

**FORM A**  
**Board of Regents, State of Iowa**

**REQUEST TO IMPLEMENT A NEW BACCALAUREATE, MASTERS,  
DOCTORAL, OR PROFESSIONAL DEGREE PROGRAM**

THE PURPOSE OF ACADEMIC PROGRAM PLANNING: Planning a new academic degree program provides an opportunity for a Regent university to demonstrate need and demand as well as the university's ability to offer a quality program that is not unnecessarily duplicative of other similar programs offered by colleges and universities in Iowa.

Institution: Iowa State University \_\_\_\_\_

CIP Discipline Specialty Title: **11. Computer and Information Sciences and Support Services**

CIP Discipline Specialty Number (six digits): **11.0105**

Level: **B**  **M** \_\_\_\_\_ **D** \_\_\_\_\_ **P** \_\_\_\_\_

Title of Proposed Program: **Game Design**

Degree Abbreviation (e.g., B.S., B.A., M.A., Ph.D.): **B.S.**

Mode(s) of Delivery (check all that apply): On-campus (face-to-face)  Off-campus (face-to-face)

Online \_\_\_\_\_ Other \_\_\_\_\_

Approximate date to establish degree: Month **August** Year **2024**

Contact person: (name, telephone, and e-mail) **Alenka Poplin**, 515.708.7783, E-Mail: [apoplin@iastate.edu](mailto:apoplin@iastate.edu)

College that will administer new program: **College of Design**

1. Describe the proposed new degree program, including the following:

a. A brief description of the program. If this is currently being offered as a track, provide justification for a standalone program.

The Game Design Major (GDM) provides students with an education in game design and development. Game design and development refers to the process of creating the rules, mechanics, gameplay, and overall structure of a video game, board game, or any interactive experience. It is a multidisciplinary field that combines elements of art, storytelling, psychology, and technology to craft engaging and enjoyable games. The GDM brings together multiple Iowa State colleges, including but not limited to, the College of Design, the College of Engineering, the College of Human Sciences, and the College of Liberal Arts and Sciences to provide a comprehensive and interdisciplinary education.

All enrolled majors complete a common, first-year core curriculum in which they will develop basic skills necessary for their future career plans and success in the GDM. In addition, they will spend that first year joining and building an academic community of future practitioners with their fellow GDM students through those required courses. Students explore theoretical principles of game design, formal and dramatic elements of games, game mechanics, and narrative design. They also assess how culture and history contribute to the design and development of game worlds and narratives. All enrolled students acquire introductory skills in computer programming, drawing, and digital media that can facilitate the rapid prototyping of games and prepare them well for the selection of their focus area.

In their second year, students will begin shaping their own professional profile by pursuing intermediate and advanced skills in one of three focus areas: (1) Art and Interactive Media Design; (2) Game Computing; or (3) Game Worlds, Narrative Design, and Society.

- **Art and Interactive Media Design** will prepare students to solve visual problems in gaming. They will gain skills in drawing, visual design, visual storytelling, storyboarding, character animation, 3D modeling, and related fields. They will learn how to utilize this knowledge in the game development process.
- **Game Computing** will provide comprehensive knowledge in programming, coding, and creating online digital games. Students will gain a profound education in object-oriented programming, data structures, and discrete computational structures which they will be able to apply in game design and development.
- **Game Worlds, Narrative Design, and Society** will provide students with the skills and knowledge to create meaningful and engaging worlds for games of every scale, understand and design dynamic stories, and comprehend the cultural relevance of the games they play, study, and develop. This focus area will support students' acquisition of the skills to apply cultural lessons in the creative and professional areas of their careers.

Our research into game design careers and conversations with experts in industry and peer academic programs have reinforced that each of these focus areas is an essential element of game design. Dr. Jessica Hammer of the Center for Transformational Play at Carnegie Mellon University assessed that our program would enable students to “bring the strengths they learn in their focus areas” into core gaming courses designed to foster “interdisciplinary teamwork around games.” David Schwartz at the Rochester Institute of Technology agreed. The Iowa State program being “split into three domains makes sense” and provides a “good depth of topics within each domain.” And one of our industry partners, Houston Brayton, owner of Gold Creek Games in Des Moines, was impressed that the proposed program “covers the core disciplines that would be expected for a broad understanding of game development.” (See Appendix B for full reviews.) Reviewers recognized that the proposed plan for the degree serves the pedagogical interests of the program *and* the career readiness of enrolled students. Students who graduate with a GDM degree will be prepared to work in major game design studios and companies where specialized skills as game artists, programmers, or writers are sought. Alternatively, many students will find future employment in mid- and boutique-sized game design companies or in adjacent industries. For these jobs they will need a broader, more general skillset. By requiring students to simultaneously develop a specialty and

build complementary knowledge and skills in other focus areas, this program is designed to maximize students' preparation for a competitive and dynamic job market.

Each specialization enables students to deepen their knowledge in their selected area and aims to prepare them well for the needs of the job market. Even as students begin becoming more specialized in their studies, the program continues to require them to take Game Design courses outside their focus area so that they further develop their familiarity with other areas of the discipline. This will promote a basic, yet holistic, understanding of game design and facilitate communication during the game design process, as they are exposed to the culture, skills, and thinking of the other focus areas. Additionally, each year will have common game design courses to ensure that students can interact and build games with each other as they progress through the degree. These courses emphasize the collaborative skills needed in a Game Design career by orienting their course work around team projects. A Game Career Development course will additionally emphasize the multiple career pathways the GDM opens for the students. By creating a diverse community of game designers with certain shared basic skills and individualized specialized skills, the GDM program is aiming to equip the students to enter their third and fourth years empowered to join a team of game designers and create exciting games. As detailed below, in those final two years students will continue developing specialized skills while learning to apply those skills in collaborative, experiential, production-oriented courses within the Game Design program.

During the third and fourth year, the GDM education advances through two key courses – Game Design Workshop and Game Design Capstone – in which students showcase their acquired skills and knowledge. The 3-credit junior-year Game Design Workshop is an intermediate, project-based, collaborative design course wherein students' prototype, create, and test iterations of game design concepts that integrate the basics skills learned in the first two years. In the 6-credit senior-year Game Design Capstone students work in teams to develop a game from the concept stage to prototype to play-tested iterations that culminate in a finished game that reflects market and publication standards. The capstone is essential to the career development of students. It pushes students to illustrate their skills as game designers. Students go through the full process of game development: brainstorming a compelling game, creating a prototype, testing game mechanics, developing a full prototype, playing, and evaluating it, and then improving the game through successive iterations. The main goal of both classes is to work in teams and to apply the knowledge and skills learned throughout the GDM to create game products. The workshop and capstone provide an important team-based, high expectation learning environment reflective of the experience of working as a game designer and developer. These courses will provide the core elements in the portfolios that students will have created during their four-year program. Their portfolios will contain completed games, game design documents, game analyses, and computational models and visualizations. The robust nature of GDM portfolios will provide prospective employers with concrete examples of the students' skills, showing GDM graduates are workforce ready.

This interdisciplinary game design degree focuses on a variety of games including serious and educational games, board and card games, role-playing games, and digital games. The GDM and especially the Workshop and Capstone course projects prepare students for the diverse and expanding game industry as well as allied fields. Students will be prepared to make games at large, midsize, and boutique game design firms and to pursue careers in fields such as marketing and web development, along with the many other fields that value the skills a game designer possesses. This major will seek sponsorships from game industry partners, connecting the capstone course with new product pitch experiences and enhancing job opportunities for graduating majors. Local industry partners will be actively involved with the program - offering invited lectures, critiques, and inspiration to the student developers and opportunities for internships.

Industry partners and academic peers have expressed enthusiasm for this program design, reinforcing the strength of this approach. All students will graduate with the skills needed to succeed. They will have a grounding and familiarity with the creative, technical, and human skills necessary for success as game designers. And they will bring advanced, specialized skills in their chosen area to their new careers.

## **b. A statement of academic objectives**

After finishing the Game Design Major, students will be able to:

- Design publishable games
- Develop, critique, and analyze game prototypes: analog or digital
- Evaluate user experience in games through playtests and iteration
- Explain how human, social, and cultural contexts shape game development and impact
- Utilize the tools and skills of collaboration and creative expression to manage the development of games
- Assess contemporary ethical and cultural issues in game design and gaming culture
- Communicate effectively as part of a team and to various audiences in a variety of professional contexts
- Understand the needs of the game industry and develop their own professional game portfolio

The GDM leadership team will continually assess and adapt these academic objectives as the major grows, as new and current faculty contribute to the degree, and as they receive feedback from students and industry partners.

## **c. What the need for the program is and how the need for the program was determined**

Several data sources suggest a strong demand for a GDM among current and future Iowa State University students. The 2019 Proposal to Review Iowa State University's Undergraduate Programs of Study, produced by the Office of Admissions, identified "game design engineering" as one of three majors particularly relevant to today's student and job market demand. Future students that may enroll in an ISU GDM are already immersed in the world of games and game development. The report specifically writes: "The video game industry is very large, and Iowa State is already well known for its strengths in areas like computer science, software engineering, and graphic design. It might be possible to repackage coursework in these areas to create a Game Design Engineering major."

ISU has a student Game Development Club. The club's Discord channel, an online voice and chat server where users communicate with each other, currently has 653 registered student members. The long-running ISU Guild of Boardgamers & Roleplayers is dedicated to all forms of fantasy roleplaying, historical miniature battles, collectible miniature battles, and board games. It currently has 31 active members. With little substantive advertising, the Game Jam organized by the ISU Game2Work PIRI project attracted over 50 student participants in January 2023. This interest has longevity at ISU. In 2010, two faculty from the Departments of Art and Visual Culture and Computer Science, through a Motorola Foundation grant, hosted a campus-wide game design competition. This was extremely well received; six teams developed playable games and the winning teams received over \$50,000 in prize money. Current ISU students enroll or have enrolled in a variety of courses that focus on games and game design. These courses regularly reach their enrollment limits. Examples of such courses include ARTIS 408 Principles of Animation, ARTIS 475 Interactive Art, and COM S 402 Computer Science Senior Project: Multimedia and Computer Gaming. They attract students in design, planning, and architecture (e.g., CRP 457/557 Geogames for Community Engagement) and respond to the demands for games in the social sciences (e.g., POL S 338X Video Games and Politics).

Other indicators also suggest that demand for a GDM has been growing and will continue to grow on a national level. The PSAT report of Major Selection of 2014 of students in grades 9, 10, and 11 reported an increase of 22% among students naming Game and Interactive Media Design as their desired major. A 2017 survey conducted by Pew Research found that 60 percent of Americans (31.5 million people) between the ages of 18 and 29 play video games (Pew Research Center 2017). A Game Design Major would allow students to convert their personal interest into a meaningful course of study. By introducing a GDM, Iowa State University aims to take a strong, innovative position in a growing area of student demand unserved at our university and underserved across the State of

Iowa. Companies in the state like Gold Creek Games, Numinous Games, and Hatchlings are seeking employees with the skills offered in our proposed degree around design principles, technical skills, and creative expression.

**d. The relationship of the proposed new program to the institutional mission and how the program fits into the institution's and college's strategic plan**

The ISU Game Design Major, as a Degree of the Future, embodies the goals of the ISU Strategic Plan. At its core, this degree incorporates the second pillar of the Strategic Plan, Education Experience, by creating “transformative educational opportunities” in an environment committed to diverse, inclusive, and welcoming education. It takes the skills, talents, and knowledge base of its contributing experts to create learning opportunities that will set Iowa State University apart from other research universities and their programs. A true representation of Iowa State University's land-grant mission, the GDM translates the land-grant ideal described in the Strategic Plan by “integrating science, technology, and human creativity.” Students pursuing this degree will combine human, technical, and scientific knowledge in creative products - games - that can teach, entertain, and enrich lives. Unlike other game design programs which take a largely technical approach to their education, this program integrates the arts and humanities with science and engineering, demonstrating the unique character of Iowa State University to the country and the world.

By offering students the opportunity to study game design and development in a program that melds art, engineering, and humanities, the GDM also serves the Iowa State University mission to “create, share, and apply knowledge to make our students, Iowa, and the world better.” While many programs offer students education in the necessary applications to create games, the ISU program aims to educate students in technical skills while inculcating them with a lasting mindset of “game design thinking,” a methodology that encourages the broad utilization of principles of aesthetics, user experience, narrative, and social impact with applications in game design and more broadly across professional fields. Thanks to this emphasis, students will graduate with a degree that confirms to prospective employers that they have the *skills* to succeed and the *knowledge* to excel. By integrating the ethical and moral perspectives inherent to engineering, design, and the liberal arts and sciences, ISU's GDM translates the Iowa State Principles of Community into games and products that make the world better by implementing and studying real-world examples and learning about them through game design, development, and testing.

With its interdisciplinary approach and full integration of humanistic and social scientific knowledge, the ISU GDM places inclusive practices at the core of its curricular design. The required courses in the first and second year, the third-year design workshop, and fourth year capstone of the program demonstrate explicitly the intersection of the proposed degree with the aspirational goals defined in the Strategic Plan. By focusing on student outcomes and professional possibilities, the interdisciplinary faculty and program of the GDM help Iowa State University “be the university that creates opportunities and forges new frontiers.” Similarly, the core capstone project and game design courses are designed to realize the pillars of the Strategic Plan—to leverage the “innovation, creativity, and entrepreneurial attitude” of faculty with a student-centered approach to curriculum. Engaging industry partners in the development and maintenance of the degree contributes to the third pillar of the Strategic Plan: Community Engagement. The GDM has already established active partnerships with stakeholders among Iowa's game design firms. Using their expertise, the GDM will help boost the gaming industry by responding to the needs and challenges of existing firms while stimulating an entrepreneurial culture among students as they imagine a future in the industry. These partnerships and ambitions inform the proposed GDM and its curriculum and will continue to do so in the years ahead. A GDM at Iowa State University will enable students in Iowa and beyond to come to Ames and, in four years, leave with the education that will empower them for the next stage of the technology economy. These students will succeed in ways we can only eagerly anticipate.

**e. The relationship of the proposed new program to other existing programs at the institution; describe how the proposed program will enhance other programs at the university. Will the proposed program duplicate existing programs at the university?**

The proposed GDM will greatly complement the existing programs at Iowa State University. As an inherently interdisciplinary field, game design offers Iowa State University the opportunity to leverage and enhance scholars and lecturers across the university.

**The College of Design** will manage this interdisciplinary and inter-college major. The College's core design program and seven distinct majors mean that the College has the experience and assets that make it an appropriate home for the administrative elements of the major. Among the faculty are expert instructors and researchers in topics directly related to core Game Design skills including principles of design, visualization, illustration, virtual spaces, experiential environments, user experience (UX), and more. Moreover, faculty in the College of Design have already begun working in games and publishing research related to games. This includes faculty from the Departments of Community and Regional Planning, Graphic Design, Industrial Design, and Architecture. The centrality of studio-based pedagogy to the College's curricular structure also makes it the ideal administrative home for the proposed GDM. The third-year Game Design Workshop and fourth-year Core Capstone courses will be studio-style courses wherein students collaborate with peers and instructors on every stage of game development from concept to iterative prototypes to finished product. The College of Design has experience developing a maker mindset among its students. Its faculty and administration are eager and essential to support a GDM focused on experiential learning and outstanding student outcomes.

All Game Design majors will be required to understand the basic principles of design as part of their studies. Important core courses for the GDM are offered by departments in the College of Design. DSN S 131: Drawing, ARTIS 212: Studio Fundamentals: Digital Media, and GAME 202: Game Design for Serious Games, are first-year required courses all offered by instructors from the College of Design. DSN S 131 and ARTIS 212 are pre-requisites for many courses that students are required or encouraged to take within the major. Furthermore, the College of Design offers courses across its departments necessary for students interested in a deeper specialization in the visual and experiential elements of Game Design.

Two leaders of this proposal are faculty in the College of Design are Alenka Poplin (Community and Regional Planning) and Anson Call (Graphic Design). They will be introducing new courses or revising existing courses as part of the GDM curriculum. Poplin not only teaches a basic game design course (CRP 457/557 GeoGames for Civic Engagement), but also has widely published research on games since 2008 and is well recognized for her research work on serious digital games. Call will introduce a new section of ARTGR 484 titled Analog Game Design and Fabrication, an advanced course in graphic design and fabrication skills for analog games. He also teaches multiple courses that are required or suggested within the GDM curriculum, including ARTIS 407: Principles of Character Animation, ARTIS 408: Principles of Animation, ARTGR 463: 3D Motion Graphics, and ARTGR 484-2: 3D Modeling and Augmented Reality. Similarly, Poplin will teach a new first-year core course, GAME 202: Game Design for Serious Games. Other important GDM courses offered in the College of Design include (but are not limited to) more advanced skills courses such as ARTIS 230: Drawing II, ARTIS 308: Computer Modeling, Rendering and Virtual Photography, ARTIS 407: Principles of Character Animation, and Art History courses including ART H 280/281: History of Art I/II and ART H 395: Art and Theory Since 1945. As is evident from this sampling, departments from across the College of Design have already made commitments to the GDM and other departments in the College will find multiple opportunities to add their expertise.

Many of the contributions of the **College of Liberal Art and Sciences (LAS)** to the GDM are in the liberal arts, including but not exclusive to the Departments of History, English, Political Science, and Religious Studies. Humanistic skills and knowledge are essential to developing games and game worlds that are creative, compelling, or educational. In addition, faculty in LAS are best equipped to support the GDM's proposed academic objective

that students graduate with the ability to “explain how human, social, and cultural contexts shape game development and impact.” As the game industry has expanded, the development of many games includes robust research into their subject matter (e.g., ancient Roman philosophy, the Iraq War, Norse myths, colonialism, and/or democratic elections). Two core leaders of this proposal, Jeremy Best from History and Jeffrey Wheatley from Philosophy and Religious Studies are planning to introduce sibling 200-level courses: GAME/HIST 200X: Game Design and History and GAME/RELIG 200X: Game Design and Culture. Both classes explicitly link the skills of the liberal arts to designing games. Best and Wheatley also intend to introduce upper-level courses related to Game Design. Wheatley plans a 300-level Heroes, Myths, and Games course and Best aims to offer a 400-level Historical Wargames course. Other faculty have begun innovating in this area as well. For example, Jonathan Hassid from Political Science has introduced POL S 308x: Video Games and Politics.

The basis of the GDM computer programming curriculum comes from the Department of Computer Science. All Game Design majors will take COM S 127: Introduction to Programming, and students will have the option in succeeding years of taking intermediate and advanced coding and programming courses in the department. In addition, one of the proposed faculty hires for the GDM will be a computer scientist able to develop and teach new courses in coding digital game engines and advanced gaming computer science courses. These offerings would complement COM S 437: Computer Game and Media Programming (taught by James Lathrop) to create a strong sequence for students interested in digital game programming. The Department of Computer Science has been a consistent partner with the GDM. The addition of dedicated faculty with a strength in game programming will play an important role in the growth of the major and benefit both the GDM and the Department of Computer Science.

Other departments in LAS already offer courses and plan to introduce new courses that will contribute to the major. The Department of English plans to introduce the 300-level course titled Writing for Games which will be required for the Game Worlds, Narrative Design, and Society focus area. The Department of English already has game-related courses on Creative Writing (ENGL 304 and 315), The Analysis of Literature and Culture (ENGL 330), and Technical Writing (ENGL 411) that students in the major will be able to select. Other faculty in History, Philosophy, and Religious Studies teach courses appropriate for inclusion in the GDM. Faculty in the Department of Psychology are already involved in research relevant to game studies. These include subfields like child psychology, aggression, media effects, gaming disorders, video games (taught by Douglas Gentile) and violence in games (taught by Craig Anderson, who was also the director of Iowa State University's Center for the Study of Violence (Iowa State News 2010)). Among their course offerings, PSYCH 386: Media Psychology will provide an important course to Game Design majors as they work to understand the social significance and impact of games. Finally, the newly created Music Technology Minor in the Department of Music and Theater offers courses (and a practical minor) that Game Design students will find useful. The Minor's focus on the technical tools of music production and theory may be useful for students invested in games-related sound design. Intended to serve students with minimal musical prerequisites, Game Design majors will have no trouble integrating this course work into their study plans. The size of the GDM also allows for students to seek out majors and minors that would complement their work; excellent candidates could be a more focused Computer Science major, a minor in Political Science or History, or a major in Journalism and Mass Communication.

The **College of Engineering** has specialists in a multitude of fields with direct connection to game design and development. COE faculty in Civil, Construction, and Environmental Engineering, Industrial and Manufacturing Systems Engineering, and the Virtual Reality Application Center (VRAC) participated in the early conception of the GDM. For example, Cassandra Rutherford and Beena Ajmera from Civil Engineering are currently involved in several projects using game design to teach geotechnical engineering principles. This work is already interdisciplinary, including collaboration with GDM leadership team member Poplin (Community and Regional Planning) and Alyssa Emery from Education. This indicates the ease with which the research and teaching interests of engineering faculty can support participation in the GDM. In addition, the Department of Electrical and Computer Engineering has recently introduced a B.S. in Cyber Security Engineering. Game developers, and

especially smaller companies that only have a few employees, will need awareness and skills to combat cyber-attacks. GDM students can take classes in this program to gain a basic understanding of best practices when it comes to securing their data and property.

The **College of Human Sciences** and in particular the School of Education faculty member Michael Brown has a significant presence on the presidential interdisciplinary research initiative (PIRI) project Game2Work (G2W). He is a co-lead of G2W along with Michael Dorneich from Industrial Engineering. The project concentrates on faculty research integrating games with teaching and workforce development. It regularly brings industry partners together with ISU researchers, faculty, and students. The team organizes game jams on ISU campus and greatly contributes to the game industry and university forming unique partnerships on game design, implementation, and marketing. Conversations between the GDM leadership team and G2W co-PIs have established a strong starting point for future cooperation and a joint commitment to successful collaboration.

At the moment, **Ivy College of Business** and its faculty have participated in GDM planning to a limited extent. However, Game Design majors may have interest in the entrepreneurial side of game design and will benefit from basic project management skills. For this reason, the GDM leadership team plans to expand this cooperation with Business faculty. Currently, the curriculum makes a strong recommendation for students to consider the following courses in entrepreneurship: ENTSP 310: Entrepreneurship and Innovation and ENTSP 313: Feasibility Analysis and Business Planning. Further integration of business faculty expertise in the curriculum is expected in the near future.

As this overview shows, the curriculum in GDM aims to draw from many courses offered by a wide variety of disciplines. It will begin by instituting a coherent, innovative curriculum that mainly works with existing courses across the university. Because Game Design has not been an organized field of study at ISU, it will be necessary to add nine core Game Design courses and two optional courses that described in Appendix A. These courses will provide GDM students with purpose-built pedagogical spaces for developing and practicing game design and development skills that bring together the lessons learned across the university's many disciplines. The major will serve them inside and outside the program by organizing and coordinating game-related courses, building a pedagogical community and expanding resources available to students of all majors. This interdisciplinary program aims to recruit new students to ISU, sustain departmental participation through collaborative arrangements, and organize games-related curriculum for campus-wide efficiency and quality. It represents a unique program of study that leverages the strengths of ISU's nationally and globally esteemed programs.

**f. Special features or conditions that make the institution a desirable, unique, or appropriate place to initiate such a degree program.**

As a **Degree of the Future**, the GDM will amplify the university's strengths in innovation and entrepreneurship. As an innovative institution, Iowa State University would join two-year programs at local Iowa community colleges as the first public, four-year university in Iowa to offer a game design major degree. The major and its activities will be a hub that initiates and sustains forward-facing technological innovation; connects foundational research and teaching in the sciences, liberal arts, and design disciplines; stimulates applied research and teaching in engineering, human sciences, and business; and connects public interest entities, game industry partners, and employers allied in Iowa and beyond.

**Innovation.** Since the development of the first digital electronic computer, Iowa State University has long invested in technological innovation. This commitment to innovation extends to all of Iowa State University's departments and supplies the key foundation to expand the university's land-grant mission. The interdisciplinary GDM will help Iowa State University extend these historical strengths into a growing area of public and economic interest: game development and culture. Existing initiatives demonstrate the campus is ready to take a leading role in this important field of education and research. The development of quality and successful digital and analog games requires advanced technology and is a key component for game development. Some of these areas, such as computer science, virtual reality, animation, art, user interface design, and fabrication, are already established



strengths at ISU. Others, such as artificial intelligence and cybersecurity, are emerging strategic emphases. Today's game designers and developers are always pushing the boundaries of what's possible with human engagement in technology, and these areas of university strength show that the GDM, and its students, will find themselves in good company on the Iowa State campus. The GDM will harness the university's strengths in technological innovation and apply them to the culture and industry of games.

**Entrepreneurship** is a driving force of innovation and is a vital part of Iowa State University's vision. The GDM will encourage an entrepreneurial mindset where students will learn to think innovatively about the application of games across industries and cultural areas. Courses such as GAME 210: Game Career Development, the third-year Game Design Workshop, and the Game Design Capstone will integrate skills and concepts central to entrepreneurship. In addition, the GDM will strengthen its offerings in this area by working with the Ivy College of Business to develop courses specifically intended for students in this program. Through their work in these courses, students will show that games can be used in a variety of applications including business, planning, military, agriculture, engineering, education and more. They can be designed as serious games tackling real-world problems or games for entertainment with educational components. Some games can teach and train skills while others may guide or represent a companion in difficult times such as applications in health or mobility and navigation in cities. The GDM will foster entrepreneurship by funding student projects, providing students with opportunities to conduct undergraduate research, encouraging students to present their games in public forums, and creating space for students to collaborate with industry partners. The GDM will facilitate industry-funded projects and the creation of start-up projects in collaboration with the local game industry and companies located in the ISU Research Park.

