios operating in the Commonwealth. Even in the midst of economic difficulties, the video game industry, in New England and nationwide, continues to grow and to search for talented and well-prepared applicants. According to the Entertainment Software Association, currently, computer and video game companies directly and indirectly employ more than 120,000 people in 34 states. The average salary for direct employees is $89,781.

In Massachusetts, over the five-year period from 2005 to 2009, the industry has shown 8.86% real annual growth and directly employs 1,295 people. In October 2010, referencing MassTLC's 2009 Digital Games Cluster report, the Worcester Business Journal reported 76 firms and approximately 1,200 jobs in the industry. As of April 2011, approximately 110 companies across the state self-identify as participants in the sector, with a presence in nearly every corner of the state—from Boston to Williamstown and from Newburyport to Brockton. The top industry oriented local site had 242 jobs listed as of June 13, 2012.

2. Student Demand / Target Market. What is the student market for the proposed program? Discuss demographics, location, proposed market share, etc. Provide data, e.g., survey results, etc., that form the basis for enrollment projections (see page 4)

Student Market: When approved, the Game Design program will be the first such program in New England housed in a public university. Given the significantly lower tuition rate and the competitive nature of admissions in the other regional gaming programs (see #3 below), we anticipate strong student interest in the program. Furthermore, as one can see from the information in section E.3. below, there are many more students interested in the major than can be served by existing programs in private institutions. We anticipate enrolling students primarily from New England (especially given the NEBHE program with transferable in-state tuition) but also anticipate enrolling students from other regions.

Local survey of students: Fitchburg State University annually hosts a student-led event, Gamecon, where students competitively play and discuss the latest games and gaming technologies. At the Spring 2012 gathering, students were invited to participate in a survey regarding the potential program. Of the 45 students completing the survey, 76% indicated a desire to take courses in gaming, and 73% indicated interest in a game design major. Another 4% specified interest in a minor rather than a major. Several students who did not indicate interest in the program qualified their response indicating they were a junior or senior in another program and too far along to change majors, but would have been interested had the program been an option earlier.

National and Regional Interest: Each year, students taking the SAT indicate their intended major. In the last year alone, there has been a 57% increase in the number of students nationally planning to major in game design (from 6,802 last year to 10,712 this upcoming year). In New England, the number increased from 391 to 551 students, a 41% increase during the same time period.

3. Duplication. Identify existing public and private programs/institutions in the region or state that offer the same or similar programs. Discuss size / enrollment trends for these programs.

Institutions offering similar programs: Game Design and other related majors are offered only at private institutions in the region at this time. A Game design program at Fitchburg State University would be the first in a public institution in the New England if approved. A number of institutions offer gaming courses, yet only

five offered majors in Game Design or similar programs. We contacted these institutions and gathered information regarding enrollments and trends.
Becker College reported enrolling 90 of the "just over 380 applicants" they had last year, and plan to enroll 100 of the 550 applicants this year.
Champlain indicated they accepted 68% of their 111 applicants last year, and plan to accept 30% of their 234 applicants this year.
Rochester Institute of Technology stated they had around 900 applicants this past year and have over 1,200 applicants this year. They plan to accept 300 students into the program this year.
WPI indicated that specific program statistics were not available for individual programs as students declare their major after being admitted, thus stating they do not track program interest prior to admission. This was the only program that reported a slight decrease in enrollments in the major, with 137 undergraduates enrolled in the program this year, down from 144 last year.
Northeastern shared general data, stating they had around 300 applicants for their program, and plan to enroll around 100 students in the program for the upcoming academic year.
Overall, all programs but one are experiencing interest far beyond program capacity. Growth in interest mirrors that in the nation, with most programs in New England experiencing from 33% to over 100% increases in the number of applicants.

4. Competitive advantage. Apart from the obvious pricing advantage of public institutions, what will distinguish the proposed program in the academic marketplace?
Internships will be a required component of a Fitchburg State University Game Design degree program, a unique feature compared with other regional programs as we believe we will be the only program in New England requiring an internship for our Game Design students. We believe the internship is important as it provides the student with practical experience in the industry and oftentimes leads to employment opportunities.
As indicated before, if approved, the Game Design program at Fitchburg State University would be the first such program offered by a public university in the region. Our competitors at private institutions boast tuition and fee rates exceeding $30,000 to $44,000 per year. Tuition and fee rates at Fitchburg State University for the 2012-13 academic year are $8,728, less than a third of the cost of the most affordable private university.