**Interdisciplinary collaborations** shape Iowa State University. The GDM manifests ISU's land-grant ideal as described in the university's Strategic Plan by "integrating science, technology, and human creativity to work." Modern industries and social problems require multiple disciplinary perspectives and inputs to achieve innovative, critical, sustainable, and responsive results. Current ISU faculty investments in interdisciplinary innovation is evident in the wide-ranging list of fields of the faculty who have contributed to developing the GDM program thus far. This list includes faculty from six of ISU's colleges and a leadership commitment from the Colleges of Design and LAS that has led to a proposed curriculum designed to stimulate and serve student ambitions in Game Design and beyond. Students will be taught how to make innovative and useful game products and work as part of a collaborative unit, key skills that can be nurtured and supported by ISU's world-leading culture of innovation and entrepreneurship.

The existing educational programs at ISU will greatly benefit from having a game design major in place. As suits a large, flagship university like ISU, the GDM aims to attract outstanding students from across the region. In addition to enriching the student body, the GDM will attract top-tier faculty with a broad range of skills and unique research agendas in game design and game theory, augmenting ISU's already strong commitment to high-quality research. And as a teaching and research hub that spans colleges, the GDM will serve as a catalyst for new collaborations. The resulting projects will be able to leverage expertise and strong working relationships to achieve greater success with major funding agencies. Researchers will be able to tap prestigious grant funding agencies that value innovation like the National Science Foundation (NSF), National Endowment for the Humanities (NEH), and private non-profit and corporate funders.

The **game industry** in Iowa and beyond needs qualified graduates. It especially needs highly educated and well-rounded game designers and programmers. As part of the process of developing this proposal, faculty have already consulted Numinous Games, Hatchlings, Gold Creek Games, and other games industry partners to better understand these needs. Feedback from these partners has shown they eagerly anticipate hiring graduates with the skills and experiential learning opportunities built into the GDM. Going beyond the local economy, our graduates will garner attention from game industry employers across the country due to the variety of skills and knowledge this program will offer to them. In addition, the skills and knowledge gained in the GDM have value in other fields that require skills in computer programming, project-management, human organizational and relational skills, graphic design and animation, web development, design principles, and more. Examples of

possible careers suggested by GDM research, the Hanover Research Academic Program Assessment, as well as the program evaluation from the Rochester Institute of Technology (RIT) during a site visit in September 2023 include opportunities in web design, marketing, media firms, advertising, and more. Hanover Research provided consulting service for the leadership team of GDM and an overview of game design programs; RIT was selected as a top game design program based on the Princeton Review rankings and engaged to review the proposal.

More generally, by educating and developing game designers and developers in Iowa, the Iowa State GDM will seed local communities with a technologically savvy, adventurously creative, and professionally optimistic work force keen to build existing businesses and develop ventures of their own. Game designers and developers bring experiential expertise that is adaptive and inclusive for a variety of users and skills that apply beyond tabletop or computer games. The unique skills needed to inspire and sustain creativity and innovation can be gained efficiently and powerfully through the proposed GDM. By developing new capabilities among Iowa State facilities, faculty, and especially students, the GDM will serve the Iowa economy by attracting and developing a young work force equipped to lead technological innovation, social impact, and human creativity.

**g. Describe the personnel, facilities, and equipment necessary to establish and maintain a high-quality program. Include any reallocations from other programs or areas of the university.**

ISU GDM envisions the enrollment of 30 major and 20 non-major students in the first year. A sustained and positive demand for the program is anticipated in the following years with an enrollment of 240 majors after the first four years. This phased approach will allow the program to establish its systems and norms, bring facilities online, and integrate new faculty and staff while continuing to adapt to students' needs.

A major of this size will require serious institutional investment from the beginning to ensure a healthy and sustainable program with the capacity to serve students well. To adequately recruit students for the program, ISU will need to provide facilities that demonstrate a strong commitment to high-quality, high-achieving Game Design students. As enrollments and the major's campus contribution expand, the demand on resources will extend beyond the immediate, specialized courses of the GDM. Participating and supporting departments will need to absorb the growth in enrollment for basic, intermediate, and advanced courses. The GDM needs investment in student services in the form of personnel; support for curriculum and student success in the form of new faculty hires; and expanded pedagogical resources in the form of facilities and equipment.

Before turning to new resources, it is worthwhile to note the proposal's use of existing resources on campus. In many cases existing classroom facilities, equipment supplies, and budgets will satisfy initial GDM needs. The interdisciplinary nature of the curriculum works with many existing courses across the university and the GDM leadership team expects a significant area of curricular development to be undertaken by the existing ISU faculty. Faculty involved in teaching will remain supported by their contracting departments. More directed leadership of the curriculum and GDM operations will be provided by the leadership team drawn from participating faculty. This transition may require those faculty who teach core GDM courses to renegotiate their Position Responsibility Statements to guarantee curricular coverage and ensure the sustainability of the program.

The new GDM will require lasting support. It is expected that the major will reward this support with significant student enrollments in the major and through contributing to student success across the university's colleges and departments. The resource needs of the GDM are described in the following categories: Leadership, Faculty, Facilities, and Equipment.

### **Leadership**

The core leadership of the GDM consists of the program director, program team, an academic advisor, and an administrative manager. The program director and the program team are also involved in teaching and research. The main responsibilities of the leadership team are as follows:

- The **Program Director** oversees the program and is the main person responsible for the operation of this program and for developing a sound vision in collaboration with the program team. As a defined-term appointment from among eligible ISU faculty, the program director will continue to teach courses in their

own discipline combined with the needs of the GDM. The program director's additional responsibilities include supervision of staff, recruitment efforts, management of the budget, overall supervision of the curriculum, and ongoing coordination with the Program Team. The work is compensated with a summer salary (1/9 of the base salary) and one or more course releases per semester dependent upon negotiations.

- The **Program Team** serves as the admissions, curriculum, and hiring committee. At the beginning of the program, membership of the Program Team will consist of two members from LAS and two members from the COD; more expansive participation from the university as the program expands may be considered. The Program Team will also be responsible for the creation of the governance document and its revisions. Membership on the program team will be contingent upon sustained and meaningful involvement in GDM teaching, research and other initiatives. The Program Director and Program Team are referenced in collective as the Leadership Team hereafter.
- **Administrative support.** The demands of developing a new major with challenging requirements including the need to coordinate teaching across the campus and help students navigate its curriculum indicate significant administrative support will be needed from the beginning. An Academic Advisor (50%) and an Administrative Manager (50%) are proposed to support enrolled students and the administration of the program. Particularly during the first few years of the program, these two staff members will need to educate themselves on the interdisciplinary curriculum, learn how to work with faculty in multiple departments and colleges, and familiarize themselves with the career goals sought by and available to GDM students. As aspirants to an emerging area of employment studying a future-facing discipline, GDM graduates will need more-than-average advising support. This is because unlike many of ISU's current graduates, the path to a career is less established and more dynamic. Both administrators will also directly support the Leadership Team in daily student advising and administrative activities such as budgeting, enrollment, communication with prospective and current students, support of internships, study abroad and field trips, site visits, room scheduling, facilities management, and course scheduling. As the GDM grows, these positions will also need to expand proportionately to the growing enrollment to maintain a high quality of the services detailed above.

## Faculty

Though much of the GDM will be taught by existing ISU faculty, a successful program that will be able to grow along with student interest and participation must be established from the beginning. The addition of three additional faculty in the first three years of the major will maximize the impact of the existing resources and establish strong roots for future growth. Beyond the five-year phased plan outlined by this proposal, additional hires may become necessary. These three initial hires are proposed as partnerships with existing departments to provide coverage of courses for the GDM and ease demands on existing faculty involved in teaching for those departments. In addition, these faculty will serve areas of known future need in the GDM.

This proposal envisions hiring two new faculty in the first year, followed by another hire in the third year to support target enrollments. The faculty needs can be described as follows:

- **Tenure-track faculty on the intersection between computer science and game design** to ensure a designated expert in game-design related applications, game engines and required programming languages (LAS/Computer Science).
- **Tenure-track faculty in digital design and/or design-related fabrication methodologies** to ensure faculty expertise in the intersection of digital design methodologies and analog/digital game design. This hire will teach specific game design courses including the Game Design Workshop and the Core Capstone course (COD/Art and Visual Culture or Community and Regional Planning).
- The Year Three hire will be targeted to address specific needs indicated by a close study of Year One and Two implemented by the leadership team, thus the following description is intended to represent an anticipated need that may be subject to revision: **Tenure-track faculty in narrative design methods and**

**product development** to ensure support for courses in game design professionalization, prototyping, iteration, and production. This hire would teach courses related to their specialization and support teaching of the core courses including the Game Design Workshop and the Core Capstone (Department TBD).

To ensure the successful operation of the GDM, the following additional, faculty-related and miscellaneous funding will be needed as follows:

- Start-up packages for newly hired tenure-track faculty in proportion to their professional needs.
- Professional development funds for GDM faculty, distributed proportionally based on level of program participation.
- Funds for student support activities. Examples include funding for First-Year academic support, Student Learning Community facilitation, recruiting and retention events, community-building and campus engagement activities, outreach, advertising, summer camps, and for collaboration with student clubs. The program could, in this way, work with the ISU Game Development Club, ISU Guild of Boardgamers and Roleplayers, or the Gaming and Esports Club.

## Facilities

The GDM requires initial facility commitments that are essential for its successful operation. These spaces are needed for the successful operations of the major and recruitment of students to Iowa State. Their availability and visibility will further support the recruitment of prospective students. A dedicated office space for the leadership of the program, a Game Development Lab (GDL), and a Game Prototyping Room (GPR) will be needed.

The Program Director, Academic Advisor, and Administrative Manager need a **dedicated office space** to facilitate their collaboration, ideally in an office suite that includes space for student consultations and meetings involving the GDM Program Team and faculty involved in teaching and management of the program.

GDM will also require devoted spaces for purposeful play, testing, iteration, revision, and interaction among students, faculty, and industry partners. While these spaces are essential for the operations of the Game Design Workshop and the Game Design Capstone, they may also serve students working independently on their game-related projects. This proposal envisions a Game Development Lab (GDL) and a Game Prototyping Room (GPR).

**The Game Development Lab** is a dedicated computer lab space for the development and study of digital games. The GDL will have virtual gaming equipment (Oculus glasses and other VR devices, for example), gaming consoles, and computers equipped with software needed for digital game development. This space allows for the investigation of existing digital games and the creation of new games. **The Game Prototyping Room** supports the development and study of analog games, prototyping, and playtesting. This room would need to be physically larger than the GDL as it requires large spaces for play and experimentation with game designs. It also requires storage space for sample games and game prototypes, as well as lockers or similar furnishings for students to safely store their game materials and prototypes in development. Reasonable, ongoing investment will be necessary to keep the GDL and GPR hardware, software, and supplies at the cutting-edge to maintain the relevance of students' skills.

## Equipment

In addition to the personnel and facility costs, commitments from the university and its units in the form of the equipment needed for game development, design and testing are expected. These resources aim to support student learning and allow for the program to start strong with good prospects of ongoing growth. The GDL and GPR require computing resources, as already detailed above. In addition, students need on-demand access to fabrication equipment for analog game prototypes. A non-exclusive list of tools needed for student success includes access to 3-D printers, Computer Numerical Control (CNC) routers, laser cutters and engravers, specialized 2-D printers, printmaking tools, and other fabrication resources. They are available within the College of Design and at the Student Innovation Center, but a careful study of usage and capacity will be necessary before or just after the formal initiation of the GDM to determine ongoing needs and ascertain future investments.

A successful GDM also requires an extensive research library of games and game development materials. There is an opportunity for Parks Library to partner with GDM program to develop a **Game Collection for Game-Based Learning**. Such a resource can serve faculty across the university and establish ISU as a center of excellence in game studies, like the GDL and GPR, and a Game Collection would serve as a recruiting tool for the GDM. As an initial effort to begin the creation of such a space, GDM leadership team members used the application process for an Affordable Course Materials Jumpstart Initiative to open discussions with Parks Library to begin creating the Game Collection. Leadership at the library has shown interest in beginning to form a game collection and hardware support, but a commitment from other units and programs on campus would accelerate the realization of a viable library resource. Parks Library staff has begun researching and developing systems for accession, circulation, and management of game materials. The GDM team is eager to collaborate with the library to make the most efficient use of resources and to provide expertise regarding what game-related materials should be acquired. Additionally, the GDM faculty will pursue avenues for extended support including grant-writing and donor management.

**h. How does student demand for the proposed program justify its development? What are the anticipated sources of students to enroll in this new program?**

The GDM will attract students from Midwest high schools and nearby community colleges due to its innovative curriculum and opportunities to collaborate with local game industry partners. Its interdisciplinary scope, substantial curriculum, connection with industry partners, and experiential learning will attract students from Iowa, the Midwest, and beyond. ISU has existing majors relevant for game design such as Computer Science, Graphic Design, and English. However, these majors are not focused on games. Games are a unique medium and emphasize interactivity, player agency, competition, and collaboration. GDM students need to learn “game design thinking” alongside other technical skills. Not only are games a unique medium, but they are also an increasingly popular one. Current and future generations of ISU students have grown up in a culture of games and gaming. A Hanover research report states the following: “Gen Zers are looking for institutions with good career preparation, interesting coursework, and engaging professors who care about their well-being. 91% of Gen Zers say ability to work with cutting-edge technology would influence job choice among similar employment offers.” The GDM will channel student passion for games into a focused plan of study where they will learn to code, draw, analyze, play, and create games to be able to make innovative and meaningful games while becoming workforce ready by also taking care of their well-being.

The main focus for recruitment will be high schools in Iowa and its surrounding states. The leadership team will especially engage and host events for high schools that have digital media, computer science, and game design courses included in their program. There are 453 high schools in Iowa out of which 402 are public and 51 private (HighSchools 2023). The majority have at least one of the above listed programs. Des Moines Public Schools’ Regional Academy Central Campus, for example, offers classes in software design, gaming, and programming. Their website describes the coursework as follows: “Students will study game design & theory, including critical thinking, story and game creation, scripting, game development tools, game physics, game environments, sounds and audio for games, functionality, and managing a game project. They use the design process as well as other skills (graphic design, programming, and music generation) to create a culminating video game. Game engine Unity will be used to package images, textures, sounds, music, media, and programming code into a final game product. Students should anticipate publishing a video game for public viewing” (Des Moines Public Schools 2023). Many students attracted to the GDM will not only have some experience playing games but also in creating them, making a more intensive program like the GDM a space for further growth.

Community colleges are another source of students with several offering relevant degrees for the GDM. For example, Iowa Lakes Community College in Estherville offers Associates of Applied Sciences in Game Design and Development (IA Lakes CC 2023). Students develop their skills in computer hardware, networking, and basic computer programming. They receive training in game programming, 3D modeling and animation, level design, and game engines. ISU’s GDM may be of interest to these students because its three focus areas allow for more specialized education. Students studying at Des Moines Area Community College (DMACC), a public community college in central Iowa, may be interested in continuing their education in the GDM. DMACC offers many Programs

and Majors that could feed into the GDM, for example: Associates in Animation and Rich Media, Business & Information Technology, Civil Engineering Technology, Computer-Aided Design Technology, Digital Marketing, Graphic Design, Network Technology, Sales and Management, Supply Chain Management, Telecommunication Technology, Theater, or Web Development. DMACC served 35,488 credit students and 29,021 noncredit students in 200 programs in 2019. Marshalltown Community College is another community college with which the GDM will pursue collaboration. Marshalltown currently offers an Esports Program Management degree where students learn about the emerging world of esports and players' competitions and tournaments. Students in this program, having learned about Game Studies and computer programming, may be interested in learning how to design, and develop games and enroll in ISU's GDM.

The GDM Leadership Team together with supporting staff at the College of Design will create appealing videos, a website and promotional materials especially targeted to this population of prospective students. Visits to high schools and academies like Central Campus are planned to provide information about the GDM and to inspire students there to enroll in the program. The team also plans to partner with ISU Extension to host game summer camps and summer schools for high schoolers and other prospective students. These activities will showcase the strengths of the major by bringing together joy, social importance, and the reward of creating games in a fun and collaborative environment. Additionally, the GDM Leadership Team will work with community colleges to inform students about the program and develop standards for transfer students so they know how their community college coursework will count towards the ISU GDM. At the invitation of those community colleges, the Leadership Team will also engage in direct recruitment activities.

**2. Describe the state and/or national workforce need and/or demand for graduates of the proposed program currently and in the foreseeable future (provide the sources of data used to estimate workforce need and demand)**

Market researchers project that the global video game industry will grow by 73.8% from 2020-2027. The proliferation of smartphones, the growing internet penetration rate, and the easy availability of games on the internet are expected to contribute to the growth of the market (GrandView 2023). A new report from Juniper Research (2023) reveals that the video game industry's value will exceed \$200 billion in 2023; nearly a third larger than its \$155 billion worth in 2020. This growth is expected to be led by mobile and cloud gaming. As evidence, cloud gaming and other video game subscriptions, such as Xbox Game Pass, are predicted to grow at an estimated rate of 9% per year through 2023, eventually accounting for \$8 billion of industry revenue (Garner 2020). The global board game industry brings in a total revenue of \$3.13 billion and is expected to show an annual growth rate of 7.83% between 2023 and 2027 (Statista 2023). Collectively, this data suggests a growing industry with matching growth in workforce demand.

Open video game designer positions in Iowa currently exceed 2,180 (CareerExplorer 2023). In Iowa and nationally, demand for video game designers is expected to grow by 9.3% through 2026. The Bureau of Labor Statistics (2023) projects an increase in demand for software developers from 2020-2030. Even during outbreaks and pandemics, the video game industry continues to exhibit remarkable growth driven by its suitability for maintaining social distancing while retaining its interactive character (GrandView 2023). This growth is likely to be concentrated in certain areas of the market. Since 2014, both augmented-reality (AR) and virtual-reality (VR) gaming jobs and positions with this expertise have seen dramatic growth. AR/VR jobs have experienced over 400% growth. These jobs are concentrated in traditional video game publishers even as many large (non-gaming) tech companies are expanding their AR/VR divisions. Similarly, job growth for Esports positions steadily increased between 2015 and 2017, with over 40% growth overall (Indeed 2017). With the launch of Esports leagues and teams since 2017, these numbers are likely to continue growing at a similar rate.

There are other important indicators showing that there is significant room for expansion of the game industry and allied fields in Iowa and the wider region. Iowans could greatly expand the state economy's role in this emerging sector, drawing future employers and stimulating an entrepreneurial climate around game development. There is an opportunity to build on the many advantages Iowa and its communities have for attracting new businesses, including a favorable business environment and low cost of living. The GDM, along with

these regional advantages, can stimulate state innovation and contribute to a more robust game design and development industry. As the evaluation report by David Schwartz of Rochester Institute of Technology from the previously mentioned site visit in September 2023 stated in response to this proposal, Iowa and nearby states do not currently have strong game design programs. ISU GDM aims to fill this gap.

Beyond game design and development companies, many current industries in Iowa will be interested in hiring GDM graduates. According to IBIS World (IBIS World 2023), four of the ten largest industries in the state demand design, programming literacy, communication, and project management skills. The value of these sectors is considerable: Life Insurance and Annuities, \$49.0 Billion(B) in 2022; Property, Casualty, and Direct Insurance, \$14.9B; Hospitals, \$13.8B; and Commercial Banking, \$12.7B. As the proposal's outsider reviewers at RIT reinforced, game-based learning, gamification, serious games, analytical games, interactive exercises, and other GDM activities can enhance Iowa's existing and future industries. The GDM can expand hands-on training for agriculture, manufacturing, visualization processes in all existing industries, or contribute to the improvement of software for supply-chain management. It will also result in more technologically advanced skills that will create an invaluable trained local and regional workforce that can be hired by the game industry as well as other adjacent industries. As the Hanover Research Academic Program Assessment stated, game related occupations, including "software developers, graphic designers, web and digital interface designers, and special effects artists and animators are expected to grow 12.3 percent in Iowa from 2022 to 2031." There is an immense potential for the GDM to expand on the contribution this newly educated workforce will make in Iowa and beyond, expanding its existing skills set, knowledge base, and innovative spirit for the state and future employers.

- 3. The dean's office in the academic college proposing the new program is required to contact the corresponding dean's offices at the other two Regents universities (if there is no corresponding college, consider related programs in other colleges or contact the Provost's office for guidance). In some cases, such as for an interdisciplinary program, more than one college at the other universities may need to be contacted. Please summarize how this cross-institutional outreach was completed.**

Led by the senior associate dean Dr. Seda McKilligan, the ISU College of Design contacted deans at the University of Northern Iowa and the University of Iowa. The **University of Northern Iowa (UNI)** has programs in art & design; business; cultural studies; environment; health; human & social services; languages, politics and justice; STEM; and pre-professional. The **University of Iowa (UI)** has programs in the areas of engineering and computing; languages, culture, and society; life and natural sciences; education; health sciences; math and quantitative sciences; writing, communications and media; business, economics and management; professional programs; social sciences and policy and visual and performing arts. Their Computer Science program is also strong. Their EPX Studio is a student organization that hosts and supports a community of creators. Most members pursue game and animation projects, but they support all forms of digital content creation (EPX Studio 2023).

- a. Date that Form A was sent to dean's offices at the other two Regents universities.**

Form A was sent via email on August 16<sup>th</sup> to both universities.

- b. Date and format (email, telephone, video, in-person) of discussions between the dean's offices, and names/titles of those who participated.**

An email was sent to Associate Dean Racevskis Roland, University of Iowa. His response was returned in a written form in an email dated August 31 and can be found in the Appendix of this proposal.

Another email was sent to Jennifer Cooley, Associate Dean at the College of Humanities, Arts and Sciences, University of Northern Iowa. Her written response was sent via email dated August 23 and can be found in the Appendix of this proposal.

- c. Summary of feedback received from the other two Regents universities, including any concerns raised. Where relevant, describe current or planned collaborations related to the program.**

Both universities, the University of Northern Iowa (UNI) and University of Iowa (UI), responded with support for the Game Design Major. On behalf of UNI, Associate Dean for the College of Humanities, Arts, and Sciences

Jennifer Cooley wrote “to express [their] support for the proposed new Bachelor of Science Major in Game Design at Iowa State University. Upon review of the proposal, we appreciate its interdisciplinary nature, its timeliness and the diverse outcomes and employment opportunities the program seems likely to produce.” Dean Cooley shared that their college did offer a course titled Video Game Design, but that there were no plans to create a game design major in the foreseeable future. As such, they enthusiastically support the ISU GDM and the employment opportunities it will offer to its graduates.

The faculty and leadership at UI shared UNI’s support and shared extended comments on the GDM. First and foremost, they expressed their support for the major’s emphasis on the creation of games throughout the curriculum. This will enable students to produce an extensive portfolio that can be shared with prospective employers. They supported the plan to manage core courses related to game design through the Leadership Team which would, as they observed, lead to a stronger, more sustainable program. One UI faculty member additionally endorsed the design of the major and its relationship to Iowa State’s existing faculty talents and “found it really interesting and encouraging that they are taking such an interdisciplinary approach and using primarily current faculty and preexisting courses to do so.” The same person went on to praise the proposals to create multiple labs for gaming and integration with virtual reality and console gaming as “inspiring and forward-thinking.”

The collected comments from UI did include some cautions related to certain specifics of the proposal. First, they warned a capstone heavy study might stretch the capacity of GDM faculty to meet student needs. Second, though they lauded the program’s interdisciplinary design, UI commenters pointed out the complex work required to guarantee game design content in courses drawn from departments beyond the core program disciplines. The email from UI appears in Appendix C. The friendly suggestions to improve the major proposal encouraged clarification of the proposal language and reflected changes to the draft curriculum already in progress at the time of UI’s response. The response to these suggestions is covered in more detail in section 4d below.

**d. Was the proposal modified to reflect these discussions? If so, describe.**

The proposal as evaluated by the UNI and UI was modified in order to respond to their suggestions and comments. The initial curriculum featured a “mini-capstone” in the third year of study and a 6-credit capstone in the fourth year of study. The “mini-capstone” has been renamed a Game Design Workshop course to better reflect its purpose. The idea for this course has been revisited. It will involve several group projects designed to develop and advance students’ skills in multiple areas of game design. Its main goal is to experiment and implement novel game designs to test and apply theory and practice learned in the first two years of the GDM. As such, it will generate innovative examples that can be used in students’ professional portfolios. This change reduces the GDM curriculum to one main capstone that was also renamed Game Design Capstone to clarify its place in the curriculum. It is a 6-credit, single semester course planned in the final year of study. It will be co-taught by two faculty members to provide broad instructional expertise. The team-teaching design will also allow for intensive student course work while avoiding over-taxing the faculty (a concern raised by UI).

The second concern raised in the comments was that the GDM may have difficulty guaranteeing the relevance and quality of courses offered by faculty beyond the core curriculum. To address this concern Section 1g regarding the GDM Leadership Team has been revisited. One of the functions of the Program Team, in collaboration with the Program Director, will be to curate and support the quality of courses approved for credit within the major. The Program Team will work with instructors to ensure that courses offered for GDM credit meet the agreed standards regarding the needed and required content. The Leadership Team will also use available resources to encourage, solicit, and guide the creation or adaptation of appropriate courses for inclusion within the GDM curriculum. This function will maintain the vitality and dynamism of the program, allowing it to grow and change as needed and should help minimize the challenges identified in the UI comment.

Finally, one comment from UI raised concerns that the Game Computing track did not sufficiently reflect the demands of employers in computer game design. As a response to this comment, the program team initiated a meeting with College of Design Associate Dean Seda McKilligan, LAS Associate Dean Amy Slagell, Computer Science Chair Hridesh Rajan, and Assistant Professor of Computer Science James Lathrop on August 28, 2023. The purpose of this meeting was to receive essential feedback on the proposed curriculum for Game Computing. As a



result of this meeting, the GDM team met again with Lathrop on August 30 to reconcile the GDM curriculum with the curricular requirements as identified by Computer Science faculty. Substantial changes were made to the selection of courses and their sequence and James Lathrop/Computer Science has expressed satisfaction with the changes. The GDM leadership team now feels this focus area to be pedagogically effective, sustainable, and supportive of student success. During a site visit and proposal review at the Rochester Institute of Technology on September 18 and 19, this revision to the Game Computing focus area was further validated by RIT's faculty with a great praise of the selection of the courses and their sequence.

**4. List other public and private institutions of higher education in Iowa currently operating programs similar to the proposed new degree program. (For comparison purposes, use a broad definitional framework, e.g., such identification should not be limited to programs with the same title, the same degree designation, having the same curriculum emphasis, or purporting to meet exactly the same needs as the proposed program.)**

A few higher education institutions in Iowa offer programs somehow related to ISU's GDM. They are listed and briefly described below:

- Western Iowa Tech Community College (Sioux City): **Video Game Design** (Associate of Applied Sciences Degree). The program requires students to take 67 credits and is offered online. Students develop an understanding of video game development, 3D graphics and animation, creative process, team collaboration, level design, art, and graphic design, and careers in the video game industry. This program specifically concentrates on video games. In-state tuition and fees approximately: \$13,534.00 and Out-of-state tuition and fees approximately: \$13,936.00. Website: <https://www2.witcc.edu/programs/195/>
- Grand View University (Des Moines): **Game Design & Interactive Analytics Major** (Bachelor of Arts). The program requires students to take 41 credits plus 19-21 prerequisites. Students who major in this program will be able to: understand fundamental elements of design, play, and narrative, demonstrate logistical thinking, design and implement representational systems of data and/or information, and render and disseminate information in procedural and ludic representations. Yearly tuition as of 2023-2024 is \$32,800. As a private University, Grand View does not have an out-of-state tuition differential. Website: <https://www.grandview.edu/academics/undergraduate/game-design>
- Iowa Lakes Community College (Estherville): **Game Design and Development** (Associate of Applied Sciences Degree). This program requires students to take 72 credits during 5 terms. Students develop skills in computer hardware, networking and basic computer programming. They receive training in game programming, 3D modeling and animation, level design and game engines. Website: <https://iowalakes.edu/program/game-design-development-aas/>
- Marshalltown Community College: **Esports Program Management** (Bachelor of Arts). The Esports Management program is designed to prepare students for the emerging field of esports. Students learn the foundation of esports as a global industry. Website: [https://collegecatalog.iavalley.edu/preview\\_program.php?catoid=10&poid=1464&returnto=324](https://collegecatalog.iavalley.edu/preview_program.php?catoid=10&poid=1464&returnto=324)

The ISU GDM program team envisions possible collaborations with these institutions across Iowa. A Game Symposium, for example, may bring researchers, students and industry together to discuss current trends and exciting research questions. It could attract interesting keynote speakers presenting the most recent ideas, research, and implementations of games. Such a symposium could be combined with game design and implementation demonstrations, game jams, and playtesting of prototype games. It has the potential to bring the major players in the game industry across the state together and gain a national and international reputation as an inspiring symposium. Keynote and guest speakers can be carefully selected to bring the most novel and recent knowledge to Iowa. Industry partners may showcase and demonstrate their most recent innovations.

Students in different programs could organize a game jam together or play-testing sessions in which they playtest games they have designed and developed. Extracurricular clubs in game design, game play, and eSports could serve as another network for these exchanges. More formal sessions might draw interest from industry

professionals as a source of inspiration and creativity. Game development competitions could be organized among these institutions leading to a Student Game-Day bringing together student competitors, faculty educators, and industry professionals. ISU GDM could also lead the development of a statewide community of students, industry, and faculty from multiple institutions and have a multiplicative effect on the game industry in Iowa and beyond.

**5. If the same or similar program exists at another institution of higher education in Iowa (other than those Regent universities noted above), respond to the following questions:**

**a. Describe collaboration efforts with other institutions.**

ISU Senior Associate Dean for Academic Personnel Success and Strategic Initiatives Dr. Seda McKilligan contacted Western Iowa Tech Community College (Sioux City) (September 14), Iowa Lakes Community College (Estherville) (September 14), and Grand View (October 11).

**b. With what representatives of these programs has there been consultation in developing the program proposal? Provide a summary of the response of each institution consulted.**

The GDM leadership is having conversations with program leadership at other Iowa higher education institutions. This includes conversations with Dr. Frank Heffner, who is the Video Game Development Online Program Director at Western Iowa Tech Community College (WITCC). It also includes conversations with Kevin Grems, who is the creator, former director, and current instructor of the Game Design curriculum at Iowa Lakes Community College (ILCC). Dr. Heffner shared his experience creating online and hybrid programs for game design (WIT Gamedev 2023) and a “Mentor Lab” that connects students with industry professionals for personalized student support. He shared other strategies from their programs including a channel with the online video- and text-based messaging application Discord for students; a Metaversity collaboration with South Korean educators that will use a fully 3D online virtual campus; and his work integrating Mytopia Gameware Institute (MGI) he founded in 1978 with his educational activities. This work and the passion behind it serve as a great example to the ISU GDM team and a promise for rich collaboration. Dr. Heffner would be a great resource for the GDM students, and the program may find ways to invite him as a speaker.

**c. Has the possibility of an inter-institutional program or other cooperative effort been explored?**

Because WITCC and ILCC offer associate degrees in game design, the GDM leadership is invested in exploring the possibility of articulation agreements between our programs. These discussions will be more viable after ISU GDM’s curriculum has been established.

**d. Are the other programs similar to the proposed program at comparable quality and cost?**

No. The Iowa community colleges offer programs that focus on the skills necessary to create digital video games, with a focus on 3D first-person style gaming. This limited approach is understandable, as this represents a segment of gaming that is popular and can attract students. It requires teaching skills in animation, 3D modeling, and programming for game engines. ISU GDM also includes these aspects of gaming and creation. However, in contrast to the community colleges and due to the GDM being a richly collaborative and interdisciplinary degree, ISU will be able to provide an education in game design that is broader in scope. It will offer a more varied set of skills in arts, programming, and humanities as well as contextualize cultural, historical, business, and industry topics as they relate to local, state, national, and international communities. It will greatly benefit from the strengths of Iowa State as an R1, land-grant institution.

**6. If there are plans to offer the program off campus, online, or a blended modality, briefly describe these plans, including potential sites and possible methods of delivery instruction. Will off-campus delivery require additional HLC or other accreditor approval?**

The participating colleges, departments, and faculty already use a long-established mix of modalities for instruction. Because of this, the proposed GDM program intends to adopt their current modalities for its courses in the first few years. In addition, because of its interdisciplinary nature, the GDM degree will benefit from courses

that operate within a variety of modalities, such as capstones, lectures, online courses, options for study abroad, and internships. In-person instruction will be a vital component of the degree. A common campus space will be crucial for GDM students to come together and share a creative, collaborative, and cultural space. Having a place to call home for such a diverse set of students will be a priority for the program and presents opportunities for usage of existing collaborative spaces such as the Student Innovation Center, the Parks Library, campus labs, and other appropriate spaces.

However, online courses and collaborative digital methodologies also offer valuable teaching opportunities while providing students experience in online collaborative environments often used across the game design industry. New hires will be encouraged to offer their courses online and with this the GDM plans on creating a pathway for an online Game Design Certificate that can potentially be offered internationally and fully online. Such a certificate would greatly benefit from an online delivery because its audience would include on-campus students, alumni who wish to return and enhance their professional qualifications, and distance-learning professionals whose careers would benefit from a certificate. The ability of the GDM program to implement the most appropriate modality, including moving current courses to online delivery, depends greatly on budgetary constraints. As reported in the Hanover Research's Academic Program Assessment of the GDM, few game design programs offer in-person *and* online modalities. This presents an opportunity for GDM to differentiate itself and demonstrate exciting and flexible opportunities of education for new generations of learners and professionals.

#### **7. Will the proposed program apply for programmatic accreditation? When?**

ISU GDM will apply for programmatic accreditation in the beginning of the fifth year of the program. The National Association of Schools of Art and Design (NASAD 2023) provides accreditation for Game Design programs through its Creative Multidisciplinary Convergence and Technologies standards. Accreditation demonstrates to a variety of audiences that the program in question has undergone and passed a thorough review by a trusted third party. In pursuit of this goal, accreditation standards have been integrated into the initial proposal. A prerequisite for accreditation is that a program has graduated at least three students. The GDM's first graduates will finish the degree in four years, meaning that the accreditation process can begin in Year Five. During Years One through Four, the standards for accreditation will provide guidance as the major grows and develops. This process will ensure that the program is in a strong position to apply in the fifth year.

In addition to the overall accreditation provided by NASAD, the majority of the GDM curriculum is offered by degree programs and departments that undergo their own focused accreditation processes. The program team embraces this level of scrutiny as it supports the maintenance of rigor and integrity within the major. Furthermore, accreditation is episodic with regular reviews every 5 years. By committing to a rigorous program of review, the GDM reinforces its commitment to maintaining and surpassing academic and pedagogical standards. The accreditation certification will assure industry partners of the quality of the GDM curriculum, and the outstanding preparation provided to our graduates. Regular internal review and self-criticism supported by external evaluation will keep the GDM nimble and competitive.

Additionally, an **Industry Advisory Board** will be formed as soon as the program gets approved. There are many Iowa State University alumni who have participated in this proposal process and have provided valuable industry feedback with their hands-on understanding of what makes Iowa State University unique. The advisory committee will be composed of representatives from Iowa game industry companies, ISU alumni, and other industry leaders to help guide and advocate for the GDM and help with its accreditation process. It will help to ensure the GDM program remains relevant for students, Iowa's game industry, and national and international industry and workforce requirements.

#### **8. For undergraduate programs: Will articulation agreements be developed for the proposed program? With whom?**

The GDM Program Team is open to conversations with multiple Iowa community colleges to develop articulation agreements for efficient transfer programs. Ideally, these agreements will be designed to ensure majors graduate from Iowa State after four total years of college. The GDM leadership has already begun discussions with the

Esports program at Marshalltown Community College to create the template for efficient course transfers that will satisfy GDM requirements. Other possible partners include Des Moines Area Community College (DMACC); Western Iowa Tech Community College (Sioux City) which offers an Associate of Applied Sciences in Video Game Design; and Iowa Lakes Community College (Estherville).

**9. Describe any opportunities for experiential learning (e.g. internships, clinicals, research, community engagement/service learning).**

Experiential learning is a key component for the GDM. The program offers numerous opportunities for students to experiment, create and develop. Hands-on learning under the auspices of the GDM focuses on developing and testing games in academic, extension, and industry contexts. The program is designed in a way that enables experimentation in game design and implementation courses and by encouraging internships and study abroad programs. Hands-on learning in these contexts will attract students with an entrepreneurial mindset, cultivate a skillset for designing, implementing, and even publishing games beyond the classroom environment.

**Game Design and Analysis courses** include core courses that all students take, and which focus on game design, creation and development. They include courses such as Gameplay and Game Analysis, Game Design for Serious Games, Game Design Workshop, and Game Design Capstone. They all concentrate in bringing students together in interdisciplinary mixed teams to learn about the game design process and implement their knowledge in creating games that can be designed just for fun (entertaining games) or to solve real-world problems (serious games). The Game Design Capstone course is the final course in which students use all learned theoretical and practical knowledge and come together in a challenging mixed interdisciplinary team. Regardless of their focus areas, students work together in teams to develop market-relevant games that can be published. This course provides important experiential learning as student teams strive to create finished and playable games in interdisciplinary teams and in collaboration with industry partners, communities, and other identifiable partners for additional on-campus opportunities. Students gain invaluable, real-world experience and create games that can be presented in their portfolios and to their future employers.

At this stage of the program development, **internships** will be encouraged, but not required. The GDM leadership team already works closely with Iowa game industry partners to better understand the state of the industry and the demands of the workforce. This is the first stage of building a strong university-industry partnership that will ideally lead to future internship opportunities. Industry partners are very interested in having a local, eager, and skilled workforce open to working for them. There is a high value and a great potential of getting to know young talent before they enter the workforce. Through these internships, even though not yet formalized, students will benefit by experiencing real workplaces and getting to know potential employers. Potential employers will benefit from this experience as well, offering space to young talent, sparking ideas and excitement, and getting to know prospective employees. The GDM will also explore possibilities for industry-sponsored course work. Additionally, some of these internships may be offered to the students by ISU Extension. In the future, collaborations with game industry partners may lead to sponsored programs in innovation and entrepreneurship, as is done in other departments on campus.

**National or international field trips and study programs** are envisioned as an additional opportunity for GDM students. **Field trips** may be organized to visit major national educational institutions such as the Rochester Institute of Technology or the University of Utah for co-learning programs. Similar chances to explore the field and industry could include site visits with major game publishers of digital and analog games. It would be reasonable to integrate these with current course work. **Study Abroad** is envisioned as an opportunity to learn about international efforts on gaming and game development. Gaming, as it relates to history and culture, is a world-wide phenomenon and is best understood by experiencing those locations and cultures, e.g., gaming in Japan or Korea is unique in comparison to gaming in Europe. For this reason, the GDM Leadership Team would explore purpose-built Field Trip or Study Abroad courses for inclusion in the curriculum.

**10. From where will the financial resources to cover the costs for the proposed program come (list all that apply, e.g., department reallocation, college reallocation, grants, new to the university)?**

Funding to support this major will come from a variety of sources. Student tuition will cover most of the costs of running the GDM. This proposal projects a first-year cohort of 30 majors, of which 18 will be in-state and 12 out-of-state. The estimation for the growth of the program envisions 60 total majors in Year Two, 120 total majors in Year Three, 180 total majors in Year Four, and a Year Five total of 240 enrolled majors. These estimates are based on historical trends for new programs at ISU. In addition to enrolled majors, 20 non-majors are expected to enroll in the courses offered.

Additionally, the GDM leadership plans to apply for funds as a Degree of the Future to support three new hires to teach core GDM courses. The program team has already begun partnering with other campus resources to build a sustainable and cross-disciplinary infrastructure to support the major and its students. There are active discussions with the Parks Library to create a Game Collection and support the use of games in classrooms. A Game Collection is important because it will serve as a resource for students and faculty to play and study games at no personal cost. The conversations and potential collaboration between the GDM leadership and Parks Library will harness the latter's expertise in collecting, managing, and borrowing research and teaching media.

**11. Include any additional information that justifies the development of this program.**

The inspiration behind this major is the certainty that a robust and innovative major in Game Design at Iowa State University directly serves the interests of the students, the faculty, the university, and the state of Iowa. The aim is to take this first, significant step towards establishing an environment serving undergraduate excellence by integrating student-centered instruction with successful, long-term research and outreach programs. At our university and in our state the early signs are clear that the GDM team can become part of a hub for the future of game research and implementation. Establishing this program will stimulate novel ideas, ask fundamental research questions, and create teams that will greatly contribute to game design and development research.

The GDM at Iowa State University has the ambition to greatly influence the local game industry and contribute to its expansion and further development. A consortium of educational and corporate stakeholders has already been developing Iowa's EdTech sector. Meanwhile at Iowa State University, the Virtual Reality Application Center (VRAC) and the PIRI project Game2Work are building networks of interested scholars and related research programs. These emerging programs and the GDM are all directed towards capitalizing on the concrete potential of games to enrich, educate, and entertain. The potential and influence of games for Iowa's local and global communities 'professional, social, and cultural futures will only grow.

As mentioned earlier in this proposal, a report from Juniper Research (2023) reveals that the video game industry's value will exceed \$200 billion in 2023. This is nearly a third larger than its \$155 billion worth in 2020. This value is built on increasingly diverse markets and consumers of digital and analog games. Arguably, games today have a greater impact on young people's social views than any other form of popular media. They are increasingly considered as works of art on par with literature, cinema, and music. For example, the German government has moved towards preserving analog games in the German National Library, an act similar to adding them to the Library of Congress's permanent collection. Most games today combine entertainment, creativity, and serious issues revolving around ethical dilemmas, social problems, or experiential learning. Through the emerging emphasis on "gamification," the education and industrial sectors have been integrating "serious games" to encourage learning and productive behaviors. For these reasons, games and the culture of gaming are worthy of serious inquiry and investment.

The student demand is already present at Iowa State University, as is faculty interest in teaching and researching games. For example, Iowa State University's PIRI Game2Work project has been hosting events and supporting the development of games that have educational and professional purposes. The multiple uses and social contexts of games in modern society create a pressing need for future game designers who have a well-rounded skillset to make successful games with a consciousness of their social and educational impact. The GDM will leverage its cross-college curriculum, industry partnerships, and experiential learning to prepare graduates for the future of

games and game design. With its history in technological innovation, entrepreneurship, and investment in interdisciplinary collaboration, Iowa State University is a prime institution to foster a first-class Game Design Major that can draw students, faculty, and industry partners from Iowa and across the world.

Iowa State University's undergraduate students have already made it known that they are interested in this major. Students are passionate about and seek careers in developing digital and analog games. Indeed, the development for this proposal has been prompted by students seeking out a coherent plan of study in game design only to find none. Instead, they have accessed pieces of such a program here and there: classes on animation, the politics of games, games and mythic stories, serious games, computer programming, and so on. Even now, many are developing their own games and showcasing them in classes across campus. In creating the GDM, Iowa State University will channel existing interest and energy into an actual plan of study useful for students' career ambitions. By emphasizing the hands-on learning experience of producing real, playable games, this major will attract new, eager, and entrepreneurial students who want to make their mark in the competitive game industry. The innovative curriculum, with its three areas and its interdisciplinary range, will create graduates who have the knowledge and skills to market themselves and thrive in today's growing game industry as well as in adjacent industries in software development, graphic design, web and digital interface design, and special effects artistry.

The Game Design Major aims to become a hub that connects diverse communities and institutions, thus living up to Iowa State University's land grant mission and support for entrepreneurship. The GDM curriculum brings together faculty from across colleges. The interdepartmental and inter-college leadership team have used the strength of the university to foster connections with industry partners, especially game design companies in Des Moines and across the Midwest. These relationships will lead to internships and industry-sponsored coursework. From these experiences, students will access real pre-professional opportunities and take on the challenges of developing games in rigorous, team-based environments. Students will also have the chance to serve the public by working with faculty and partners to develop "serious games" that are not just enjoyable, but also useful as tools for education or workforce training. By establishing itself at the center of these diverse communities and institutions, the Game Design Major will benefit all stakeholders — the students, the university, the local community, and Iowa's economy.

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## Appendix A. Detailed Curriculum

The following curriculum is tentative and subject to change pending course approvals, instructor availability, and student needs. The names of initially responsible faculty for new courses have been included for reference.

### Proposed New Courses for Major

**GAME 210 - Game Career Development** (Rotating Instructors, 2 credits). Introduces students to career opportunities for the GDM. Includes opportunities to meet with industry partners and information on publishing games, writing job applications, assembling portfolios, and trends in the game industry.

**GAME 202 - Game Design for Serious Games** (Alenka Poplin, 3 credits). Learning about games, types of games, formal and dramatic elements of games with the goal to design, develop and playtest a prototype of a serious game. Includes working in interdisciplinary mixed game design teams.

**GAME/COM S 200X – Programming for Game Engines** (New Hire, 3 credits). Methods, concepts, and problems of developing games using game engines. Includes coding, troubleshooting, and rapid prototyping in popular game engines like Unity and programming languages C++ and C#.

**GAME/HIST 200X - Game Design and History** (Jeremy Best, 3 credits). Historically informed examination of the content, themes, gameplay, representation, and cultural impact of analog and digital games. History of game development and contextualized analyses of game design and gaming culture.

**GAME/RELIG 200X - Game Design and Cultures** (Jeffrey Wheatley, 3 credits). Draws on Religious Studies and Cultural Studies to examine world-building, storytelling, and mechanics in analog and digital games. Considers the role of myths, archetypes, rituals, devotion, magic, and sacred beings in games and gaming culture.

**GAME 211 - Gameplay and Game Analysis** (Rotating Instructors). Skills and knowledge for studying games. Includes examination of game mechanics, user experience, content, and social impact. Playtesting and learning from the existing games

**GAME 301 - Game Design Workshop** (New Hire, 3 credits). Integration of skills and methods of game design. Intermediate, project-based, collaborative game design course. Prototyping, iteration of game design concepts. Collaborative, teams-based instruction.

**GAME/ENGL 300X - Writing for Games** (ENGL Faculty, 3 credits). Tenets and craft of writing for table-top and video games. Strategies for building bold worlds, crafting engaging stories and scenarios, and enabling player agency and safety. Includes analysis of existing games and a culminating game writing project.

**GAME/RELIG 300X - Heroes, Myths, and Games** (Jeffrey Wheatley, 3 credits). Examines how modern games draw on real-world cultures and myths to create compelling and educational game worlds and gameplay. Students will develop a game concept based on a real-world culture or myth. The game concept will combine humanities academic research and creativity.

**GAME 401 – Game Design Capstone** (Co-Taught with New Hire, 6 credits). Develop a game utilizing the full iterative game development process: concept, prototype, play-test, evaluate, revise. Includes market analysis, start-up potentiality, and research on game industry competition. Collaborative, teams-based instruction.

**GAME/ARTGR 484 - Analog Game Design and Fabrication** (Anson Call, 3 credits prereq: *undergraduate: Junior or senior standing in the graphic design program. Graduate: Graduate enrollment in College of Design*). Examines the



Graphical and physical nature of analog games including the graphic design, 2D illustration, print and materials, and 3D game representations. Emphasis on acquiring the fabrication skills necessary to create analog game elements as well as creating new games from scratch.

#### Other Required Core Courses

**ARTIS 212 - Studio Fundamentals: Digital Media** (ARTIS Faculty, 3 credits). Introduction to digital media tools and concepts and digital fabrication processes to create two dimensional, three dimensional, and time-based artworks. Students will be introduced to major digital art and design software packages.

**COM S 127 - Introduction into Programming** (COM S Faculty, 3 credits, pre-req: Math 140 or higher). Prereq: Credit or concurrent enrollment in MATH 140 or higher Introduction to computer programming with an emphasis on problem-solving. Topics include program structures, expressions, variables, decision and logic, iteration, collections, input, and output. Program construction and testing. Programming assignments including games and applications. No prior programming experience necessary.

**DSN S 131 - Drawing I** (DSN Faculty, 4 credits). An introduction to methods of visual thinking and drawing through studio experiences and lectures. All design fields utilize visual communication and drawing. Focus on the use of drawing as a method for creative problem solving, design development and visual communication. Explore, from observation and imagination, the use of fast sketching and in-depth drawing, using various scales, mediums and processes.

**POL S 308X - Video Games and Politics** (Jonathan Hassid, 3 credits). Interactions between video games and politics from the perspective of both state and society. History and regulation of video games; games' connection with war and with authoritarian regimes; representation, race, and gender in games and game communities; games' influence on social and political attitudes.

#### Proposed New Hires to Meet Course Needs:

- **Tenure-track faculty on the intersection between computer science and game design** to ensure a designated expert in game-design related applications, game engines and required programming languages (LAS/Computer Science).
- **Tenure-track faculty in digital design and/or design-related fabrication methodologies** to ensure faculty expertise in the intersection of digital design methodologies and analog/digital game design. This hire will teach specific game design courses including Game Design Workshop and the Core Capstone course (COD/Art and Visual Culture or Community and Regional Planning).
- Year Three hire will be targeted to address specific needs indicated by close study of Year One and Two, thus the following description is intended to represent an anticipated need that may be subject to revision: **Tenure-track faculty in narrative design methods and product development** to ensure support for courses in game design professionalization, prototyping, iteration, and production. This hire would teach courses related to their specialization and support teaching of the core courses including Game Design Workshop and the Core Capstone (Department TBD).