6. Marketing Plan. Describe the institution's marketing plan, including time lines, for the proposed program?
Press releases announcing the program will be distributed to regional news agencies and the program will be featured on the university's website. Broad-based marketing to feeder high schools and community colleges will also begin immediately to announce the availability of the program. We will also share a program announcement with current and prospective students.
Given that we will be the only public university in New England offering Game Design, we will work with the NEBHE to make sure our program is listed on their website notifying other New England students that such a program is available per the tuition discount program.
Targeted marketing efforts will include purchasing names of students taking the PSAT or SAT who indicated game design as an area of interest. We will also work with high school guidance counselors to identify high schools that have student clubs and /or curriculum that would lead to game design.
When routinely reprinted, university publications would be updated to include information regarding the program.
Each of these efforts will begin immediately after final approval by the BHE.

F. Budget Projection

a. Budget Narrative. Explain assumptions underlying expense and income projections, e.g., instructor status, enrollment projections, field and clinical resources, etc. Describe additional cost/revenue impacts within the broader departmental/institutional budget.

Budget Explanation: We based the budget on current, flat dollar figures. For example, tuition income for the next four years is based on 2012-13 rates rather than estimating any possible increase in funds. In turn, costs are also figured using current rates, flat across the four years.

At this time, we have two current faculty members who will teach in the program. We anticipate hiring an additional faculty member each year for the first three years of the program. Budget expenses related to these additional hires is reflected below. Adjunct faculty will be used as needed to supplement in specific areas of expertise. We expect greater than usual adjunct usage during the second year as the program will be offered in its entirety that year. Depending on enrollments, the third faculty hire may be accelerated. The department currently has a full-time Internship Coordinator who will oversee internships for this program. It is anticipated that a part-time assistant will hired to support the Coordinator with administrative tasks.

Library and other equipment needs have been estimated below. One-time start up costs will be funded through reallocated funds during the first year of the program, with on-going costs added to department budgets accordingly and provided on an annual basis. We anticipate needing additional marketing funds in the first year, but will absorb these in general marketing budgets thereafter.

We will establish two computer labs specifically configured with tools required for Game Design & Development as well as a Game Workshop room featuring computer workstations for seminars and small group work areas. A Game Library/Lounge will also be created to allow students to research, playtest, and experiencing games together on a variety of systems. The financial support needed for these two computer labs, workshop and library/lounge have been included in the start-up costs cited in the budget.

Overall, if we are able to recruit a full class of 34 students each year (and based on enrollment projections from other institutions offering like-programs, we fully anticipate we will be able to do so) income from the first and second year will exceed costs, including start-up costs, by the second year.

b. Program Budget. Submit a line item income and expense budget for the proposed program for the first four years. Budget categories include facilities, library, faculty, staff, field/clinical experiences, revenues from grants, tuition or other sources, etc. Reallocated funds should specify reallocations from existing campus resources to support the proposed program, including funds reallocated from discontinued or downsized programs. Indicate one-time/start-up costs and revenues.

See itemized budget below.

NEW ACADEMIC PROGRAM BUDGET - SAMPLE FORMAT

One Time/ Start Up Costs		***Annual Expenses***			
	Cost Categories	**Year 1**	**Year 2**	**Year 3**	**Year 4**
	Full Time Faculty *(Salary & Fringe)*	$80,000	$160,000	$240,000	$240,000
	Part Time/Adjunct Faculty *(Salary & Fringe)*	$18,000	$36,000	$18,000	$18,000
	Staff	-0-	-0-	-0-	-0-
	General Administrative Costs	-0-	-0-	-0-	-0-

$12,000	Instructional Materials, Library Acquisitions	$3700	$3700	$3700	$3700
$289,500	Facilities/Space/Equipment	$3000	$3000	$4000	$4000
	Field & Clinical Resources		$27,000	$27,000	$27,000
$5,000	Marketing				
	Other (Specify)				
$306,500	**TOTALS**	$104,700	$229,700	$292,700	$292,700