### Rationale for orienting curricular design around three focus areas

- Conforms to three primary career paths within game design industry as described by industry professionals
- Matches major academic and disciplinary approaches to game design and game studies
- Increases students' future employability and career success by providing them with industry-relevant skills and abilities that reflect the diversity of opportunities in game design
- Ensures course availability in complementary focus areas for student specialization (e.g., guarantees students in Game Worlds, Narrative Design, and Society will have robust variety of courses in Art and Interactive Media Design and Game Computing and for students in the other two, respectively)
- Integrates flexibility to the degree that empowers students to shape their college path to suit their personal and professional interests
- Recognizes differences in pedagogical approaches across disciplines while matching curricular areas to overall program goals
- Equalizes demands on university resources while maintaining equitable student expectations
- Communicates program commitment to innovation and interdisciplinary collaboration

## Distribution of Credit Hours and Courses in the Game Design Major

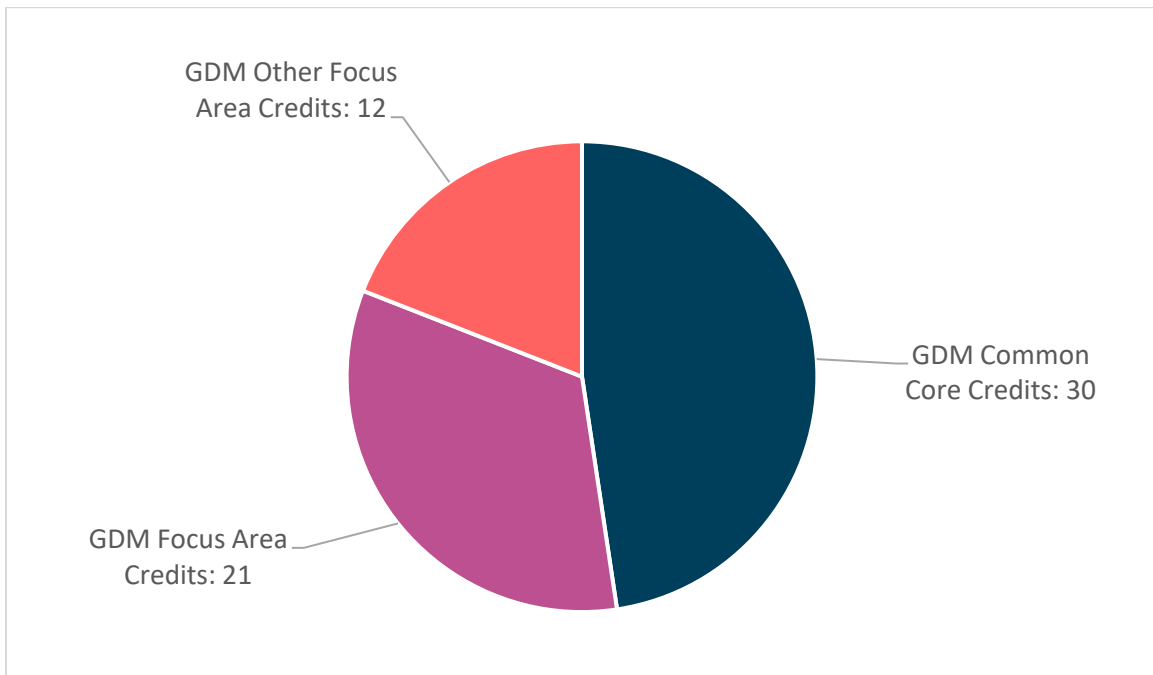
### Types of GDM Courses

GDM courses have three types: GDM Common Core Courses, GDM Focus Area Courses, and GDM Courses from Other Focus Areas. The latter is a distinct type because students, once they have chosen a focus area, are required to take courses from the other Focus Areas. The table below shows the three types and their corresponding colors.

	= GDM Common Core Course
	= GDM Focus Area Course
	= GDM Course from Other Focus Areas

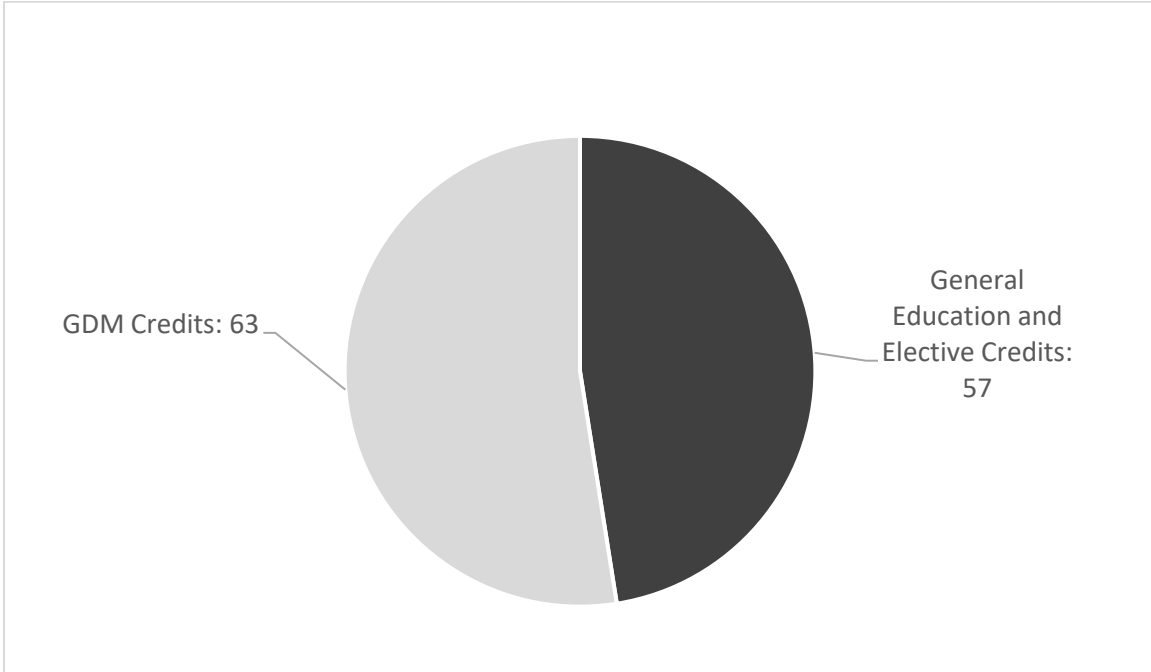
### Distribution of GDM Credits

This pie chart breaks down the distribution of credit hours within the Game Design Major. Note that the Game Computing focus area is slightly different with only 6 required credits from other focus areas.



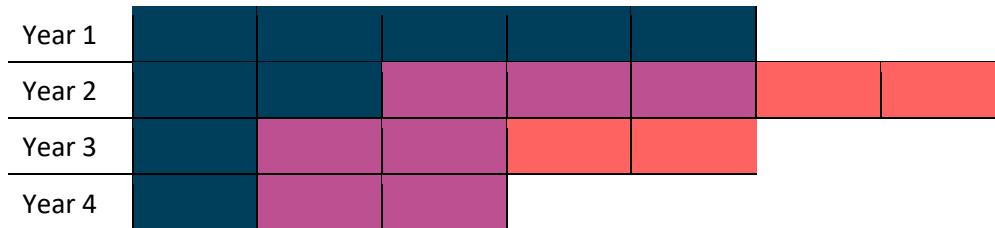
GDM Credits Among Total Credits for Bachelor’s Degree

The GDM requires 63 credits. Iowa State University requires students to have a total of 120 credits to receive a bachelor’s degree. This means that there are 57 credits that students will take beyond the GDM to fulfill general education requirements or electives. This also leaves room for students to add minors, certificates, or second majors.



Distribution of GDM Course Types Per Year

This chart shows the distribution of GDM courses per year according to the ideal 4-year plan that we go into deeper detail below. It does not include general education and elective courses. Note, a Game Computing student would exchange one GDM Other Focus Area course for an additional GDM Focus Area course.



## Summary of Four-Year Plan

The 4-year plan is a suggested path of study, and not all students will take courses in the order presented. It does not list electives and general education courses that students will be taking. Under this plan, students pick their focus area going into Year 2. Total required Game Design Major Credits: 63.

	Art and Interactive Media Design	Game Computing	Game Worlds, Narrative Design, and Society
<b>Year 1</b>	GDM Common Core Courses (16 credits)		
<b>Year 2</b> (Students Select Focus Area)	GDM Common Core Courses (5 credits)		
	Focus Area Courses (9 credits) + Courses from Other Focus Areas (6 credits)	Focus Area Courses (9 credits) + Courses from Other Focus Areas (3 credits)	Focus Area Courses (9 credits) + Courses from Other Focus Areas (6 credits)
<b>Year 3</b>	GDM Common Core Courses (3 credits)		
	Focus Area Courses (6 credits) + Courses from Other Focus Areas (6 credits)	Focus Area Courses (9 credits) + Courses from Other Focus Areas (3 credits)	Focus Area Courses (6 credits) + Courses from Other Focus Areas (6 credits)
<b>Year 4</b>	GDM Common Core Courses (6 credits)		
	Focus Area Courses (6 credits)	Focus Area Courses (6 credits)	Focus Area Courses (6 credits)

## Detailed Four-Year Plan

The 4-year plan is a suggested, ideal path of study, and not all students will take courses in the order presented. It does not list electives and general education courses that students will be taking. Under this plan, students pick their focus area going into Year 2. Students must have at least 63 credits from the Game Design Master List to complete the major.

*Note: For simplicity, pre-requisites have been left out of the plan. As the curriculum evolves it will be part of the work of the leadership team to work with departments and faculty to ensure students can be successful in the program.*

<b>Year 1</b> 16 Credits
<b>Common Core Required Courses</b>
COM S 127 – Introduction to Programming DSN S 131 – Drawing I ARTIS 212 – Studio Fundamentals: Digital Media CRP457 – Geogames for Civic Engagement till GAME 202 – Game Design for Serious Games gets approved
Choose (one) of the following (till GAME 202, GAME/HIST 200X, and GAME/RELIG 200X get approved): <ul style="list-style-type: none"><li>- HIST 201 or 202 – History of Western Civilization I or II (only one of these)</li><li>- GAME/HIST 200X – Game Design and History</li><li>- GAME/RELIG 200X – Game Design and Cultures</li></ul>

Year 2 20 Credits		
Common Core Required Courses		
GAME 210 - Game Career Development (Rotating Instructors, 2 credits) GAME 211 - Gameplay and Game Analysis (Rotating Instructors, 3 credits)		
Focus areas		
Art and Interactive Media Design	Game Computing	Game Worlds, Narrative Design, and Society
<p><u>Required:</u> ARTIS 230 - Drawing II</p> <p><u>Choose two:</u> ARTIS 308 – Computer Modeling, Rendering and Virtual Photography ARTIS 406x - Introduction to 3D Organic Modeling in ZBrush ARTIS 407 - Principles of Character Animation</p> <p><u>Choose two courses, one from each other focus area (see Master List)</u></p>	<p><u>Required:</u> GAME/COM S 2xx – Programming for Game Engines COM S 227 - Object Oriented Programming COM S 228 - Introduction to Data Structures COM S 230 - Discrete Computational Structures</p> <p><u>Choose one course from one other focus area (see Master List)</u></p>	<p><u>Choose One (Game Worlds):</u> ANTHR 230 - Globalization and the Human Condition HIST 284 - Wonders of the World, Global Innovation POL S 125 - Democracy and Dictatorship RELIG 205/WLC 205 - World Religions <b>C R P 201: The North American Metropolis</b></p> <p><u>Choose One (Narrative Design):</u> CL ST 273 - Greek and Roman Mythology ENGL 275 - Analysis of Popular Cultural Texts GAME/RELIG 300X - Heroes, Myths, and Games PHIL 363 - Metaphysics in Science Fiction and Popular Culture</p> <p><u>Choose One (Society):</u> ART H 280/281 - History of Art I/II HIST 271 - History of Sports in U.S. RELIG 215 - Religion and Popular Culture PHIL 230 – Moral Theory and Practice <b>C R P 291: World Cities and Globalization</b></p> <p><u>Choose two courses, one from each other focus area (see Master List)</u></p>

<b>Year 3</b>		
15 Credits		
<b>Common Core Required Courses</b>		
Game 301 - Game Design Workshop (3 credits)		
<b>Focus areas</b>		
<b>Art and Interactive Media Design</b>	<b>Game Computing</b>	<b>Game Worlds, Narrative Design, and Society</b>
<p style="text-align: center;"><u>Choose Two:</u></p> <p>ARTIS 323 - Scientific Illustration Principles and Techniques            ARTIS 326 - Illustration and Illustration Software            ARTIS 327 - Illustration as Communication            ARTIS 408 - Principles of 3D Animation            ARTGR 484 2 - 3D Modeling and Augmented Reality</p> <p style="text-align: center;"><u>Choose Two courses from the Game Design Master List of courses</u></p>	<p style="text-align: center;"><u>Required:</u></p> <p>COM S 311 - Introduction to the Design and Analysis of Algorithms            COM S 327 - Advanced Programming Techniques            COM S 336 - Introduction to Computer Graphics</p> <p style="text-align: center;"><u>Choose One course from the Game Design Master List of courses</u></p>	<p style="text-align: center;"><u>Required:</u></p> <p>GAME/ENGL 300X – Writing for Games (Approved alternatives: ENGL 304 or 315; ENGL/THRE 316)</p> <p style="text-align: center;"><u>Choose One:</u></p> <p>AM IN 322 - Peoples and Cultures of Native North America            ART H 395 - Art and Theory Since 1945            CRP 320 – Urban Geography            ENGL 315 - Creative Writing: Screenplays ENGL 330 - Science Fiction HIST 304 - Cultural Heritage of the Ancient World            HIST 364 - The Mythic Wild West            PHIL 364 - Metaphysics: God, Minds, and Matter            POL S 308X - Video Games and Politics            POL S 334/SOC 334 - Politics and Society</p> <p style="text-align: center;"><u>Choose Two courses from the Game Design Master List of courses</u></p>



Year 4 12 Credits		
Common Core Required Courses		
Game 401 - Core Capstone (6 credits)		
Focus Areas		
Art and Interactive Media Design	Game Computing	Game Worlds, Narrative Design, and Society
<p><u>Choose 2 upper-division courses from your focus area (see Game Design Master List)</u></p> <p><u>Recommended:</u>            ARTIS 431 - Character and Scene Design            ARTIS 432 - Sequential Narrative Drawing            ARTGR 463 - 3D Motion Graphics            ARTIS 470x - Data Coding and Form            ARTIS 473 - Video Art            ARTIS 475 - Interactive Art            GAME/ARTGR 4XX - Analog Game Design and Fabrication</p>	<p><u>Required:</u>            COM S 437 - Computer Game and Media Programming</p> <p><u>Choose 1 upper-division course from your focus area (see Game Design Master List)</u></p> <p><u>Recommended:</u>            COM S 336 - Computer Graphics            CYB E 231 - Cyber Security Concepts and Tools (qualifies as UD)            CRP 301: Urban Analytical Methods            CRP 456: GIS Programming and Automation            EDUC 302 - Principles and Practices of Learning with Technology            S E 309 - Software Development Practices            S E 317 - Introduction to Software Testing            S E 319 - Construction of User Interfaces            S E 339 - Software Architecture and Design            S E 421 - Software Analysis and Verification for Safety and Security</p>	<p><u>Choose 2 upper-division courses from your focus area (see Game Design Master List)</u></p> <p><u>Recommended:</u>            AF AM 330/SOC 330 - Ethnic and Race Relations ENGL 302 - Business Communication            ENGL 304 - Creative Writing: Fiction            ENGL 313 - Rhetorical Web Design            ENGL/THE 316 – Creative Writing: Playwriting            ART H 494/WGS 494 - Women and Gender in Art            HIST 488 - American Stuff, Colonial Times to the Present            PHIL 343 – Philosophy of Technology            PSYCH 386 - Media Psychology            WGS 430 - Gender and Consumer Culture</p>

## Master List of Game Design Major Classes

This master list contains every course required or recommended by the Game Design Major based on the 4-year plan above. It provides another way to visually organize the major's courses. Courses in this list are organized by focus area and, secondarily, by lower division (100- and 200-level courses) and upper division (300- and 400-level courses). Generally, lower division courses serve as introductions to or surveys of a topic, method, or discipline. In contrast, upper division courses provide greater depth and emphasize the application of skills and knowledge to produce new knowledge, art, or projects. This list will serve students who are required to take a number of courses outside of their focus area. Students will be able to petition to have other courses count and the Program Team will regularly update this list as new courses are developed and evaluated for their relevance to the Game Design Major.

### Common Core Courses

#### Lower Division

ARTIS 212 - Studio Fundamentals: Digital Media  
COM S 127 - Introduction to Programming for Problem Solving  
DSN S 131 - Drawing I  
GAME/COMS 200X - Programming for Game Engines  
GAME/HIST 200X - Game Design and History  
GAME/RELIG 200X - Game Design and Cultures  
GAME/CRP 202 - Game Design for Serious Games  
GAME 210 - Game Career Development  
GAME 211 - Gameplay and Game Analysis

#### Upper Division

GAME 301 - Game Design Workshop  
GAME 401 - Core Capstone

### Art and Interactive Media Design

#### Lower Division

ARTIS 230 - Drawing II

#### Upper Division

ARTIS 308 - Computer Modeling, Rendering and Virtual Photography  
ARTIS 323 - Scientific Illustration Principles and Techniques  
ARTIS 326 - Illustration and Illustration Software  
ARTIS 327 - Illustration as Communication  
ARTIS 406X - Introduction to 3D Organic Modeling in ZBrush  
ARTIS 407 - Principles of Character Animation  
ARTIS 408 - Principles of 3D Animation  
ARTIS 431 - Character and Scene Design  
ARTIS 432 - Sequential Narrative Drawing  
ARTIS 470X - Data Coding and Form  
ARTIS 473 - Video Art  
ARTIS 475 - Interactive Art  
ARTGR 484 2 - 3D Modeling and Augmented Reality  
ARTGR 463 - 3D Motion Graphics  
GAME/ARTGR 4XX- Analog Game Design and Fabrication

## Game Computing

### Lower Division

COM S 227 - Object Oriented Programming  
COM S 228 - Introduction to Data Structures  
COM S 230 - Discrete Computational Structures  
**LA 211 - Digital Design Methods for Landscape Architecture**  
**C R P 251 - Fundamentals of Geographic Information Systems**

### Upper Division

COM S 311 - Introduction to the Design and Analysis of Algorithms  
COM S 327 - Advanced Programming Techniques  
COM S 336 - Computer Graphics  
CRP 351 - Intermediate GIS  
COM S 437 - Computer Game and Media Programming  
**C R P 301 - Urban Analytical Methods**  
**C R P 456 - GIS Programming and Automation**  
**CRP 449 - Geodesign: Planning for Sustainable Futures**  
CYB E 231 - Cyber Security Concepts and Tools (qualifies as UD)  
EDUC 302 - Principles and Practices of Learning with Technology  
S E 309 - Software Development Practices  
S E 317 - Introduction to Software Testing  
S E 319 - Construction of User Interfaces  
S E 339 - Software Architecture and Design  
S E 421 - Software Analysis and Verification for Safety and Security

## Game Worlds, Narrative Design, and Society

### Lower Division

ANTHR 230 - Globalization and the Human Condition  
ART H 280/281 - History of Art I/II  
CL ST 273 - Greek and Roman Mythology  
**C R P 201 - The North American Metropolis**  
**C R P 291 - World Cities and Globalization**  
ENGL 275 - Analysis of Popular Cultural Texts  
ENGL 302 - Business Communication  
ENGL 313 - Rhetorical Web Design  
ENGL 314 - Technical Communication  
HIST 271 - History of Sports in U.S.  
PHIL 230 - Moral Theory and Practice  
POL S 125 - Democracy and Dictatorship: Introduction to Comparative Politics  
RELIG 205/WLC 205 - World Religions  
RELIG 215 - Religion and Popular Culture  
HIST 284 - Wonders of the World, Global Innovation

### Upper Division

AF AM 330/SOC 330 - Ethnic and Race Relations  
AM IN 322 - Peoples and Cultures of Native North America  
ART H 395 - Art and Theory Since 1945  
ART H 494/WGS 494 - Women and Gender in Art  
**CRP 320 - Urban Geography**

**CRP 455 - Smart and Sustainable Cities**

ENGL/GAME 3xx - Writing for Games

ENGL 304 - Creative Writing: Fiction

ENGL 315 - Creative Writing: Screenplays

ENGL 330 - Science Fiction

ENGL 411 - Technology, Rhetoric, and Professional Communication

GAME/RELIG 300X - Heroes, Myths, and Games

HIST 304 - Cultural Heritage of the Ancient World

HIST 364 - The Mythic Wild West

HIST 488 - American Stuff, Colonial Times to the Present

PHIL 343 - Philosophy of Technology

PHIL 363 - Metaphysics in Science Fiction and Popular Culture

PHIL 364 - Metaphysics: God, Minds, and Matter

POL S 308X - Video Games and Politics

POL S 334/SOC 334 - Politics and Society

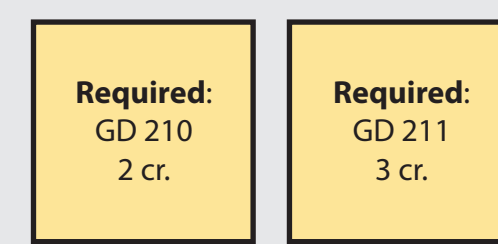
PSYCH 386 - Media Psychology

WGS 430 - Gender and Consumer Culture

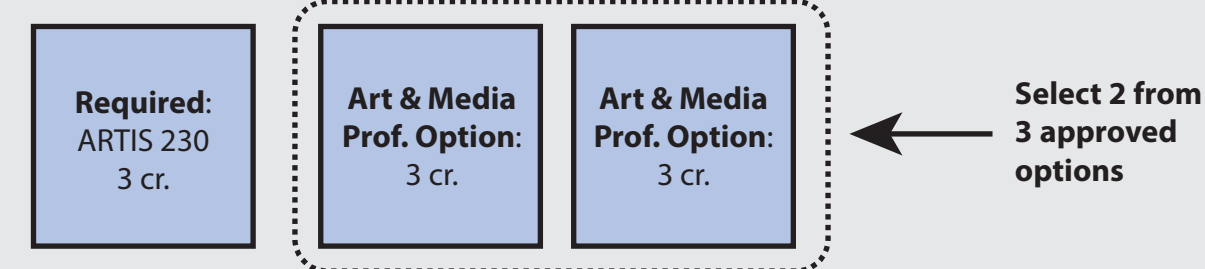
## TRACK ONE, ART & INTERACTIVE MEDIA DESIGN

### YEAR TWO

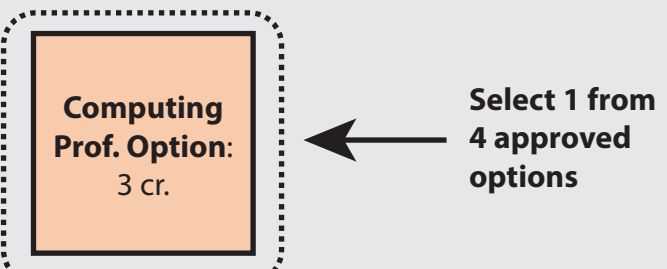
GAME DESIGN, 5 CR.



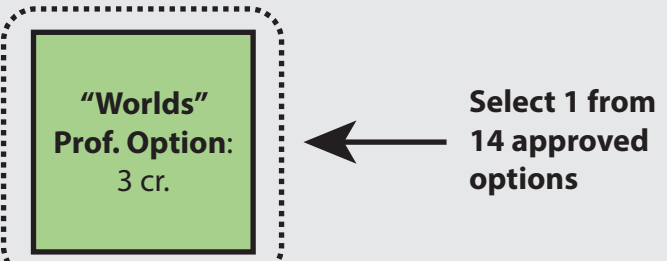
ART & MEDIA, 9 CR.



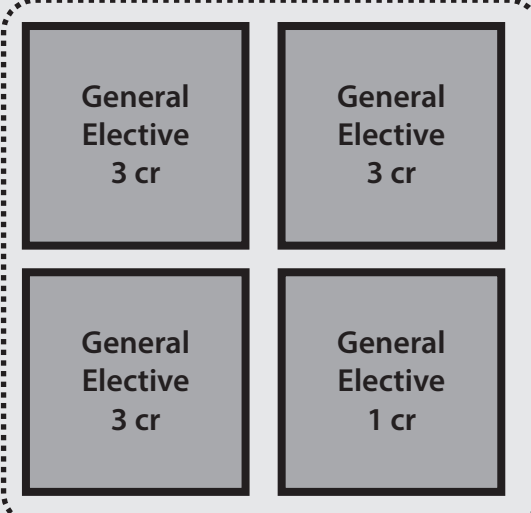
GAME COMPUTING, 3 CR.



WORLDS, NARRATIVE, SOCIETY, 3 CR.



GENERAL ELECTIVES, 10 CR.

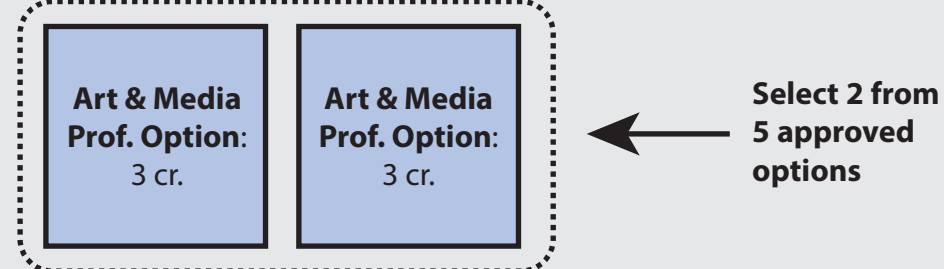


### YEAR THREE

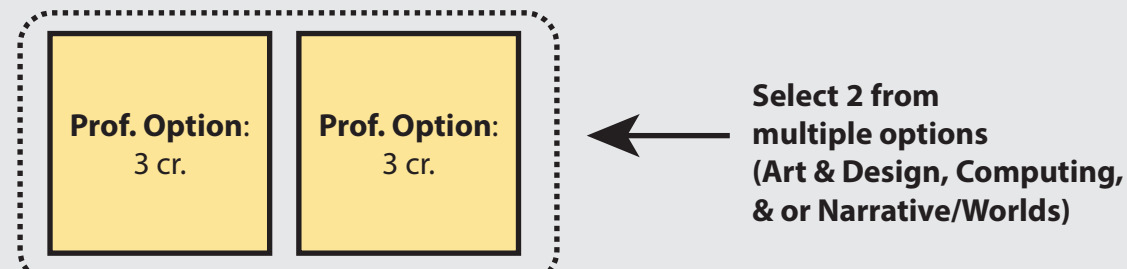
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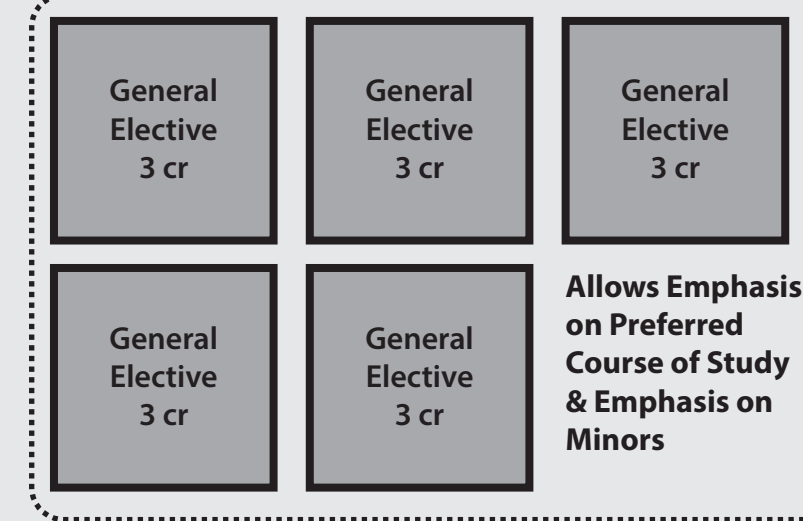
ART & MEDIA, 6 CR.



GAME DESIGN MASTER LIST, 6 CR.



GENERAL ELECTIVES, 15 CR.

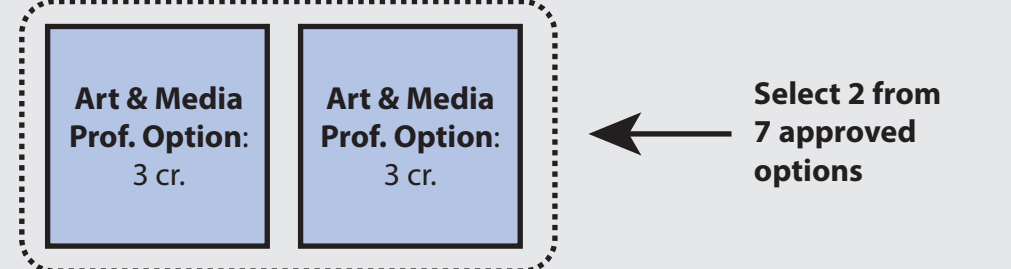


### YEAR FOUR

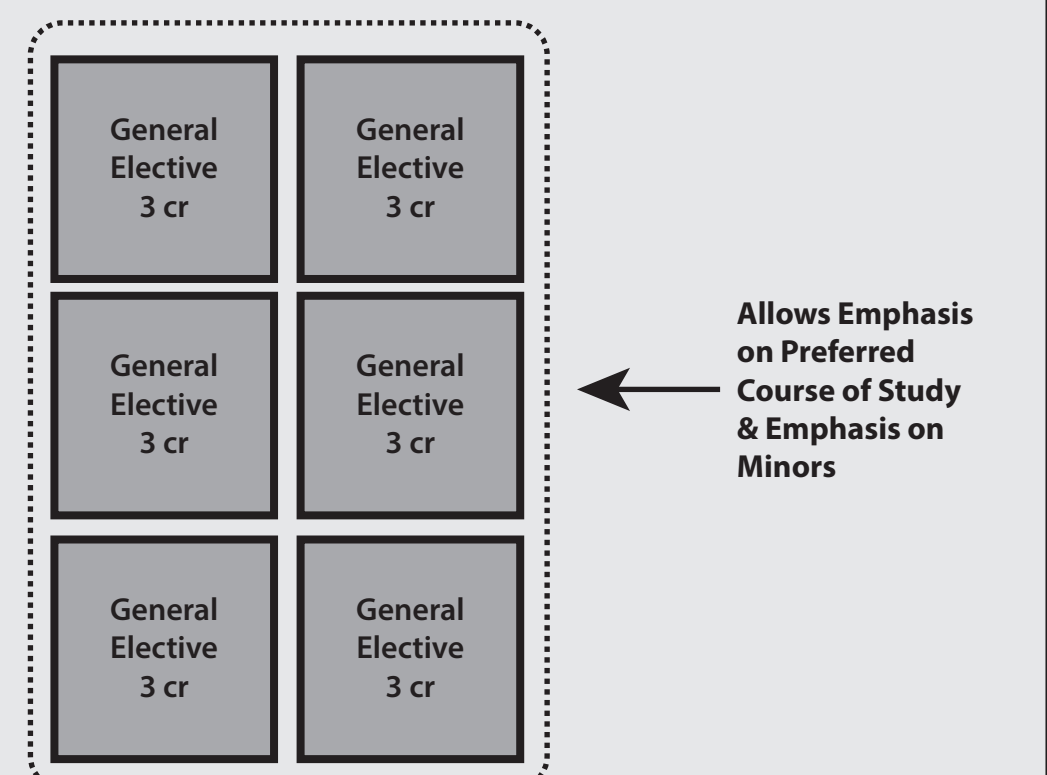
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ART & MEDIA, 6 CR.



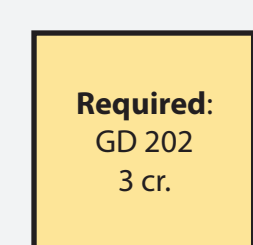
GENERAL ELECTIVES, 18 CR.



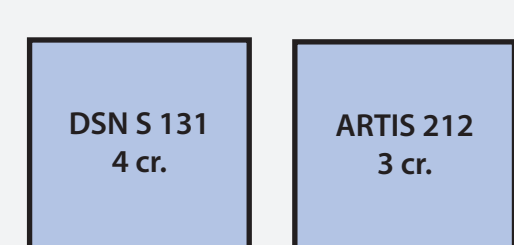
## ALL TRACKS

### YEAR ONE

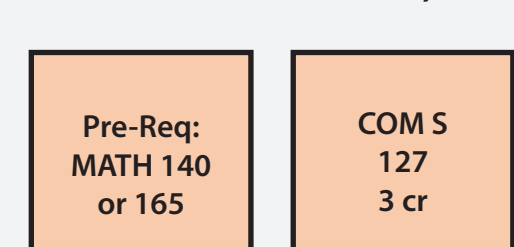
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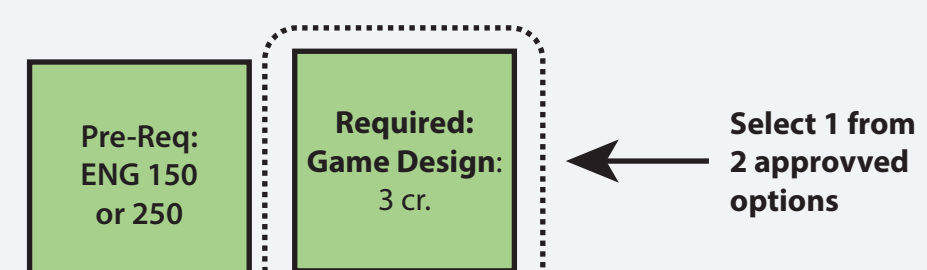
ART & MEDIA, 7 CR.



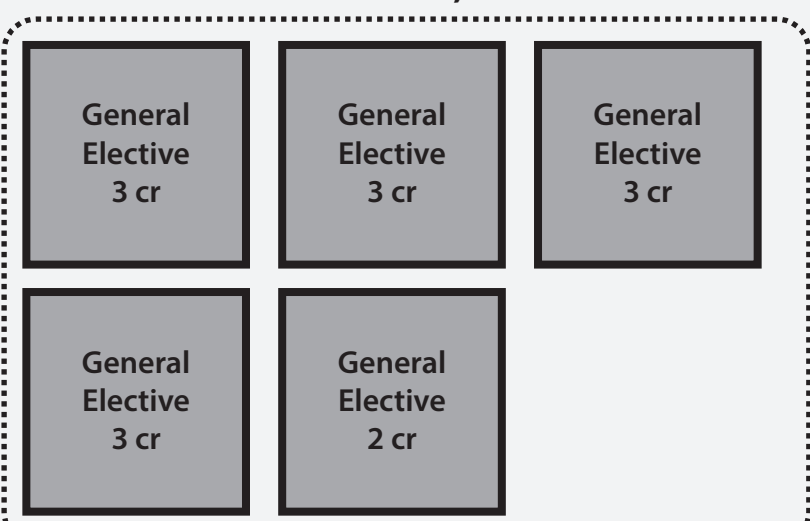
GAME COMPUTING, 3 CR.



WORLDS, NARRATIVE, SOCIETY, 3 CR.



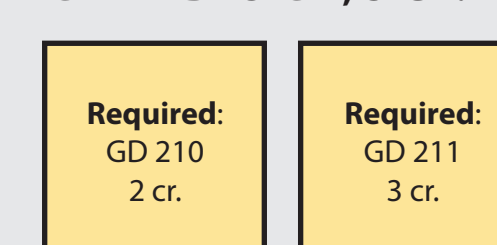
GENERAL ELECTIVES, 14 CR.



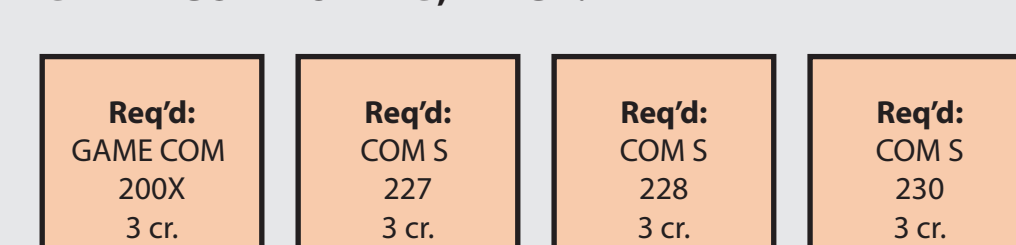
## TRACK TWO, GAME COMPUTING

### YEAR TWO

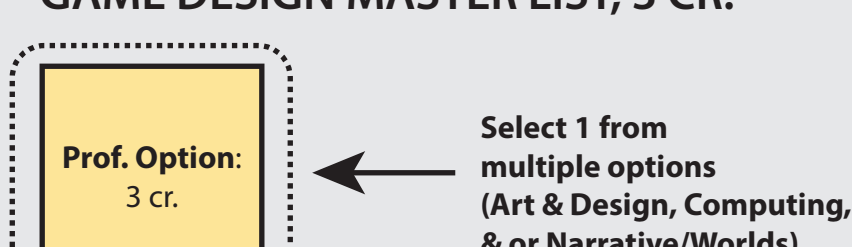
GAME DESIGN, 5 CR.



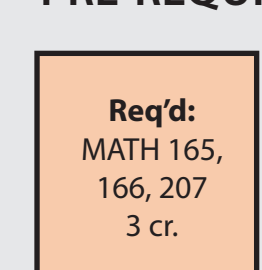
GAME COMPUTING, 12 CR.



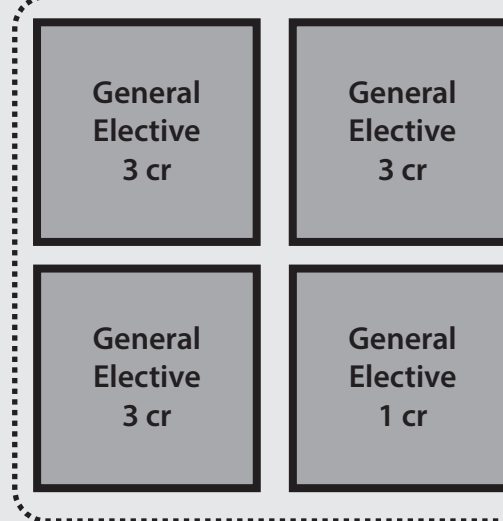
GAME DESIGN MASTER LIST, 3 CR.



PRE-REQUISITES, TBD

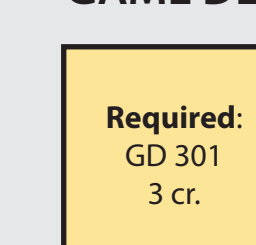


GENERAL ELECTIVES, 10 CR.

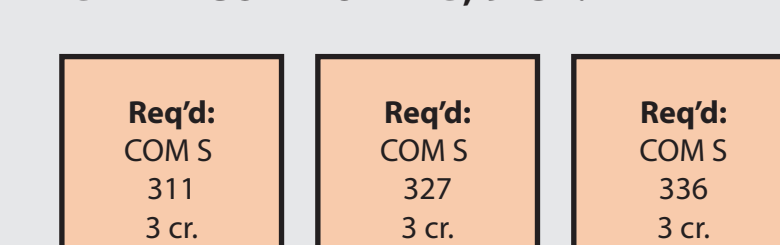


### YEAR THREE

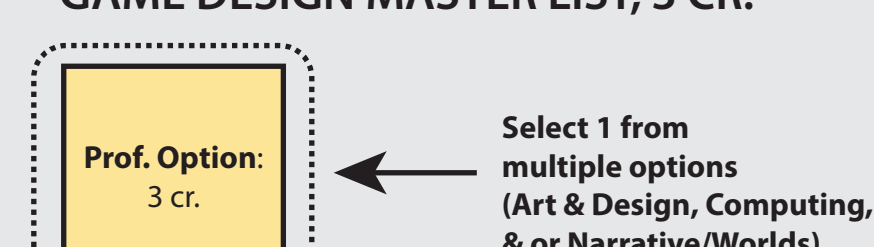
GAME DESIGN, 3 CR.



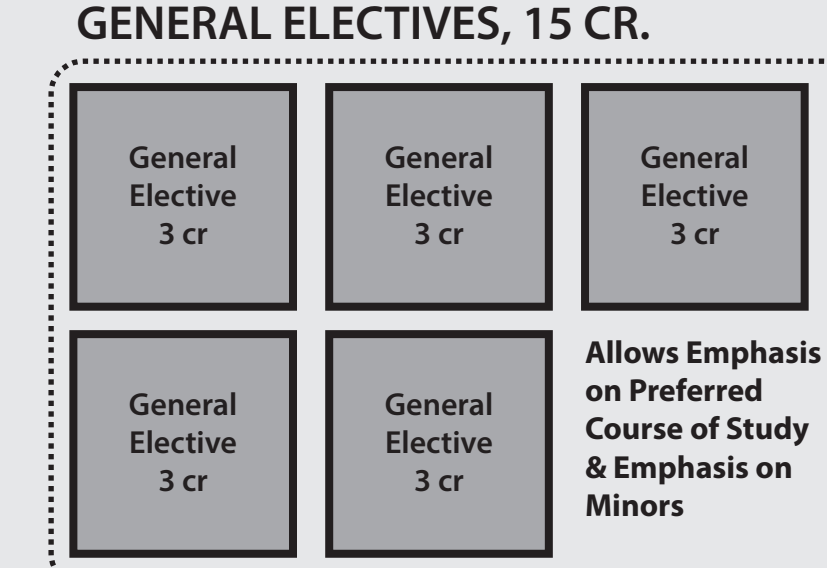
GAME COMPUTING, 9 CR.



GAME DESIGN MASTER LIST, 3 CR.

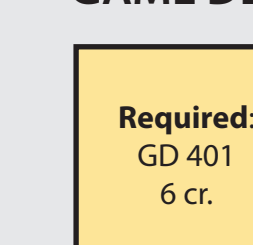


GENERAL ELECTIVES, 15 CR.

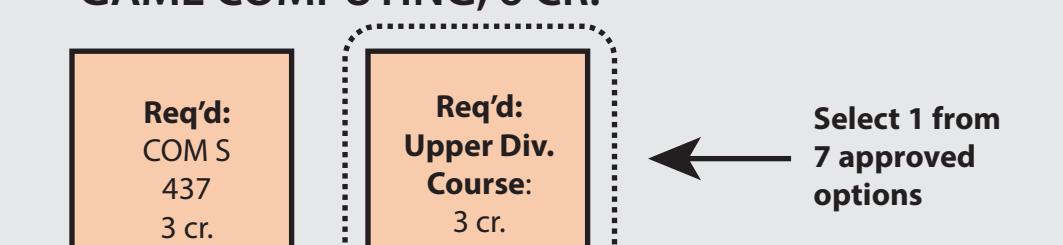


### YEAR FOUR

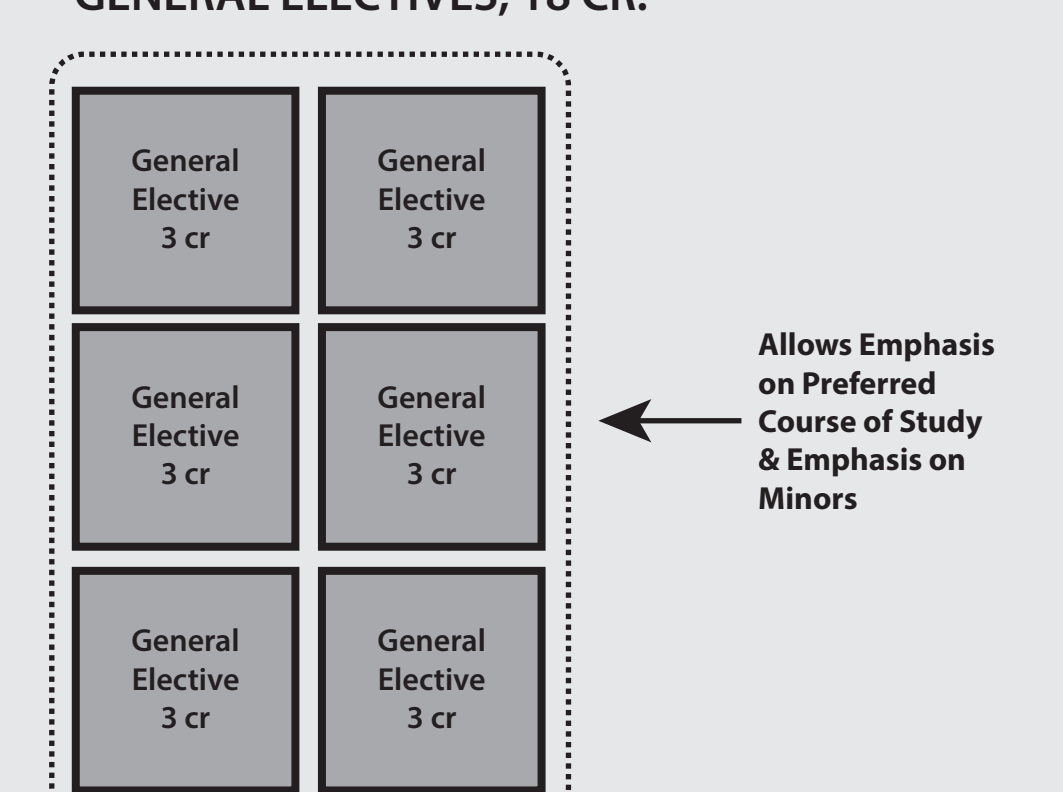
GAME DESIGN, 6 CR.



GAME COMPUTING, 6 CR.



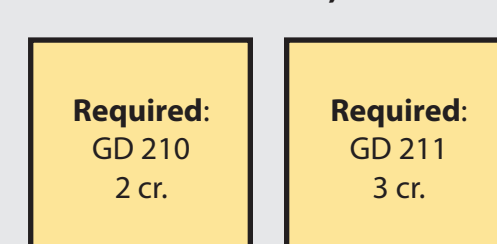
GENERAL ELECTIVES, 18 CR.



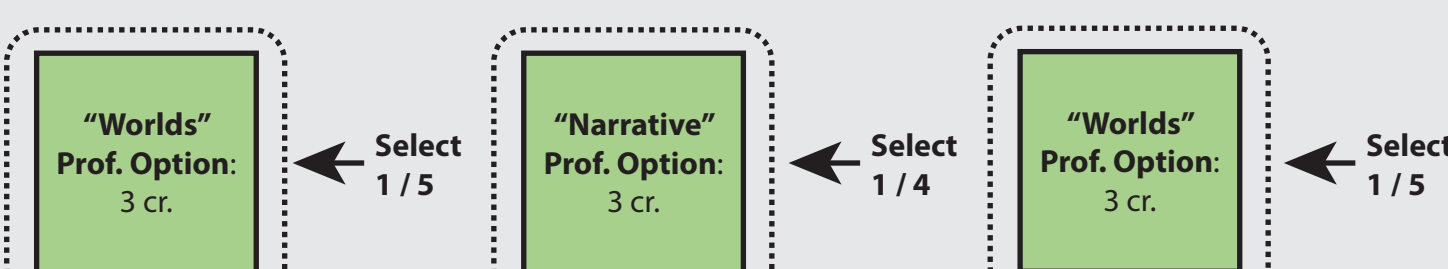
## TRACK THREE, WORLDS, NARRATIVE, & SOCIETY

### YEAR TWO

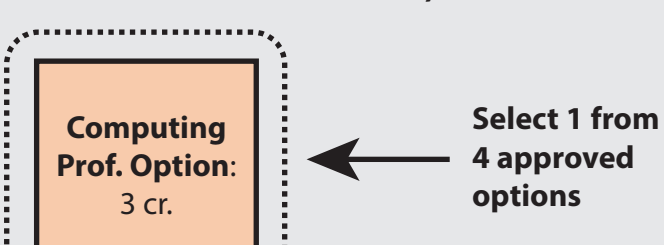
GAME DESIGN, 5 CR.



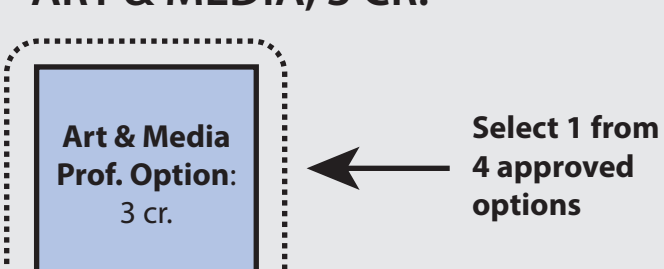
WORLDS, NARRATIVE, SOCIETY, 9 CR.



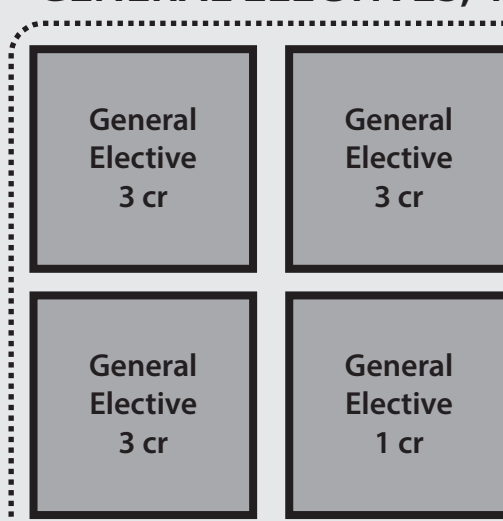
GAME COMPUTING, 3 CR.



ART & MEDIA, 3 CR.

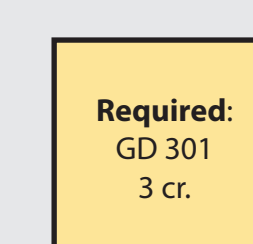


GENERAL ELECTIVES, 10 CR.

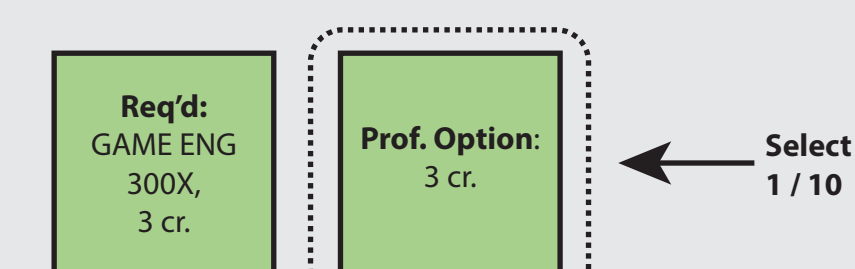


### YEAR THREE

GAME DESIGN, 3 CR.