One Time/Start-Up Support		***Annual Income***			
	Revenue Sources	**Year 1**	**Year 2**	**Year 3**	**Year 4**
	Grants				
	Tuition and Fees	$279,296	$558,592	$837,888	$1,117,184
	Departmental				
$306,500	Reallocated Funds				
	Other (specify)				
	TOTALS	$279,296	$558,592	$837,888	$1,117,184

PROGRAM GOALS DESCRIPTION – SAMPLE FORMAT

Linked to each goal should be measurable objectives – such as job placement rates, faculty additions, facility or programmatic enhancements, etc. – timetable, and, if applicable, strategies for achieving them. Attach goals table (see page 4). (Please note that this section is intended to focus on overall effectiveness, not student learning, which is addressed elsewhere.) Describe program assessment strategies that will be used to ensure continuing quality, relevance and effectiveness. Include plans for program review including timetable, use of assessment outcomes, etc.

Goal	Measurable Objective	Strategy for Achievement	Timetable
1. Hire qualified faculty for the program.	1. Hire one faculty member each year for the first 3 years of the program.	1. Collaborate with HR and Communications Media department to establish search committees.	1.In 2013, 14 and 15 AY, hire one faculty member to teach in the Game Design program each year.
2. Admit qualified students into the program.	2. Admit 32 qualified students to begin the program in the 2014 AY and admit an additional 32 students each year thereafter.	2. See information on marketing the program for strategies to be employed.	2. Admit 32 students for fall of AY14, an additional 32 for AY15, and an additional 32 students each year thereafter.
3. Create two computer labs, Game Workshop room and Game Library/Lounge.	3. Facilities for the new program including two computer labs, a Game Workshop room and Game Library/Lounge will be completed.	3. Faculty and VPAA to collaborate with the VP of Administration and Finance to coordinate timelines and specific facility design.	3. Facilities to be completed during the 2013 AY and following summer.
4. Establish internship sites for students.	4. Each year for the first 3 years, a minimum of 20 internship sites will be established for students in the Game Design program.	4. Faculty teaching in the program will work with the Internship Coordinator in the Communications Media department to establish sites.	4. Establish 20 sites in AY 14, another 20 sites in AY 15 (the first year students will be completing internships) and another 20 sites in AY 16.
5. Perform a program review of the Game Design program after 5 years (AY18), and every 5 years thereafter.	5. Using existing comprehensive program review criteria, the department will complete a self-study of the program and an expert external to the university will assess the program in 2018 and every 5 years thereafter.	5. AVPAA to add Game Design to the program review rotation. Director of Assessment to work with the department to establish assessment methods.	5. Initial program review in AY 2018 and every 5 years thereafter.

PROGRAM ENROLLMENT PROJECTION – SAMPLE FORMAT

	# of Students Year 1	# of Students Year 2	# of Students Year 3	# of Students Year 4*
New Full Time	32	32	32	32
Continuing Full Time	0	32	64	96
New Part Time				
Continuing Part Time				
Totals	32	64	96	128

Appendix 21: 2012 External Evaluators' Report

Fitchburg State University
Degree Evaluation: *Game Design*
Evaluators: Joshua Buck and Benjamin Cavallari
Site Visit: October 9th, 2012

The following are the NEASC program standards for undergraduate programs. Please comment on how well the proposed program meets these standards.

4.5 Degree programs have a coherent design and are characterized by appropriate breadth, depth, continuity, sequential progression, and synthesis of learning.