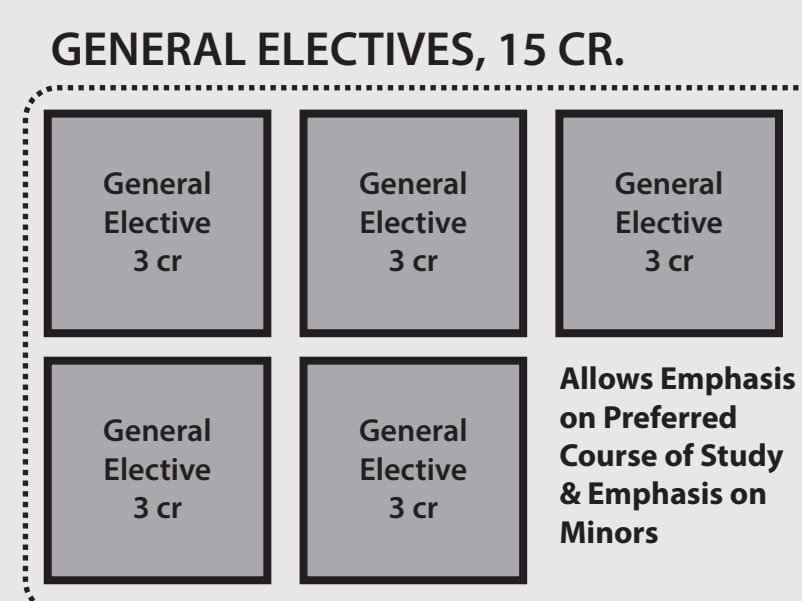
WORLDS, NARRATIVE, SOCIETY, 6 CR.



GAME DESIGN MASTER LIST, 6 CR.

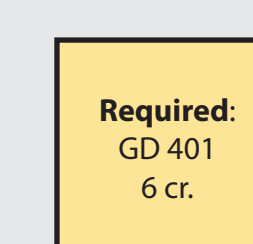


GENERAL ELECTIVES, 15 CR.

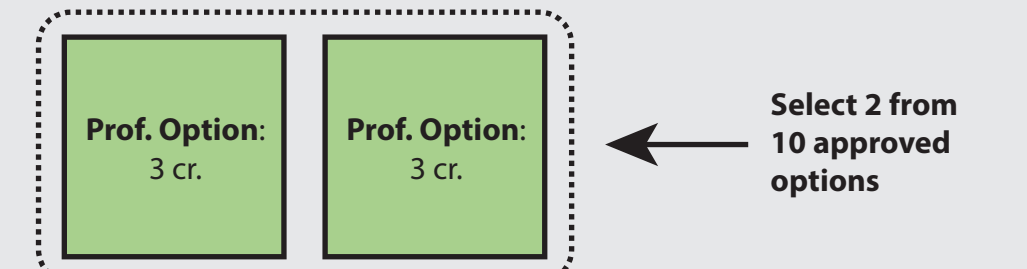


### YEAR FOUR

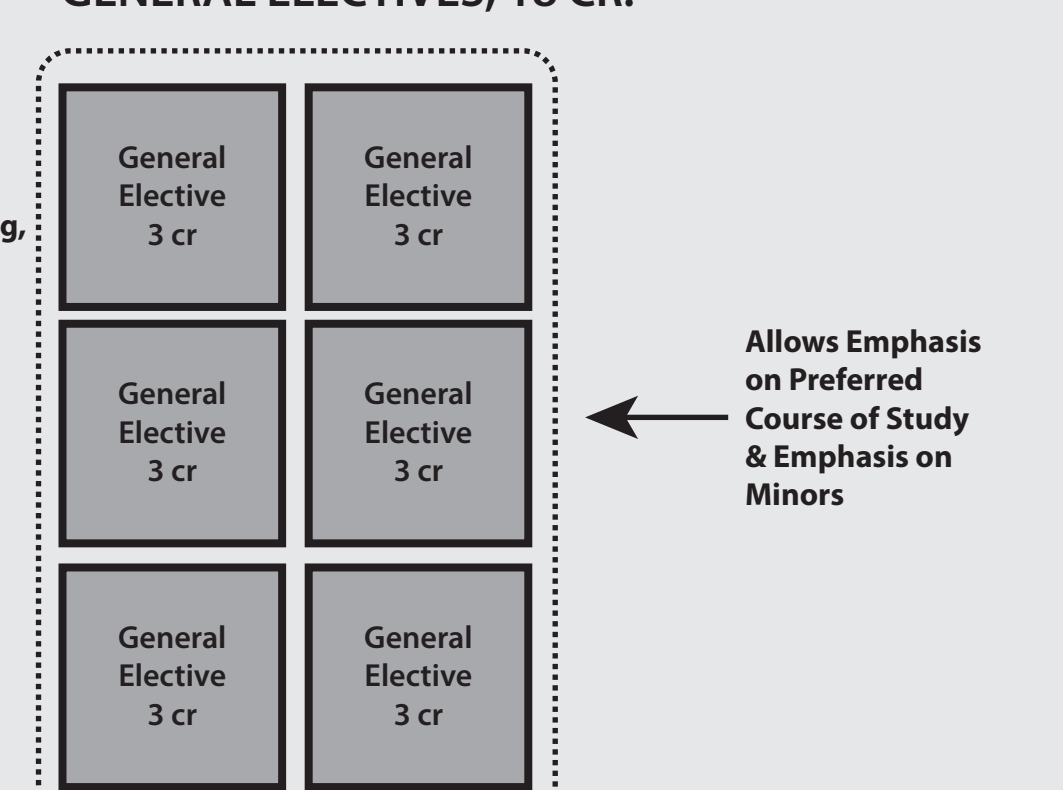
GAME DESIGN, 6 CR.



WORLDS, NARRATIVE, SOCIETY, 6 CR.



GENERAL ELECTIVES, 18 CR.



# TRACK ONE, ART & INTERACTIVE MEDIA DESIGN

## YEAR ONE

### GAME DESIGN, 3 CR.

**Required:**  
GD 202  
3 cr.

### ART & MEDIA, 7 CR.

DSN S 131  
4 cr.

ARTIS 212  
3 cr.

### GAME COMPUTING, 3 CR.

**Pre-Req:**  
MATH 140  
or 165

COM S  
127  
3 cr

### WORLDS, NARRATIVE, SOCIETY, 3 CR.

**Pre-Req:**  
ENG 150  
or 250

**Required:**  
Game Design:  
3 cr.

Select 1 from  
2 approved  
options

### GENERAL ELECTIVES, 14 CR.

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
2 cr

## YEAR TWO

### GAME DESIGN, 5 CR.

**Required:**  
GD 210  
2 cr.

**Required:**  
GD 211  
3 cr.

### ART & MEDIA, 9 CR.

**Required:**  
ARTIS 230  
3 cr.

**Art & Media Prof. Option:**  
3 cr.

**Art & Media Prof. Option:**  
3 cr.

Select 2 from  
3 approved  
options

### GAME COMPUTING, 3 CR.

**Computing Prof. Option:**  
3 cr.

Select 1 from  
4 approved  
options

### WORLDS, NARRATIVE, SOCIETY, 3 CR.

**"Worlds" Prof. Option:**  
3 cr.

Select 1 from  
14 approved  
options

### GENERAL ELECTIVES, 10 CR.

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
1 cr

## YEAR THREE

### GAME DESIGN, 3 CR.

**Required:**  
GD 301  
3 cr.

### ART & MEDIA, 6 CR.

**Art & Media Prof. Option:**  
3 cr.

**Art & Media Prof. Option:**  
3 cr.

Select 2 from  
5 approved  
options

### GAME DESIGN MASTER LIST, 6 CR.

**Prof. Option:**  
3 cr.

**Prof. Option:**  
3 cr.

Select 2 from  
multiple options  
(Art & Design, Computing,  
& or Narrative/Worlds)

### GENERAL ELECTIVES, 15 CR.

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

Allows Emphasis  
on Preferred  
Course of Study  
& Emphasis on  
Minors

## YEAR FOUR

### GAME DESIGN, 6 CR.

**Required:**  
GD 401  
6 cr.

### ART & MEDIA, 6 CR.

**Art & Media Prof. Option:**  
3 cr.

**Art & Media Prof. Option:**  
3 cr.

Select 2 from  
7 approved  
options

### GENERAL ELECTIVES, 18 CR.

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

Allows Emphasis  
on Preferred  
Course of Study  
& Emphasis on  
Minors



# TRACK TWO, GAME COMPUTING

## YEAR ONE

### GAME DESIGN, 3 CR.

**Required:**  
GD 202  
3 cr.

### ART & MEDIA, 7 CR.

DSN S 131 4 cr.	ARTIS 212 3 cr.
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### GAME COMPUTING, 3 CR.

Pre-Req: MATH 140 or 165	COM S 127 3 cr
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### WORLDS, NARRATIVE, SOCIETY, 3 CR.

Pre-Req: ENG 150 or 250	<b>Required:</b> Game Design: 3 cr.
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← Select 1 from 2 approved options

### GENERAL ELECTIVES, 14 CR.

General Elective 3 cr	General Elective 3 cr	General Elective 3 cr
General Elective 3 cr	General Elective 2 cr	

## YEAR TWO

### GAME DESIGN, 5 CR.

<b>Required:</b> GD 210 2 cr.	<b>Required:</b> GD 211 3 cr.
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### GAME COMPUTING, 12 CR.

<b>Req'd:</b> GAME COM 200X 3 cr.	<b>Req'd:</b> COM S 227 3 cr.	<b>Req'd:</b> COM S 228 3 cr.	<b>Req'd:</b> COM S 230 3 cr.
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### GAME DESIGN MASTER LIST, 3 CR.

**Prof. Option:**  
3 cr.

← Select 1 from multiple options (Art & Design, Computing, & or Narrative/Worlds)

### PRE-REQUISITES, TBD

**Req'd:**  
MATH 165,  
166, 207  
3 cr.

### GENERAL ELECTIVES, 10 CR.

General Elective 3 cr	General Elective 3 cr
General Elective 3 cr	General Elective 1 cr

## YEAR THREE

### GAME DESIGN, 3 CR.

**Required:**  
GD 301  
3 cr.

### GAME COMPUTING, 9 CR.

<b>Req'd:</b> COM S 311 3 cr.	<b>Req'd:</b> COM S 327 3 cr.	<b>Req'd:</b> COM S 336 3 cr.
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### GAME DESIGN MASTER LIST, 3 CR.

**Prof. Option:**  
3 cr.

← Select 1 from multiple options (Art & Design, Computing, & or Narrative/Worlds)

### GENERAL ELECTIVES, 15 CR.

General Elective 3 cr	General Elective 3 cr	General Elective 3 cr
General Elective 3 cr	General Elective 3 cr	Allows Emphasis on Preferred Course of Study & Emphasis on Minors

## YEAR FOUR

### GAME DESIGN, 6 CR.

**Required:**  
GD 401  
6 cr.

### GAME COMPUTING, 6 CR.

<b>Req'd:</b> COM S 437 3 cr.	<b>Req'd:</b> Upper Div. Course: 3 cr.
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← Select 1 from 7 approved options

### GENERAL ELECTIVES, 18 CR.

General Elective 3 cr	General Elective 3 cr
General Elective 3 cr	General Elective 3 cr
General Elective 3 cr	General Elective 3 cr

← Allows Emphasis on Preferred Course of Study & Emphasis on Minors

# TRACK THREE, WORLDS, NARRATIVE, & SOCIETY

## YEAR ONE

### GAME DESIGN, 3 CR.

**Required:**  
GD 202  
3 cr.

### ART & MEDIA, 7 CR.

DSN S 131  
4 cr.

ARTIS 212  
3 cr.

### GAME COMPUTING, 3 CR.

Pre-Req:  
MATH 140  
or 165

COM S  
127  
3 cr

### WORLDS, NARRATIVE, SOCIETY, 3 CR.

Pre-Req:  
ENG 150  
or 250

**Required:**  
Game Design:  
3 cr.

Select 1 from  
2 approved  
options

### GENERAL ELECTIVES, 14 CR.

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
2 cr

## YEAR TWO

### GAME DESIGN, 5 CR.

**Required:**  
GD 210  
2 cr.

**Required:**  
GD 211  
3 cr.

### WORLDS, NARRATIVE, SOCIETY, 9 CR.

**"Worlds"**  
Prof. Option:  
3 cr.

Select 1/5

**"Narrative"**  
Prof. Option:  
3 cr.

Select 1/4

**"Worlds"**  
Prof. Option:  
3 cr.

Select 1/5

### GAME COMPUTING, 3 CR.

**Computing**  
Prof. Option:  
3 cr.

Select 1 from  
4 approved  
options

### ART & MEDIA, 3 CR.

**Art & Media**  
Prof. Option:  
3 cr.

Select 1 from  
4 approved  
options

### GENERAL ELECTIVES, 10 CR.

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
1 cr

## YEAR THREE

### GAME DESIGN, 3 CR.

**Required:**  
GD 301  
3 cr.

### WORLDS, NARRATIVE, SOCIETY, 6 CR.

**Req'd:**  
GAME ENG  
300X,  
3 cr.

**Prof. Option:**  
3 cr.

Select 1/10

### GAME DESIGN MASTER LIST, 6 CR.

**Prof. Option:**  
3 cr.

**Prof. Option:**  
3 cr.

Select 2 from  
multiple options  
(Art & Design, Computing,  
& or Narrative/Worlds)

### GENERAL ELECTIVES, 15 CR.

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

Allows Emphasis  
on Preferred  
Course of Study  
& Emphasis on  
Minors

## YEAR FOUR

### GAME DESIGN, 6 CR.

**Required:**  
GD 401  
6 cr.

### WORLDS, NARRATIVE, SOCIETY, 6 CR.

**Prof. Option:**  
3 cr.

**Prof. Option:**  
3 cr.

Select 2 from  
10 approved  
options

### GENERAL ELECTIVES, 18 CR.

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

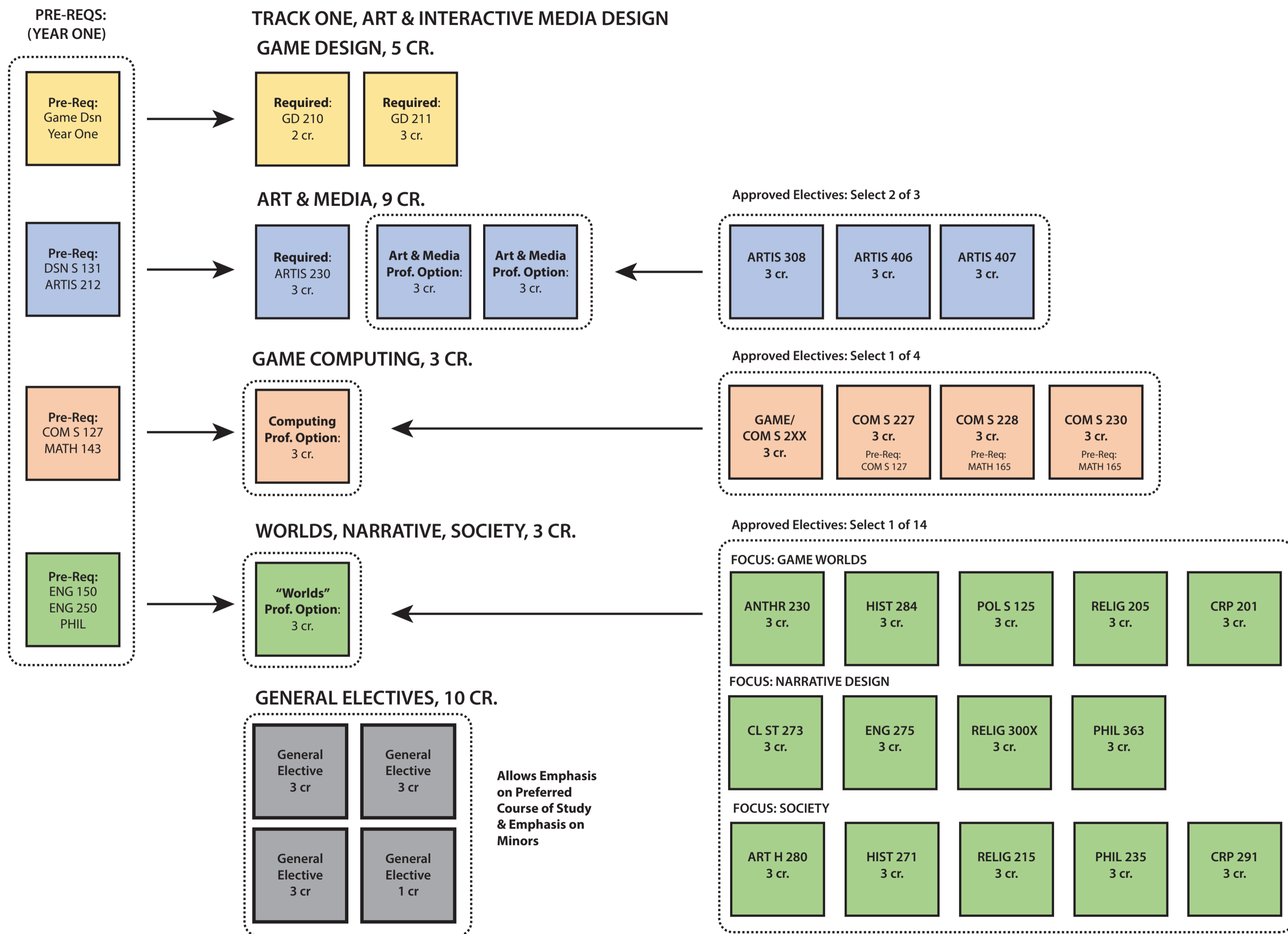
General Elective  
3 cr

Allows Emphasis  
on Preferred  
Course of Study  
& Emphasis on  
Minors



# TRACK ONE, ART & INTERACTIVE MEDIA DESIGN

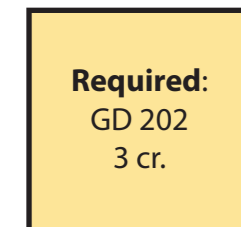
## YEAR TWO



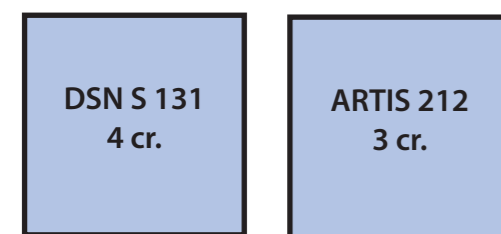
# COMBINED TRACKS, ART & MEDIA + WORLDS, NARRATIVE, & SOCIETY

## YEAR ONE

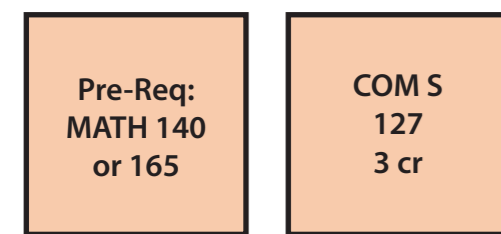
GAME DESIGN, 3 CR.



ART & MEDIA, 7 CR.



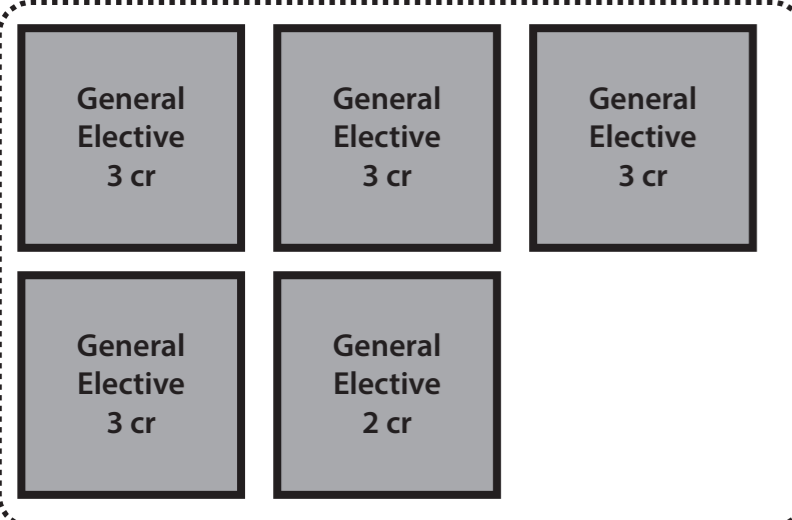
GAME COMPUTING, 3 CR.



WORLDS, NARRATIVE, SOCIETY, 3 CR.

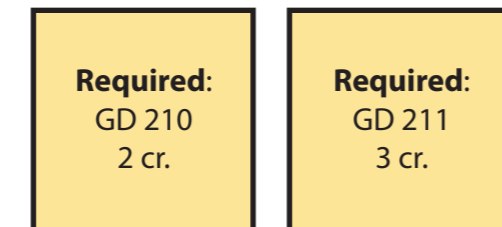


GENERAL ELECTIVES, 14 CR.

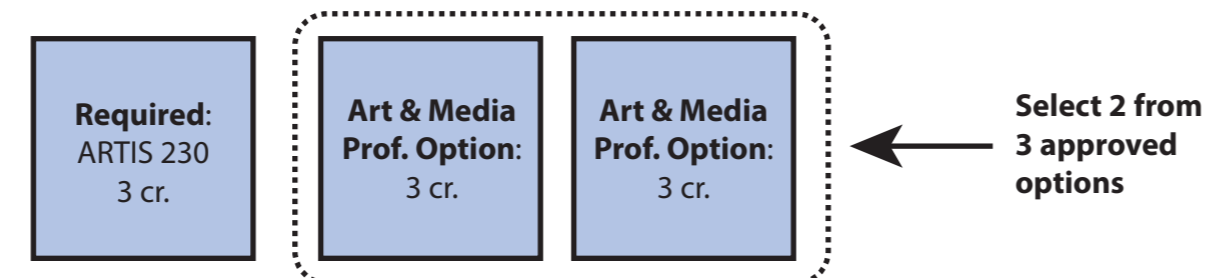


## YEAR TWO

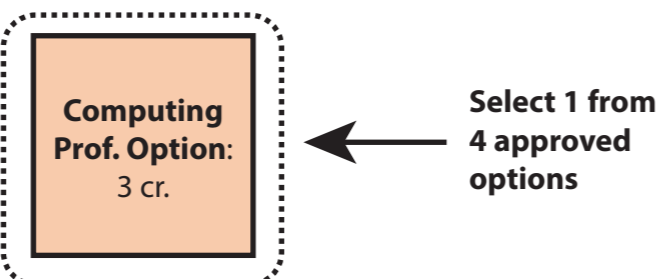
GAME DESIGN, 5 CR.



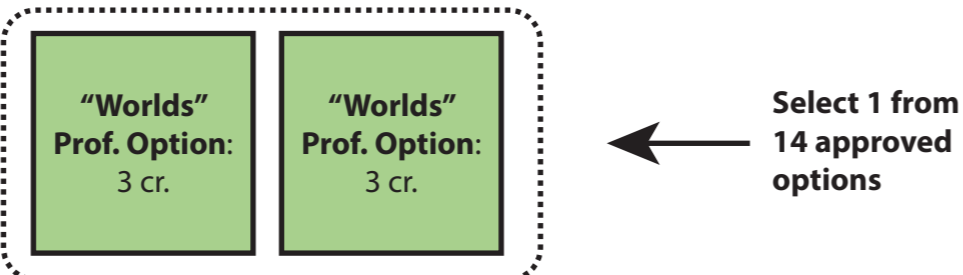
ART & MEDIA, 9 CR.



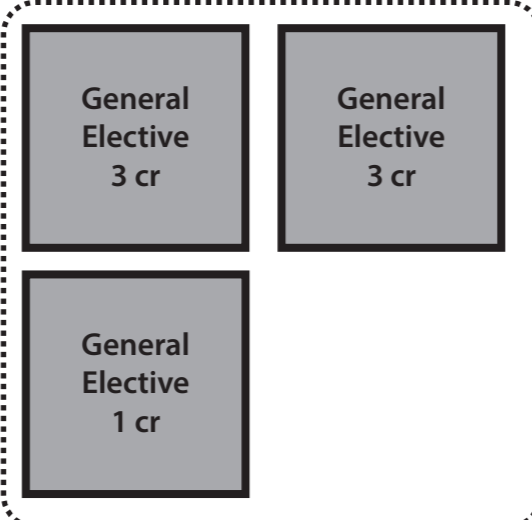
GAME COMPUTING, 3 CR.



WORLDS, NARRATIVE, SOCIETY, 3 CR.

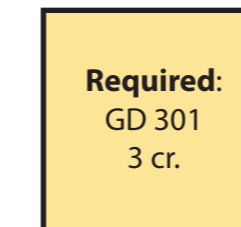


GENERAL ELECTIVES, 7 CR.

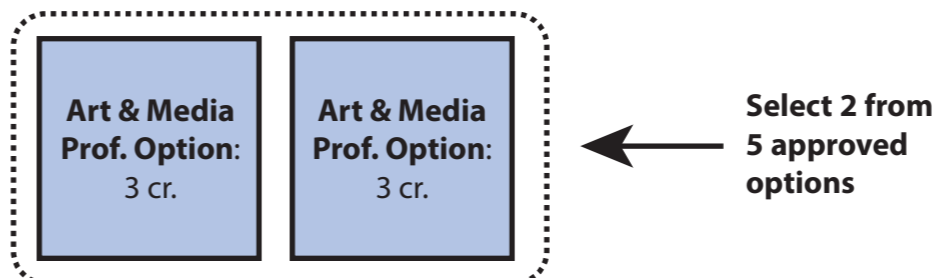


## YEAR THREE

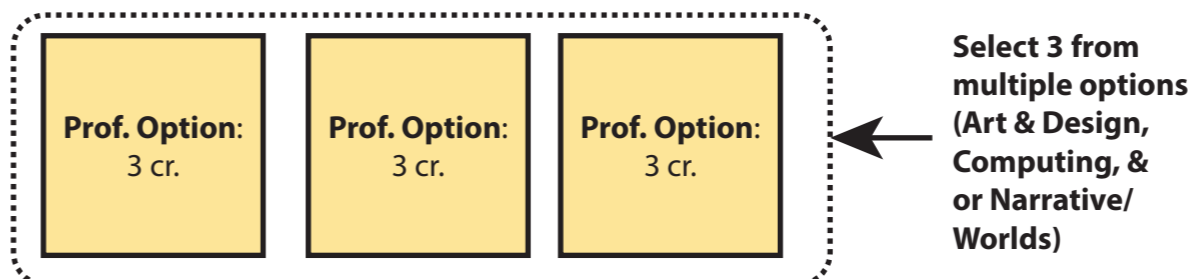
GAME DESIGN, 3 CR.



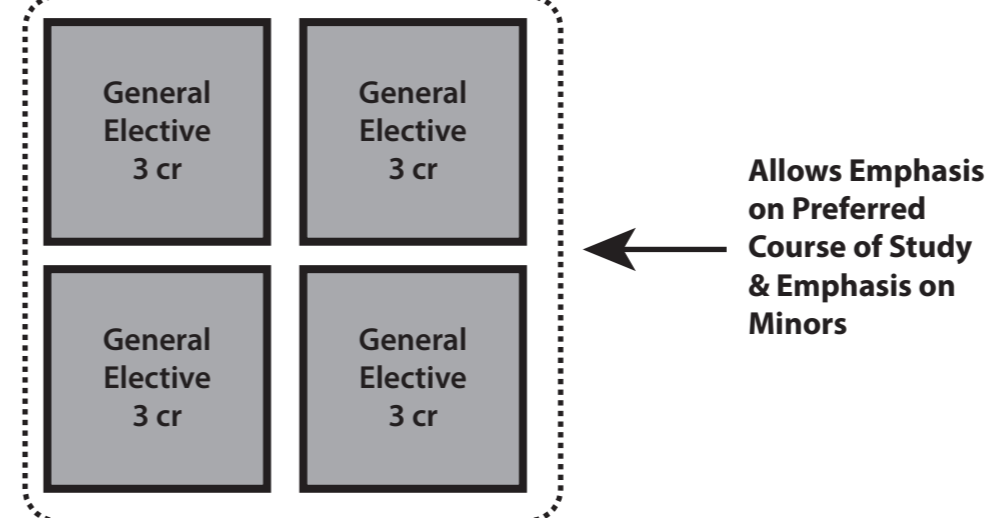
ART & MEDIA, 6 CR.



GAME DESIGN MASTER LIST, 9 CR.

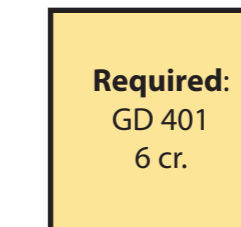


GENERAL ELECTIVES, 12 CR.

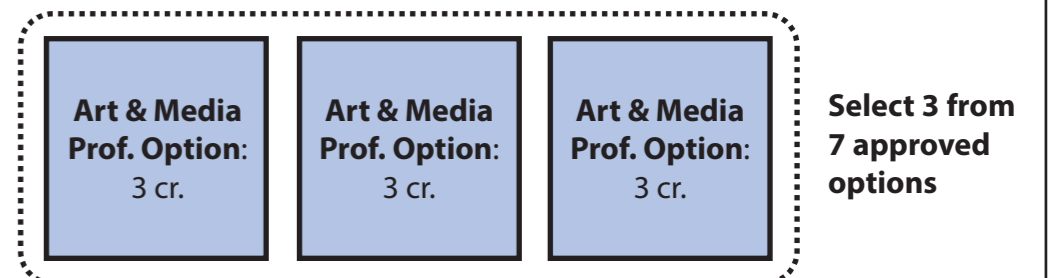


## YEAR FOUR

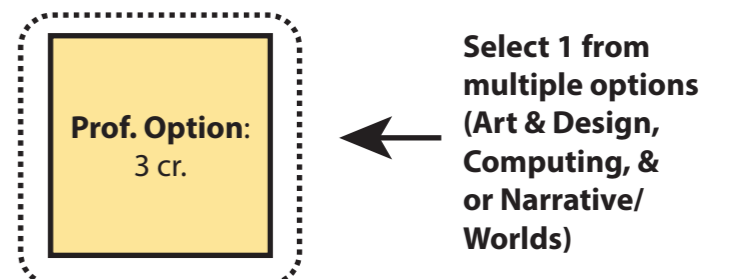
GAME DESIGN, 6 CR.



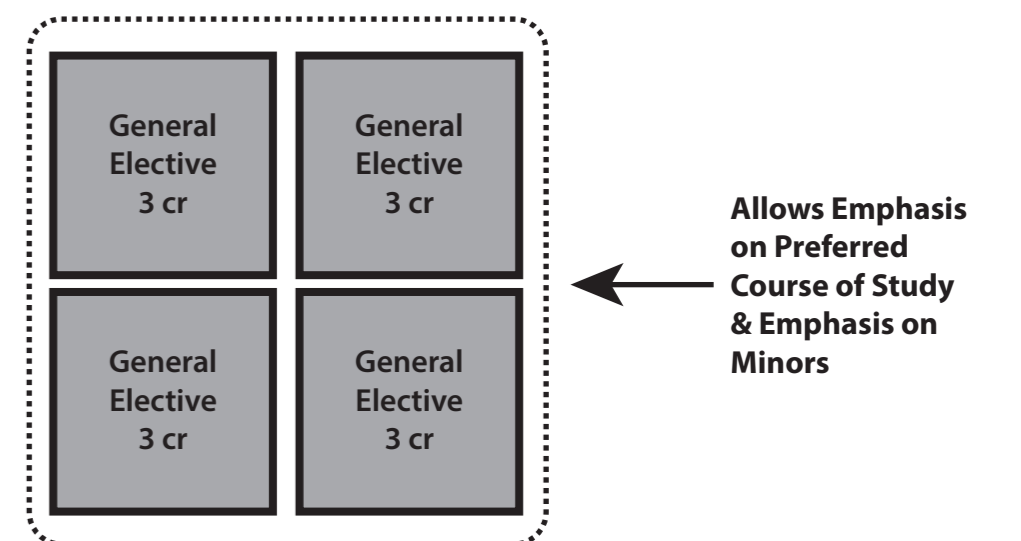
ART & MEDIA, 9 CR.



GAME DESIGN MASTER LIST, 3 CR.



GENERAL ELECTIVES, 12 CR.



# COMBINED TRACKS, ART & MEDIA + WORLDS, NARRATIVE, & SOCIETY

## YEAR ONE

### GAME DESIGN, 3 CR.

**Required:**  
GD 202  
3 cr.

### ART & MEDIA, 7 CR.

DSN S 131  
4 cr.

ARTIS 212  
3 cr.

### GAME COMPUTING, 3 CR.

Pre-Req:  
MATH 140  
or 165

COM S  
127  
3 cr

### WORLDS, NARRATIVE, SOCIETY, 3 CR.

Pre-Req:  
ENG 150  
or 250

**Required:**  
Game Design:  
3 cr.

Select 1 from 2 approved options

### GENERAL ELECTIVES, 14 CR.

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
2 cr

## YEAR TWO

### GAME DESIGN, 5 CR.

**Required:**  
GD 201  
2 cr.

**Required:**  
GD 211  
3 cr.

### ART & MEDIA, 9 CR.

**Required:**  
ARTIS 230  
3 cr.

**Art & Media Prof. Option:**  
3 cr.

**Art & Media Prof. Option:**  
3 cr.

Select 2 from 3 approved options

### GAME COMPUTING, 9 CR.

**Req'd:**  
GAME COM  
200X  
3 cr.

**Req'd:**  
COM S  
227  
3 cr.

**Req'd:**  
COM S  
228  
3 cr.

### GENERAL ELECTIVES, 7 CR.

General Elective  
3 cr

General Elective  
3 cr

General Elective  
1 cr

## YEAR THREE

### GAME DESIGN, 6 CR.

**Required:**  
GD 301  
3 cr.

**Required:**  
GD 302  
3 cr.

### ART & MEDIA, 6 CR.

**Art & Media Prof. Option:**  
3 cr.

**Art & Media Prof. Option:**  
3 cr.

Select 2 from 5 approved options

### GAME COMPUTING, 6 CR.

**Req'd:**  
COM S  
311  
3 cr.

**Req'd:**  
COM S  
327  
3 cr.

### GENERAL ELECTIVES, 12 CR.

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

Allows Emphasis on Preferred Course of Study & Emphasis on Minors

## YEAR FOUR

### GAME DESIGN, 6 CR.

**Required:**  
GD 401  
6 cr.

### ART & MEDIA, 9 CR.

**Art & Media Prof. Option:**  
3 cr.

**Art & Media Prof. Option:**  
3 cr.

**Art & Media Prof. Option:**  
3 cr.

Select 3 from 7 approved options

### GAME COMPUTING, 3 CR.

**Prof. Option:**  
3 cr.

Select 1 from 3 options

### GENERAL ELECTIVES, 12 CR.

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

General Elective  
3 cr

Allows Emphasis on Preferred Course of Study & Emphasis on Minors

# BS in Game Design

## Curriculum Sheet 202X to Present 121 credits required

Student Name: \_\_\_\_\_  
Student ID# \_\_\_\_\_

University Requirement	6.0
<a href="#">International Perspectives</a>	
<a href="#">US Diversity</a>	

Communications	10.0
ENGL 150 (C or better) Critical Writing and	3.0
ENGL 250 (C or better) Written, Oral, Visual and	3.0
Select 1 course from COMST 101, 102, SP CM 110, 212	3.0
LIB 160	1.0

Humanities	6.0
See approved list of humanities on the back page	3.0
See approved list of humanities on the back page	3.0

Social Sciences	6.0
See approved list of social sciences on the back page	3.0
See approved list of social sciences on the back page	3.0

Mathematical, Physical & Biological Science	6.0
See approved list of math and sciences on the back page	3.0
See approved list of math and sciences on the back page	3.0

Additional General Education Courses	6.0
300-400 Level (See approved list of Gen Ed on the back page)	3.0
300-400 Level (See approved list of Gen Ed on the back page)	3.0

Game Design Core	30.0
COM S 127 Introduction to Programming	3.0
DSN S 131 Drawing I	4.0
ArtIS 212 Studio Fundamentals: Digital Media	3.0
GAME 210 Game Career Development	2.0
GAME 211 Gameplay and Game Analysis	3.0

Game Design Core (continued)	
Choose Two: GAME 202 Game Design for Serious Games, HIST 201 History of Western Civilization 1 or HIST 202 History of Western Civilization 2, GAME/HIST 200X Game Design and History, GAME/HIST 200X Game Design and Cultures	6.0
GAME 301 Game Design Workshop	3.0
GAME 401 Game Design Capstone	6.0

Choose <u>One</u> Game Design Focus Area:	33.0
<b>Art and Interactive Media Design focus</b>	
Focus Required: ArtIS 230 Drawing II, ArtIS 308 Computer Modeling and Virtual Photography, ArtIS 407 Principles of Character Animation	9.0
Focus Options: Choose <b>Four</b> (at least 2 must be 300 level or above, See Focus Options on Back Page):	12.0
Interdisciplinary Game Options. Choose <b>two</b> courses, <b>one</b> from each focus area <i>other than your own</i> . See Master List.	6.0
Game Exploration. Choose any <b>two</b> courses from the Master List:	6.0
<b>Game Computing focus</b>	
Focus Required: Game/Com S 2XX Programming for Game Engines, COM S 227 Object Oriented Programming, COMS 228 Introduction to Data Structures, COM S 230 Discrete Computational Structures, COM S 311 Introduction to the Design and Analysis of Algorithms, COM S 327 Advanced Programming Techniques, COM S 336 Intro to Computer Graphics, COM S 437 Computer Game and Media Programming	24.0
Focus Options: Choose <b>one</b> (must be 300 level or above, See Focus Options on Back Page):	3.0
Interdisciplinary Game Options. Choose <b>one</b> course from another focus area <i>other than your own</i> . See Master List.	3.0
Game Exploration. Choose <b>one</b> course from the Master List:	3.0
<b>Game Worlds, Narrative Design, and Society focus</b>	
Focus Required: GAME/ENGL 300X Writing for Games	3.0
Focus Options: Choose <b>Six</b> (at least 2 must be 300 level or above, See Focus Options on Back Page):	18.0
Interdisciplinary Game Options. Choose <b>two</b> courses, <b>one</b> from each focus area <i>other than your own</i> . See Master List.	6.0
Game Exploration. Choose any <b>two</b> courses from the Master List:	6.0
Electives	18.0

# BS in Game Design

## Curriculum Sheet (Art & Interactive Media Design)

Sample of Four-Year Sequence of Classes

For a complete list of courses for Humanities, Social Sciences, and Math and Sciences, please consult the General Education approved course list, 2024-25

### Master Game List

#### Art and Interactive Media Design

##### Lower Division

ARTIS 230 - Drawing II

##### Upper Division

ARTIS 308 - Computer Modeling, Rendering and Virtual Photography, ARTIS 323 - Scientific Illustration Principles and Techniques, ARTIS 326 - Illustration and Illustration Software, ARTIS 327 - Illustration as Communication, ARTIS 406X - Introduction to 3D Organic Modeling in ZBrush, ARTIS 407 - Principles of Character Animation, ARTIS 408 - Principles of 3D Animation, ARTIS 431 - Character and Scene Design, ARTIS 432 - Sequential Narrative Drawing, ARTIS 470X - Data Coding and Form, ARTIS 473 - Video Art, ARTIS 475 - Interactive Art, ARTGR 484 2 - 3D Modeling and Augmented Reality, ARTGR 463 - 3D Motion Graphics, GAME/ARTGR 4XX - Analog Game Design and Fabrication

#### Game Computing

##### Lower Division

COM S 227 - Object Oriented Programming, COM S 228 - Introduction to Data Structures, COM S 230 - Discrete Computational Structures, LA 211 - Digital Design Methods for Landscape Architecture, CRP 251 - Fundamentals of Geographic Information Systems

##### Upper Division

COM S 311 - Introduction to the Design and Analysis of Algorithms, COM S 327 - Advanced Programming Techniques, COM S 336 - Computer Graphics, CRP 351 - Intermediate GIS, COM S 437 - Computer Game and Media Programming, CRP 301 - Urban Analytical Methods, CRP 456 - GIS Programming and Automation, CRP 449 - Geodesign: Planning for Sustainable Futures, CYB E 231 - Cyber Security Concepts and Tools (qualifies as UD), EDUC 302 - Principles and Practices of Learning with Technology, S E 309 - Software Development Practices, S E 317 - Introduction to Software Testing, S E 319 - Construction of User Interfaces, S E 339 - Software Architecture and Design, S E 421 - Software Analysis and Verification for Safety and Security

#### Game Worlds, Narrative Design, and Society

##### Lower Division

ANTHR 230 - Globalization and the Human Condition, ART H 280/281 - History of Art I/II, CL ST 273 - Greek and Roman Mythology, CRP 201 - The North American Metropolis, CRP 291 - World Cities and Globalization, CRP 455 - Smart and Sustainable Cities, CRP 320 - Urban Geography, ENGL 275 - Analysis of Popular Cultural Texts, ENGL 302 - Business Communication, ENGL 313 - Rhetorical Web Design, ENGL 314 - Technical Communication, HIST 271 - History of Sports in U.S., PHIL 230 - Moral Theory and Practice, POL S 125 - Democracy and Dictatorship: Introduction to Comparative Politics, RELIG 205/WLC 205 - World Religions, RELIG 215 - Religion and Popular Culture, HIST 284 - Wonders of the World, Global Innovation

##### Upper Division

AF AM 330/SOC 330 - Ethnic and Race Relations, AM IN 322 - Peoples and Cultures of Native North America, ART H 395 - Art and Theory Since 1945, ART H 494/WGS 494 - Women and Gender in Art, ENGL/GAME 3xx - Writing for Games, ENGL 304 - Creative Writing: Fiction, ENGL 315 - Creative Writing: Screenplays, ENGL 330 - Science Fiction, ENGL 411 - Technology, Rhetoric, and Professional Communication, GAME/RELIG 300X - Heroes, Myths, and Games, HIST 304 - Cultural Heritage of the Ancient World, HIST 364 - The Mythic Wild West, HIST 488 - American Stuff, Colonial Times to the Present, PHIL 343 - Philosophy of Technology, PHIL 363 - Metaphysics in Science Fiction and Popular Culture, PHIL 364 - Metaphysics: God, Minds, and Matter, POL S 308X - Video Games and Politics, POL S 334/SOC 334 - Politics and Society, PSYCH 386 - Media Psychology, WGS 430 - Gender and Consumer Culture

	Fall Semester		Spring Semester	
1	DSN S 131 Drawing I	4	COM S 127 Introduction to Programming	3
	GAME 202 Game Design for Serious Games	3	ArtIS 212 Studio Fundamentals: Digital Media	3
	ENGL 150	3	GAME/HIST 2XX Game Design and History or Culture	3
	*Math 140 (can skip through satisfactory placement assessment)	3	ENGL 250	3
	General Education	3	*Math 143 (can skip through satisfactory placement assessment)	3
		16	LIB 160 Information Literacy	1
				16
2	GAME 210 Game Career Development	3	Game 211 Gameplay and Game Analysis	2
	ArtIS 230 Drawing II	3	ArtIS 407 Principles of Character Animation	3
	ArtIS 308 Computer Modeling, Rendering & VT Photo	3	COM S 227 Object Oriented Programming	3
	ENGL 250 or General Education	3	ART H History of Art I	3
	General Education	3	*BIOL 101 Introduction to Biology	3
		15		14
3	Game 301 Game Design Workshop	3	ArtIS 323 Scientific Illustration Principles and Techniques	3
	ArtIS 408 Principles of Animation	3	RELIG 205 World Religions	3
	ArtIS 473 Video Art	3	Elective	3
	General Education	3	Elective	3
	General Education	3	General Education	3
		15		15
4	Game 401 Game Design Capstone	6	ArtIS 475 Interactive Art	3
	GAME/ARTGR 4xx – Analog Game Design and Fab	3	Elective	3
	Elective	3	Elective	3
	General Education	3	Elective	3
			15	General Education
				15
			Total	121

\*Prereq for later courses not covered by Core classes

Gen Eds plus LIB = 40

Core = 30

Focus = 33

Electives = 18

Total = 121

# BS in Game Design

## Curriculum Sheet 202X to Present 121 credits required

Student Name: \_\_\_\_\_  
Student ID# \_\_\_\_\_

University Requirement	6.0
<a href="#">International Perspectives</a>	
<a href="#">US Diversity</a>	

Communications	10.0
ENGL 150 (C or better) Critical Writing and	3.0
ENGL 250 (C or better) Written, Oral, Visual and	3.0
Select 1 course from COMST 101, 102, SP CM 110, 212	3.0
LIB 160	1.0

Humanities	6.0
See approved list of humanities on the back page	3.0
See approved list of humanities on the back page	3.0

Social Sciences	6.0
See approved list of social sciences on the back page	3.0
See approved list of social sciences on the back page	3.0

Mathematical, Physical & Biological Science	6.0
See approved list of math and sciences on the back page	3.0
See approved list of math and sciences on the back page	3.0

Additional General Education Courses	6.0
300-400 Level (See approved list of Gen Ed on the back page)	3.0
300-400 Level (See approved list of Gen Ed on the back page)	3.0

Game Design Core	30.0
COM S 127 Introduction to Programming	3.0
DSN S 131 Drawing I	4.0
ArtIS 212 Studio Fundamentals: Digital Media	3.0
GAME 210 Game Career Development	2.0
GAME 211 Gameplay and Game Analysis	3.0

Game Design Core (continued)	
Choose Two: GAME 202 Game Design for Serious Games, HIST 201 History of Western Civilization 1 or HIST 202 History of Western Civilization 2, GAME/HIST 200X Game Design and History, GAME/HIST 200X Game Design and Cultures	6.0
GAME 301 Game Design Workshop	3.0
GAME 401 Game Design Capstone	6.0

Choose <u>One</u> Game Design Focus Area:	33.0
<b>Art and Interactive Media Design focus</b>	
Focus Required: ArtIS 230 Drawing II, ArtIS 308 Computer Modeling and Virtual Photography, ArtIS 407 Principles of Character Animation	9.0
Focus Options: Choose <b>Four</b> (at least 2 must be 300 level or above, See Focus Options on Back Page):	12.0
Interdisciplinary Game Options. Choose <b>two</b> courses, <b>one</b> from each focus area <i>other than your own</i> . See Master List.	6.0
Game Exploration. Choose any <b>two</b> courses from the Master List:	6.0
<b>Game Computing focus</b>	
Focus Required: Game/Com S 2XX Programming for Game Engines, COM S 227 Object Oriented Programming, COMS 228 Introduction to Data Structures, COM S 230 Discrete Computational Structures, COM S 311 Introduction to the Design and Analysis of Algorithms, COM S 327 Advanced Programming Techniques, COM S 336 Intro to Computer Graphics, COM S 437 Computer Game and Media Programming	24.0
Focus Options: Choose <b>one</b> (must be 300 level or above, See Focus Options on Back Page):	3.0
Interdisciplinary Game Options. Choose <b>one</b> course from another focus area <i>other than your own</i> . See Master List.	3.0
Game Exploration. Choose <b>one</b> course from the Master List:	3.0
<b>Game Worlds, Narrative Design, and Society focus</b>	
Focus Required: GAME/ENGL 300X Writing for Games	3.0
Focus Options: Choose <b>Six</b> (at least 2 must be 300 level or above, See Focus Options on Back Page):	18.0
Interdisciplinary Game Options. Choose <b>two</b> courses, <b>one</b> from each focus area <i>other than your own</i> . See Master List.	6.0
Game Exploration. Choose any <b>two</b> courses from the Master List:	6.0
Electives	18.0



# BS in Game Design

## Curriculum Sheet (Game Computing)

Sample of Four-Year Sequence of Classes

For a complete list of courses for Humanities, Social Sciences, and Math and Sciences, please consult the General Education approved course list, 2024-25

### Master Game List

#### Art and Interactive Media Design

##### Lower Division

ARTIS 230 - Drawing II

##### Upper Division

ARTIS 308 - Computer Modeling, Rendering and Virtual Photography, ARTIS 323 - Scientific Illustration Principles and Techniques, ARTIS 326 - Illustration and Illustration Software, ARTIS 327 - Illustration as Communication, ARTIS 406X - Introduction to 3D Organic Modeling in ZBrush, ARTIS 407 - Principles of Character Animation, ARTIS 408 - Principles of 3D Animation, ARTIS 431 - Character and Scene Design, ARTIS 432 - Sequential Narrative Drawing, ARTIS 470X - Data Coding and Form, ARTIS 473 - Video Art, ARTIS 475 - Interactive Art, ARTGR 484 2 - 3D Modeling and Augmented Reality, ARTGR 463 - 3D Motion Graphics, GAME/ARTGR 4XX - Analog Game Design and Fabrication

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##### Lower Division

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#### Game Worlds, Narrative Design, and Society

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ANTHR 230 - Globalization and the Human Condition, ART H 280/281 - History of Art I/II, CL ST 273 - Greek and Roman Mythology, CRP 201 - The North American Metropolis, CRP 291 - World Cities and Globalization, CRP 455 - Smart and Sustainable Cities, CRP 320 - Urban Geography, ENGL 275 - Analysis of Popular Cultural Texts, ENGL 302 - Business Communication, ENGL 313 - Rhetorical Web Design, ENGL 314 - Technical Communication, HIST 271 - History of Sports in U.S., PHIL 230 - Moral Theory and Practice, POL S 125 - Democracy and Dictatorship: Introduction to Comparative Politics, RELIG 205/WLC 205 - World Religions, RELIG 215 - Religion and Popular Culture, HIST 284 - Wonders of the World, Global Innovation