> **Joshua Buck [JB]:** The mix of liberal arts and art history with courses in specific skills provides significant depth to the proposed program. This structure should allow students to be put to the task of taking responsibility for their work, answering to why they have created what they have as well as understanding how to create it.
>
> The course sequence, while yet to be fully fleshed out, should provide a good flow to the curriculum, offering introductory yet relevant courses in the first years and production/team courses in the third and fourth years allowing students to collaborate and work within their areas of specialization.
>
> **Benjamin Cavallari [BC]:** Based off the course descriptions and yearly layout for course offerings, it appears that the faculty has done an excellent job in balancing the program to mold Game Design "generalists". That being said, as the new faculty are hired through the first few years, and as the original program reflects and evolves, specific strengths to the program will

definitely take shape. That is when the university will see the unique "brand" or "flavor" of Game Design students created from the program, thus highlighting the depth, progression and synthesis of learning that is reflected in the courses. I believe that the program shows an appropriate breadth, depth, and continuity for a strong beginning. When combined with the professionalism and passion from the instructors guiding the program, it has the great potential to be very robust in the coming years with their complimentary faculty hires and adjunct specialties also offering strength and varying directions to the program themes.

4.13 Undergraduate degree programs are designed to give students a substantial and coherent introduction to the broad areas of human knowledge, their theories and methods of inquiry, plus in-depth study in at least one disciplinary or interdisciplinary area. Programs have an appropriate rationale; their clarity and order are visible in stated requirements in official publications and in student records.

[JB]: The program as proposed should be able to provide, through the required courses in history, art-history, global appreciation (citizenship) and the arts (writing, history), substantial exposure to "broad areas of human knowledge." Fitchburg State has a wealth of valuable course offerings in these areas.

The overall rationale of the proposed program is sound, but there is some concern about the program as proposed trying to be too many things without being able to be "in-depth" enough in a specific area. For example, can students studying "Game Design" at Fitchburg State focus, through course study, enough on Design or Art or Programming or will they be versed in the theory of each but lack sufficient skills to be successfully in one of these specific disciplines? An interdisciplinary approach to a more generalist Game Design degree is certainly an option but the proposal makes reference to specific skills – it was made clear by Fitchburg State faculty that the program would be developed with "soft specializations" and develop as needed – this may be satisfactory.

[BC]: The strengths of Fitchburg State University are easily seen in the diverse and well-rounded curriculum that which, when coupled with the new Game Design program, will offer students a very well rounded overview of general human knowledge and learning processes. In a program (subject matter) as interactive, quickly diversifying, and multidisciplinary as game development is, there are many areas of specialty outside the direct program that will complement the student's program focus areas and overall experience in their degree. This is where Fitchburg State has a great advantage going into the development of this new Game Program. Furthermore, the first two faculty members are incredibly multidisciplinary in their backgrounds, and they bring a myriad of experiences and endeavors to the overall learning process that students will undoubtedly benefit from.

Specifically, the Global Diversity curriculum component highlights an extremely important area from which the game design program may directly benefit. In any artistic endeavor, that which is exotic or unknown oftentimes can inspire and incite students to think outside the box, to dream of worlds unlike their own, and to push them to…well…"to seek out new life and new civilizations. To boldly go where no man has gone before." Game development programs are in a new and exciting time, therefore, having a diverse, inquiry based general education as a backdrop to a game design program is a strength that more and more employers seek in their potential hires.

There is a striking lack of history courses throughout many colleges and universities that cover the history and prehistory of regions not currently defined as "the West". My experience teaching at 4 different colleges suggests that American students have an extremely poor, if not very inaccurate, understanding of world history beyond what the West experienced after the Dark Ages (even that time period and geographical area of knowledge is oftentimes grossly over-simplified and highly imbalanced). FSU has ~4 non-Western history courses (HIST 2050, 2290, 2501, 3760), suggesting that it is not unlike traditional universities. However, the strengths of the IDIS, GEOG, & ART clusters will surely compliment the Game Design curriculum in terms of the Global Diversity components that are so key for students to have in their higher education.

4.14 Each undergraduate program includes a general education requirement and a major or concentration requirement. At the baccalaureate level, curricula include substantial requirements at the intermediate and advanced undergraduate level, with appropriate prerequisites. Wherever possible, the institution also affords undergraduate students the opportunity to pursue knowledge and understanding through unrestricted electives.

[JB]: The Game Design degree as proposed provides a good approach to this standard. There are several intermediate to advanced classes where students collaborate on game development projects, each bringing specific skills to the collaboration. Both general and specialization electives will have to provide both perspective and relevant skills.

[BC]: Speaking to the general education (unrestricted electives) component to the undergraduate program, I see a wealth of possibilities for students to receive a quality and robust degree in game design while also having the capability to pursue other interests through unrestricted electives. The major program will provide competency in areas of 2D and 3D level design engines, logic and programming languages, and team-based production processes. Tangibly, these are some of the very core components to game design and production—where the students will utilize what they've learned to create their own games/assets to complement their coursework and to show overall competency in the industry.

4.19 The major or area of concentration affords the student the opportunity to develop knowledge and skills in a specific disciplinary or clearly articulated interdisciplinary area above the introductory level through properly sequenced course work. Requirements for the major or area of concentration are based upon clear and articulated learning objectives, including a mastery of the knowledge, information resources, methods, and theories pertinent to a particular area of inquiry. Through the major or area of concentration, the student develops an understanding of the complex structure of knowledge germane to an area of inquiry and its interrelatedness to other areas of inquiry. For programs designed to provide professional training, an effective relationship exists between curricular content and effective practice in the field of specialization. Graduates demonstrate an in-depth understanding of an area of knowledge or practice, its principal information resources, and its interrelatedness with other areas.

[JB]: While the degree as proposed provides in-depth exposure to the theory of making games and even specific processes in various disciplines (art, design, programming), it is unclear if the curriculum will allow students enough specialization. Most studios consider "Game Design" a specific field, separate from "Art" and "Programming". I see the Fitchburg Game Design degree as providing a good education

for the field of "Game Design" but have some concerns about the degree being able to provide enough specialization in the areas of programming or art. Game development often requires game-specific electives. Teaching art or programming for games often requires a different approach than for other disciplines.

[BC]: Clearly, the design of the program will foster and generate game design generalists who will then focus further on their specific areas of interest for further study. The electives that will be offered by the incoming faculty will also broaden those subject choices and will strengthen those already offered by Sam and Jeff. The overall curriculum that is designed for the first year will foster a strong, general knowledge of the many facets of game development.

In addition please evaluate and comment on each of the following review questions for undergraduate level programs.

1. In what ways is the proposed program consistent with the academic mission of the campus?

> **[JB]:** The proposed program blends relevant skills and professional practice with liberal arts – this provides depth to the program and looks to be in line with the academic mission of Fitchburg State.
>
> **[BC]:** The proposed program will help to create global citizens as games are universal to all cultures and peoples. The creative talents of multiple individuals are utilized to create games, and the industry reaches into more traditional areas of business development, marketing, advertising, and target audiences for entertainment. Understanding the global nature of games, as well as the inherent responsibilities when creating games will be mirrored in the general liberal arts education offered by Fitchburg State.

2. How does the proposed program address an area of significant public need in Massachusetts and nationally? Has the College or University presented sufficient documentation, including quantitative documentation, (e.g. State and federal employment outlooks, regional outlooks, etc.) to support the program's need?

> **[JB]:** The program as proposed suggests graduating skilled workers for game development fields in Massachusetts. There is no doubt that students graduating from a program such as this will be knowledgeable about various facets of game development but will they possess enough skill in specific areas to be immediately employable upon graduation? Top tier (AAA) game development traditionally requires a high level of specialization. The Game Design degree at Fitchburg proposes "soft specializations" which may only allow exceptional students to specialize enough for AAA game development. The degree has a lot of potential in the area of game-design but may need further course offerings, perhaps in the form of specific game-development courses in the areas of art and programming.
>
> **[BC]:** One could argue that there is always a need for more diverse art forms to captivate and inspire many areas of our culture. The economic boom that has led to significant innovation and

momentum in the games industry (specifically in Massachusetts) has also led to a rise in well-paying, highly artistic and technical employment opportunities. FSU will be providing the first state school's education for residents of the region, and in turn, will provide the tools necessary for a career in the many industries associated with the games industry at an affordable educational price.

3. How does the overall program design accomplish the program's goals and purposes? Specifically, are the content and sequencing of the curriculum appropriate? Does the curriculum achieve appropriate balance among the component disciplines? Are there major omissions? If so, what are they?

[JB]: The program design requires all students in the Game Design degree to take required courses in various skill-areas and soft-specialize through electives. This can be a valuable approach as each student develops an understanding of the other roles in the game development process and students begin to self-identify for specific roles.

Are the elective offerings enough for students to gain a specialization? Going forward, it may be necessary to offer additional specialized courses based on which direction the program takes. Keep in mind the differences between game production and other fields utilizing common technology -- for example, there is crossover between 3d modeling for video/film and games, but the differences are so great that a student who takes a general 3d modeling/animation course may be ill-prepared for game development. This is often also true of programming, especially in the specialized areas of game programming like graphics, physics and AI.

[BC]: The content, given the initial scale of the program and the instructors that will be teaching and advising within the program, is scaled well for the first 4 years of instruction. The general nature of the education is an intelligent platform to launch the program for those first few years of development. The purpose of the program to instruct individuals who will be capable of engaging and operating in the game sphere has a robust, general educational component that will challenge and inspire the student body. Furthermore, as the program evolves and as more faculty join the current staff, specific electives will bring even greater diversity to the course offerings and eventual areas of student focus.

4. How are the degree requirements of sufficient rigor to produce graduates who are competitive in the field? Evaluate curricular requirements for some type of culminating experience that allows the student to demonstrate mastery of the complexity of study in the major.

[JB]: In my experience, demonstration of mastery in a professionally focused degree is assessed by comparing student work to that of professionals in the field. The "culminating experience" for Game Design students is a 12 credit internship. A meaningful internship at a game development studio can be difficult to land. Other options on the table are to work in internship positions in various departments at Fitchburg State -- it is unclear if these positions will be relevant enough to be assessable as a culminating experience. Other options include a 'portfolio' course where students present a package of their work as a primary for of final assessment and a gate to graduation.

[BC]: As in any academic program, competitive students are not created by the curriculum alone. FSU will hopefully create relationships with the many industry leaders in the area to give students opportunities to professionally connect and to experience relevant internship and networking successes. Furthermore, professional development comes from associations with groups and industry events which are many and often accessible in the region. (Game Developers Conference, PAX East, IGDA, etc.)

Per the curriculum, a culminating experience that would reflect significant industry mastery would be any courses that closely resemble production environments similar to those found in the industry itself. By the 4th year of the program, students should be well versed in the complete production experience which should provide them with an attractive overall package for industry placement advisors to consider.

5. What experience and expertise does the department possess to undertake the proposed program? Will the program have a significant proportion of faculty who hold advanced degrees in the field or in a closely related discipline?

[JB]: Fitchburg State has a history of success with art and design related majors. The success of the film major and other media arts programs with a technology and arts requirement indicate that Fitchburg State and the Communications Media department are capable of undertaking a program like Game Design.

Game Design as proposed is designed and instructed by two passionate and motivated faculty members with terminal degrees. As the program develops it will be necessary to hire additional full time faculty with industry experience and terminal degrees. This presents a challenge but not one that cannot be overcome with a considered and well-timed faculty search.

[BC]: After the initial growth of the faculty to 4-5 full time individuals, coupled with joining adjunct faculty with their areas of specialty, the program will surely have sufficient breath of knowledge to help shape many areas of focus within the discipline of game design. Currently, both Sam and Jeff possess very well-rounded educational and professional experiences to lead the general educational nature for the first couple years of the program. Also, the complimentary faculty in supporting subjects of art, art history, business, marketing, and the computer sciences will provide electives and further areas of study that will parallel the many subject areas that are associated with game development. The strengths of these electives and areas of study will strengthen the game design program.

6. How will graduates demonstrate that they have acquired the knowledge and developed the skills that are identified as the program's objectives? Evaluate the process the College has established to assess the effectiveness of the program in achieving its goals and objectives.

[JB]: Internship as a form of evaluation may be problematic. Internships in specialized areas of game design, the most common being: design, art and programming, are hard to get, require a solid portfolio of work and may not be a good measure of student success. The most valuable game studio internships put interns to work on products. Shadowing an employee for a number of months is an experience, but not one that is easily assessed in terms of added value to a student's

education or skills. The game industry is notorious for struggling to provide meaningful internships to students.

The idea of assessing preparation for internship is a good one. Preparation for a meaningful internship will require specialization and a good amount of work in a presentable form, usually a website, along with a resume and cover-letters, often tailored for specific positions. However, a very high level of skill is required for entry to top game studios, even for internships. In my experience this often requires four or more years of study -- will students be ready for assessment by the beginning of middle of their senior year?

[BC]: There will be many opportunities for students to apply their acquired knowledge and developed skills, specifically with the many companies and industry partners that Massachusetts has to offer. Smaller, student-led events connected regionally to other schools or game-organizations will provide many further opportunities to network and to apply their skills. The objectives of the program will allow for the students to broadly apply themselves across the many areas industry that are showing rapid expansion.

7. How has the institution demonstrated its commitment of the necessary and appropriate resources to the proposed program (including faculty, plant and equipment, and library and information resources) to ensure program quality and program improvement?

[JB]: In terms of seats, the need for labs and facilities has been addressed in the program proposal. The spaces indicated as likely candidates for game development labs are well suited for the task. Based on my experience there are a few things to keep in mind:

- Current 'interactive media' labs at Fitchburg state look to be Mac labs. Top tier/AAA game development is done exclusively on the PC. I do not know of a single AAA studio worldwide based on the Mac platform. If you stick with the Mac as your main platform there will be 3d game engines and software that you cannot work with. The Mac is, however, a common choice for independent game studios that only use specific technology.
- Game development is highly collaborative and requires considerable time away from the computer. Some schools have focused their labs on computer use and have ignored the needs for collaborative space. A 'U' or horseshoe with a large center table or 'pod' layout with a large center table is usually adequate for collaborative needs. It looks like Fitchburg State is currently utilizing one or more of these recommended classroom layouts.
- As a program becomes more specialized, needs for specific hardware and software do as well. Consider avoiding contracts with vendors that require 'exclusives'. This is the computer hardware version of only being allowed to sell Coke or Pepsi products on campus.

Game development and associated curricula have a high rate of content evolution -- in my opinion, every school struggles with this. Even a less specific game design program will require instructors knowledgeable in specific areas. I believe that given the generalist nature of the Game Design program proposal the two faculty members charged with building and teaching the required Game Design courses are well suited to do so. Their background in interactivity, media

and game theory is a fantastic foundation for a game design program. It may be important for additional faculty, as hired, to be more specialized.

[BC]: The program outline suggests that the game design faculty (and supporting personnel including the Dean, President, and faculty from other programs) all have committed to and clearly understand that the timeline of *growing* the game design program into a robust multi-disciplinary program will take years, multiple iterations, teamwork, student effort, and financial backing. All successful programs at any reputable college or university require these components to generate the true "brand" that will define the school's program and the school itself. The core understanding of this principle was bolstered by Dr. Robin Bowen, who asked multiple times how she could support the program in its infancy joined with Dr. Robert Antonucci guarantee for a "quality product" for the supporting years while the program became more mature and evolved. The financial backing of additional full-time faculty with supporting adjunct faculty puts the onus on the program creators and students alike to make the game design program the most successful it can be. The only critique I can think of now is not having seen the working spaces complete (given the new construction ongoing) and not seeing professional development allocations for the faculty in the yearly numbers. Specifically: expenses to cover the conferences that are so very crucial to any educational faculty in both the beginning of a game development program *and also* in this very evolving time period in the industry.

General Comments from Joshua Buck:

The Game Design program at Fitchburg State has a lot of potential, and the institution, from faculty up to the president, appears to be behind the proposal. Facilities, as described, yet to be built, should be more than adequate to support the program. The common concern in most of the above comments is about specialization, particularly in the areas of art and programming. We had more than a few discussions about this during our visit to Fitchburg State. The ideas of "soft specializations", in which students develop some skill in specific areas could work for mobile and independent-type game productions, smaller studios and lower budget productions, but is unlikely to produce students with enough skill in specific areas to target AAA game production. Smaller-tier game production is currently the prime growth area but also the highest risk in financial terms. Going forward, the degree as proposed looks to have the flexibility to become more specialized as needed.