##### Upper Division

AF AM 330/SOC 330 - Ethnic and Race Relations, AM IN 322 - Peoples and Cultures of Native North America, ART H 395 - Art and Theory Since 1945, ART H 494/WGS 494 - Women and Gender in Art, ENGL/GAME 3xx - Writing for Games, ENGL 304 - Creative Writing: Fiction, ENGL 315 - Creative Writing: Screenplays, ENGL 330 - Science Fiction, ENGL 411 - Technology, Rhetoric, and Professional Communication, GAME/RELIG 300X - Heroes, Myths, and Games, HIST 304 - Cultural Heritage of the Ancient World, HIST 364 - The Mythic Wild West, HIST 488 - American Stuff, Colonial Times to the Present, PHIL 343 - Philosophy of Technology, PHIL 363 - Metaphysics in Science Fiction and Popular Culture, PHIL 364 - Metaphysics: God, Minds, and Matter, POL S 308X - Video Games and Politics, POL S 334/SOC 334 - Politics and Society, PSYCH 386 - Media Psychology, WGS 430 - Gender and Consumer Culture

	Fall Semester		Spring Semester	
1	DSN S 131 Drawing I	4	COM S 127 Introduction to Programming	3
	GAME 202 Game Design for Serious Games	3	ArtIS 212 Studio Fundamentals: Digital Media	3
	ENGL 150	3	GAME/HIST 2XX Game Design and History or Culture	3
	*Math 140 (can skip through satisfactory placement assessment)	3	ENGL 250	3
	General Education	3	*Math 143 (can skip through satisfactory placement assessment)	3
		16	LIB 160 Information Literacy	1
				16
2	GAME 210 Game Career Development	3	Game 211 Gameplay and Game Analysis	2
	GAME/COM S 2XX Programming for Game Engines	3	COM S 228 Introduction to Data Structures	3
	COM S 227 Object Oriented Programming	3	COM S 230 Discrete Computational Structures	3
	ENGL 250 or General Education	3	ArtIS 407 Principles of Character Animation	3
	*Math 165 (can skip through satisfactory placement assessment)	3	*Math 166 (can skip through satisfactory placement assessment)	3
		15		14
3	Game 301 Game Design Workshop	3	COM S 336 Intro to Computer Graphics	3
	COM S 311 Intro to Design and Analysis of Algorithms	3	HIST 271 History of Sports in U.S.	3
	COM S 327 Advanced Programming Techniques	3	Elective	3
	*Math 207, 265, or 317 (can skip through satisfactory placement assessment)	3	Elective	3
	General Education	3	General Education	3
		15		15
4	Game 401 Game Design Capstone	6	COM S 437 Comp Game & Media Programming	3
	S E 319 Construction of User Interfaces	3	Elective	3
	Elective	3	Elective	3
	General Education	3	Elective	3
			15	General Education
				15

Total 121

\*Prereq for later courses not covered by Core classes

Gen Eds plus LIB = 40

Core = 30

Focus = 33

Electives = 18

Total = 121

# BS in Game Design

## Curriculum Sheet 202X to Present 121 credits required

Student Name: \_\_\_\_\_  
Student ID# \_\_\_\_\_

University Requirement	6.0
<a href="#">International Perspectives</a>	
<a href="#">US Diversity</a>	

Communications	10.0
ENGL 150 (C or better) Critical Writing and	3.0
ENGL 250 (C or better) Written, Oral, Visual and	3.0
Select 1 course from COMST 101, 102, SP CM 110, 212	3.0
LIB 160	1.0

Humanities	6.0
See approved list of humanities on the back page	3.0
See approved list of humanities on the back page	3.0

Social Sciences	6.0
See approved list of social sciences on the back page	3.0
See approved list of social sciences on the back page	3.0

Mathematical, Physical & Biological Science	6.0
See approved list of math and sciences on the back page	3.0
See approved list of math and sciences on the back page	3.0

Additional General Education Courses	6.0
300-400 Level (See approved list of Gen Ed on the back page)	3.0
300-400 Level (See approved list of Gen Ed on the back page)	3.0

Game Design Core	30.0
COM S 127 Introduction to Programming	3.0
DSN S 131 Drawing I	4.0
ArtIS 212 Studio Fundamentals: Digital Media	3.0
GAME 210 Game Career Development	2.0
GAME 211 Gameplay and Game Analysis	3.0

Game Design Core (continued)	
Choose Two: GAME 202 Game Design for Serious Games, HIST 201 History of Western Civilization 1 or HIST 202 History of Western Civilization 2, GAME/HIST 200X Game Design and History, GAME/HIST 200X Game Design and Cultures	6.0
GAME 301 Game Design Workshop	3.0
GAME 401 Game Design Capstone	6.0

Choose <u>One</u> Game Design Focus Area:	33.0
<b>Art and Interactive Media Design focus</b>	
Focus Required: ArtIS 230 Drawing II, ArtIS 308 Computer Modeling and Virtual Photography, ArtIS 407 Principles of Character Animation	9.0
Focus Options: Choose <b>Four</b> (at least 2 must be 300 level or above, See Focus Options on Back Page):	12.0
Interdisciplinary Game Options. Choose <b>two</b> courses, <b>one</b> from each focus area <i>other than your own</i> . See Master List.	6.0
Game Exploration. Choose any <b>two</b> courses from the Master List:	6.0
<b>Game Computing focus</b>	
Focus Required: Game/Com S 2XX Programming for Game Engines, COM S 227 Object Oriented Programming, COMS 228 Introduction to Data Structures, COM S 230 Discrete Computational Structures, COM S 311 Introduction to the Design and Analysis of Algorithms, COM S 327 Advanced Programming Techniques, COM S 336 Intro to Computer Graphics, COM S 437 Computer Game and Media Programming	24.0
Focus Options: Choose <b>one</b> (must be 300 level or above, See Focus Options on Back Page):	3.0
Interdisciplinary Game Options. Choose <b>one</b> course from another focus area <i>other than your own</i> . See Master List.	3.0
Game Exploration. Choose <b>one</b> course from the Master List:	3.0
<b>Game Worlds, Narrative Design, and Society focus</b>	
Focus Required: GAME/ENGL 300X Writing for Games	3.0
Focus Options: Choose <b>Six</b> (at least 2 must be 300 level or above, See Focus Options on Back Page):	18.0
Interdisciplinary Game Options. Choose <b>two</b> courses, <b>one</b> from each focus area <i>other than your own</i> . See Master List.	6.0
Game Exploration. Choose any <b>two</b> courses from the Master List:	6.0
Electives	18.0



# BS in Game Design

## Curriculum Sheet (Game Worlds, Narrative Design, and Society Focus Area)

Sample of Four-Year Sequence of Classes

For a complete list of courses for Humanities, Social Sciences, and Math and Sciences, please consult the General Education approved course list, 2024-25

### Master Game List

#### Art and Interactive Media Design

##### Lower Division

ARTIS 230 - Drawing II

##### Upper Division

ARTIS 308 - Computer Modeling, Rendering and Virtual Photography, ARTIS 323 - Scientific Illustration Principles and Techniques, ARTIS 326 - Illustration and Illustration Software, ARTIS 327 - Illustration as Communication, ARTIS 406X - Introduction to 3D Organic Modeling in ZBrush, ARTIS 407 - Principles of Character Animation, ARTIS 408 - Principles of 3D Animation, ARTIS 431 - Character and Scene Design, ARTIS 432 - Sequential Narrative Drawing, ARTIS 470X - Data Coding and Form, ARTIS 473 - Video Art, ARTIS 475 - Interactive Art, ARTGR 484 2 - 3D Modeling and Augmented Reality, ARTGR 463 - 3D Motion Graphics, GAME/ARTGR 4XX - Analog Game Design and Fabrication

#### Game Computing

##### Lower Division

COM S 227 - Object Oriented Programming, COM S 228 - Introduction to Data Structures, COM S 230 - Discrete Computational Structures, LA 211 - Digital Design Methods for Landscape Architecture, CRP 251 - Fundamentals of Geographic Information Systems

##### Upper Division

COM S 311 - Introduction to the Design and Analysis of Algorithms, COM S 327 - Advanced Programming Techniques, COM S 336 - Computer Graphics, CRP 351 - Intermediate GIS, COM S 437 - Computer Game and Media Programming, CRP 301 - Urban Analytical Methods, CRP 456 - GIS Programming and Automation, CRP 449 - Geodesign: Planning for Sustainable Futures, CYB E 231 - Cyber Security Concepts and Tools (qualifies as UD), EDUC 302 - Principles and Practices of Learning with Technology, S E 309 - Software Development Practices, S E 317 - Introduction to Software Testing, S E 319 - Construction of User Interfaces, S E 339 - Software Architecture and Design, S E 421 - Software Analysis and Verification for Safety and Security

#### Game Worlds, Narrative Design, and Society

##### Lower Division

ANTHR 230 - Globalization and the Human Condition, ART H 280/281 - History of Art I/II, CL ST 273 - Greek and Roman Mythology, CRP 201 - The North American Metropolis, CRP 291 - World Cities and Globalization, CRP 455 - Smart and Sustainable Cities, CRP 320 - Urban Geography, ENGL 275 - Analysis of Popular Cultural Texts, ENGL 302 - Business Communication, ENGL 313 - Rhetorical Web Design, ENGL 314 - Technical Communication, HIST 271 - History of Sports in U.S., PHIL 230 - Moral Theory and Practice, POL S 125 - Democracy and Dictatorship: Introduction to Comparative Politics, RELIG 205/WLC 205 - World Religions, RELIG 215 - Religion and Popular Culture, HIST 284 - Wonders of the World, Global Innovation

##### Upper Division

AF AM 330/SOC 330 - Ethnic and Race Relations, AM IN 322 - Peoples and Cultures of Native North America, ART H 395 - Art and Theory Since 1945, ART H 494/WGS 494 - Women and Gender in Art, ENGL/GAME 3xx - Writing for Games, ENGL 304 - Creative Writing: Fiction, ENGL 315 - Creative Writing: Screenplays, ENGL 330 - Science Fiction, ENGL 411 - Technology, Rhetoric, and Professional Communication, GAME/RELIG 300X - Heroes, Myths, and Games, HIST 304 - Cultural Heritage of the Ancient World, HIST 364 - The Mythic Wild West, HIST 488 - American Stuff, Colonial Times to the Present, PHIL 343 - Philosophy of Technology, PHIL 363 - Metaphysics in Science Fiction and Popular Culture, PHIL 364 - Metaphysics: God, Minds, and Matter, POL S 308X - Video Games and Politics, POL S 334/SOC 334 - Politics and Society, PSYCH 386 - Media Psychology, WGS 430 - Gender and Consumer Culture

	Fall Semester		Spring Semester	
1	DSN S 131 Drawing I	4	COM S 127 Introduction to Programming	3
	GAME 202 Game Design for Serious Games	3	ArtIS 212 Studio Fundamentals: Digital Media	3
	ENGL 150 or General Education	3	GAME/HIST 2XX Game Design and History or Culture	3
	General Education	3	ENGL 150, 250 or General Education	3
	General Education	3	General Education	3
		16	LIB 160 Information Literacy	1
				16
2	GAME 210 Game Career Development	3	Game 211 Gameplay and Game Analysis	2
	ANTHRO 230 Globalization and the Human Condition	3	PHIL 230 Moral Theory and Practice	3
	GAME/RELIG 300X Heroes, Myths, and Games	3	GAME/COM S 2XX Programming for Game Engines	3
	ENGL 250 or General Education	3	ArtIS 308 Computer Modeling, Rendering and VT Photo	3
	General Education	3	General Education	3
		15		14
3	Game 301 Game Design Workshop	3	ArtIS 470X Data Coding and Form	3
	GAME/ENGL 300X Writing for Games	3	CL ST 273 Greek and Roman Mythology	3
	POL S 308X Video Games and Politics	3	Elective	3
	General Education	3	Elective	3
	General Education	3	General Education	3
		15		15
4	Game 401 Game Design Capstone	6	PSYCH 386 Media Psychology	3
	ENGL 304 Creative Writing: Fiction	3	Elective	3
	Elective	3	Elective	3
	PSYCH 101 Intro to Psychology	3	Elective	3
		15	General Education	3
				15
			Total	121

\*Prereq for later courses not covered by Core classes

Gen Eds plus LIB = 40

Core = 30

Focus = 33

Electives = 18

Total = 121

# BS in Game Design

## Curriculum Sheet 202X to Present 121 credits required

Student Name: \_\_\_\_\_  
Student ID# \_\_\_\_\_

University Requirement	6.0
<a href="#">International Perspectives</a>	
<a href="#">US Diversity</a>	

Communications	10.0
ENGL 150 (C or better) Critical Writing and	3.0
ENGL 250 (C or better) Written, Oral, Visual and	3.0
Select 1 course from COMST 101, 102, SP CM 110, 212	3.0
LIB 160	1.0

Humanities	6.0
See approved list of humanities on the back page	3.0
See approved list of humanities on the back page	3.0

Social Sciences	6.0
See approved list of social sciences on the back page	3.0
See approved list of social sciences on the back page	3.0

Mathematical, Physical & Biological Science	6.0
See approved list of math and sciences on the back page	3.0
See approved list of math and sciences on the back page	3.0

Additional General Education Courses	6.0
300-400 Level (See approved list of Gen Ed on the back page)	3.0
300-400 Level (See approved list of Gen Ed on the back page)	3.0

Game Design Core	30.0
COM S 127 Introduction to Programming	3.0
DSN S 131 Drawing I	4.0
ArtIS 212 Studio Fundamentals: Digital Media	3.0
GAME 210 Game Career Development	2.0
GAME 211 Gameplay and Game Analysis	3.0

Game Design Core (continued)	
Choose Two: GAME 202 Game Design for Serious Games, HIST 201 History of Western Civilization 1 or HIST 202 History of Western Civilization 2, GAME/HIST 200X Game Design and History, GAME/HIST 200X Game Design and Cultures	6.0
GAME 301 Game Design Workshop	3.0
GAME 401 Game Design Capstone	6.0

Choose <u>One</u> Game Design Focus Area:	33.0
<b>Art and Interactive Media Design focus</b>	
Focus Required: ArtIS 230 Drawing II, ArtIS 308 Computer Modeling and Virtual Photography, ArtIS 407 Principles of Character Animation	9.0
Focus Options: Choose <b>Four</b> (at least 2 must be 300 level or above, See Focus Options on Back Page):	12.0
Interdisciplinary Game Options. Choose <b>two</b> courses, <b>one</b> from each focus area <i>other than your own</i> . See Master List.	6.0
Game Exploration. Choose any <b>two</b> courses from the Master List:	6.0
<b>Game Computing focus</b>	
Focus Required: Game/Com S 2XX Programming for Game Engines, COM S 227 Object Oriented Programming, COMS 228 Introduction to Data Structures, COM S 230 Discrete Computational Structures, COM S 311 Introduction to the Design and Analysis of Algorithms, COM S 327 Advanced Programming Techniques, COM S 336 Intro to Computer Graphics, COM S 437 Computer Game and Media Programming	24.0
Focus Options: Choose <b>one</b> (must be 300 level or above, See Focus Options on Back Page):	3.0
Interdisciplinary Game Options. Choose <b>one</b> course from another focus area <i>other than your own</i> . See Master List.	3.0
Game Exploration. Choose <b>one</b> course from the Master List:	3.0
<b>Game Worlds, Narrative Design, and Society focus</b>	
Focus Required: GAME/ENGL 300X Writing for Games	3.0
Focus Options: Choose <b>Six</b> (at least 2 must be 300 level or above, See Focus Options on Back Page):	18.0
Interdisciplinary Game Options. Choose <b>two</b> courses, <b>one</b> from each focus area <i>other than your own</i> . See Master List.	6.0
Game Exploration. Choose any <b>two</b> courses from the Master List:	6.0
Electives	18.0

# BS in Game Design

## Curriculum Sheet (Combined Focus Areas)

Sample of Four-Year Sequence of Classes

For a complete list of courses for Humanities, Social Sciences, and Math and Sciences, please consult the General Education approved course list, 2024-25

### Master Game List

#### Art and Interactive Media Design

##### Lower Division

ARTIS 230 - Drawing II

##### Upper Division

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#### Game Computing

##### Lower Division

COM S 227 - Object Oriented Programming, COM S 228 - Introduction to Data Structures, COM S 230 - Discrete Computational Structures, LA 211 - Digital Design Methods for Landscape Architecture, CRP 251 - Fundamentals of Geographic Information Systems

##### Upper Division

COM S 311 - Introduction to the Design and Analysis of Algorithms, COM S 327 - Advanced Programming Techniques, COM S 336 - Computer Graphics, CRP 351 - Intermediate GIS, COM S 437 - Computer Game and Media Programming, CRP 301 - Urban Analytical Methods, CRP 456 - GIS Programming and Automation, CRP 449 - Geodesign: Planning for Sustainable Futures, CYB E 231 - Cyber Security Concepts and Tools (qualifies as UD), EDUC 302 - Principles and Practices of Learning with Technology, S E 309 - Software Development Practices, S E 317 - Introduction to Software Testing, S E 319 - Construction of User Interfaces, S E 339 - Software Architecture and Design, S E 421 - Software Analysis and Verification for Safety and Security

#### Game Worlds, Narrative Design, and Society

##### Lower Division

ANTHR 230 - Globalization and the Human Condition, ART H 280/281 - History of Art I/II, CL ST 273 - Greek and Roman Mythology, CRP 201 - The North American Metropolis, CRP 291 - World Cities and Globalization, CRP 455 - Smart and Sustainable Cities, CRP 320 - Urban Geography, ENGL 275 - Analysis of Popular Cultural Texts, ENGL 302 - Business Communication, ENGL 313 - Rhetorical Web Design, ENGL 314 - Technical Communication, HIST 271 - History of Sports in U.S., PHIL 230 - Moral Theory and Practice, POL S 125 - Democracy and Dictatorship: Introduction to Comparative Politics, RELIG 205/WLC 205 - World Religions, RELIG 215 - Religion and Popular Culture, HIST 284 - Wonders of the World, Global Innovation

##### Upper Division

AF AM 330/SOC 330 - Ethnic and Race Relations, AM IN 322 - Peoples and Cultures of Native North America, ART H 395 - Art and Theory Since 1945, ART H 494/WGS 494 - Women and Gender in Art, ENGL/GAME 3xx - Writing for Games, ENGL 304 - Creative Writing: Fiction, ENGL 315 - Creative Writing: Screenplays, ENGL 330 - Science Fiction, ENGL 411 - Technology, Rhetoric, and Professional Communication, GAME/RELIG 300X - Heroes, Myths, and Games, HIST 304 - Cultural Heritage of the Ancient World, HIST 364 - The Mythic Wild West, HIST 488 - American Stuff, Colonial Times to the Present, PHIL 343 - Philosophy of Technology, PHIL 363 - Metaphysics in Science Fiction and Popular Culture, PHIL 364 - Metaphysics: God, Minds, and Matter, POL S 308X - Video Games and Politics, POL S 334/SOC 334 - Politics and Society, PSYCH 386 - Media Psychology, WGS 430 - Gender and Consumer Culture

	Fall Semester		Spring Semester	
1	DSN S 131 Drawing I	4	COM S 127 Introduction to Programming	3
	GAME 202 Game Design for Serious Games	3	ArtIS 212 Studio Fundamentals: Digital Media	3
	ENGL 150 or General Education	3	GAME/HIST 2XX Game Design and History or Culture	3
	General Education	3	ENGL 150, 250 or General Education	3
	General Education	3	General Education	3
		16	LIB 160 Information Literacy	1
				16
2	GAME 210 Game Career Development	3	Game 211 Gameplay and Game Analysis	2
	Focus Required or Focus Option or Interdisciplinary	3	Focus Required or Focus Option or Interdisciplinary	3
	Focus Required or Focus Option or Interdisciplinary	3	Focus Required or Focus Option or Interdisciplinary	3
	ENGL 250 or General Education	3	Focus Required or Focus Option or Interdisciplinary	3
	General Education	3	General Education	3
		15		14
3	Game 301 Game Design Workshop	3	Focus Required or Focus Option	3
	Focus Required or Focus Option	3	Focus Required or Focus Option or Game Exploration	3
	Focus Required or Focus Option or Game Exploration	3	Elective	3
	General Education	3	Elective	3
	General Education	3	General Education	3
		15		15
4	Game 401 Game Design Capstone	6	Focus Option	3
	Focus Option or required	3	Elective	3
	Elective	3	Elective	3
	General Education	3	Elective	3
		15	General Education	3
				15
			Total	121

Gen Eds plus LIB = 40  
 Core = 30  
 Focus = 33  
 Electives = 18  
 Total = 121

## Appendix B. Letters of Support

# IOWA

### College of Liberal Arts and Sciences

Office of the Dean

University of Iowa

240 Schaeffer Hall

Iowa City, Iowa 52242-1409

Phone: 319-335-2625 | Fax: 319-335-3755

Email: [clas@uiowa.edu](mailto:clas@uiowa.edu) | Web: [clas.uiowa.edu](http://clas.uiowa.edu)

28 August 2023|

Dear Associate Dean McKilligan,

Thank you for sharing the proposal for the new Game Design Major to be offered by the Iowa State University College of Design in collaboration with the colleges of Liberal Arts and Sciences, Engineering, Human Sciences, Business, and Agriculture and Life Sciences. I have shared the proposal with a number of stakeholders on the University of Iowa campus.

The proposal for this new academic major sets out an innovative and interdisciplinary program for students to gain conceptual and practical skills for the emerging field of game design.

This curricular initiative builds on areas of strength in a number of Iowa State University's colleges and programs, in ways that will be directly relevant both to a broad-based education and for students' career planning. We wish you the best as you embark on this new pathway for student success at your institution.

Because the University of Iowa has complementary academic areas of strength and interest pertinent to the Game Design Major as it is currently conceptualized, we will be eager to learn of the progress of this initiative.

Sincerely,



Roland Racevskis  
Associate Dean for Arts & Humanities  
[roland-racevskis@uiowa.edu](mailto:roland-racevskis@uiowa.edu)  
319-467-1984

Aug. 23, 2023

To Whom It May Concern

With this letter, we write to express our support for the proposed new Bachelor of Science Major in Game Design at Iowa State University. Upon review of the proposal, we appreciate its interdisciplinary nature, its timeliness and the diverse outcomes and employment opportunities the program seems likely to produce.

We note that we do have a current course in our curriculum, cross-listed between English, Computer Science and Communications and Media called Video Game Design. The course is also an option in UNIFI, our general education program. It was our hope that in the long-term we might be able to offer this course as the first in a short sequence of courses, but we do not envision the creation of a new major in this area for the foreseeable future and have not yet been able to offer it due to staffing constraints.

In short, we offer our enthusiastic support for this program and appreciate its breadth, depth and creativity.

Sincerely,



Jennifer Cooley, Ph.D.  
Associate Dean College of Humanities, Arts and Sciences  
University of Northern Iowa

# IOWA STATE UNIVERSITY

Department of Community and  
Regional Planning  
College of Design  
Ames, Iowa 50011-3091  
515 294-2557  
FAX 515 294-1440  
<http://www.design.iastate.edu>

October 24, 2023

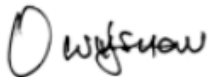
The Community and Regional Planning (CRP) Department supports the proposed Game Design major.

The connection between games and community and regional planning is not always obvious. However, the CRP Department sees serious games as an effective way to promote public engagement among people who would not otherwise participate in the planning process. For instance, Associate Professor Alenka Poplin, one of the champions of ISU game major, research focuses on developing inclusive digital serious geogames that can enable underrepresented and often marginalized residents to express their ideas, issues, and wishes related to the environment in which they live. She was a core team member of Game2Work, a \$600K, 3-year ISU Presidential Interdisciplinary Research Initiative (PIRI) funded project to explore the future of work through the rapid prototyping and evaluation of serious games for STEM education. Her course, "Geogames for Civic Engagement," is very popular among CRP and non-CRP students.

We, therefore, see potential synergies between the proposed program and our Bachelor of Community and Regional Planning program. We encourage our students to develop creative ways of engaging the public in the planning process. The proposed major enables our students to explore and expand their expertise in city building and the planning process.

We look forward to having our students take courses in the proposed major and explore opportunities to create a path for a double major. Don't hesitate to contact me with questions or further information about our courses.

Sincerely,



Francis Owusu, Ph.D.  
Professor and Chair  
Department of Community & Regional Planning  
Iowa State University  
College of Design  
Phone: (515) 294-7769  
E-mail: [fowusu@iastate.edu](mailto:fowusu@iastate.edu)



October 30, 2023

Alenka Poplin and the ISU Game Design Major Committee

**Subject: ISU Game Design Major as a Degree of the Future**

Dear Colleagues,

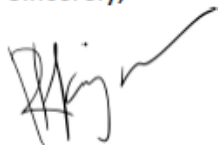
On behalf of the Department of Computer Science, I am writing to support the recently proposed ISU game design major as a degree of the future. The proposal outlines multiple tracks, one of which is focused on game computing, designed to prepare students for diverse career paths in the field.

The curriculum includes several courses in the Computer Science department. We will work closely with the interdisciplinary major curriculum committee to make these courses available to students enrolled in the Game Design major. The proposed tenure-track faculty hire in computer science will also help ensure that we have expertise in this area within the department and the necessary teaching capacity.

There are several aspects of the game computing track that are particularly exciting. The track covers the fundamental courses in computer science. Additional upper-level Computer Science courses may be included in the comprehensive list of focus-area classes, thereby providing game computing majors with a wider range of options. We believe there will be interest from computer science majors. In particular, students in the Game Computing major may be able to get a double major in the BA in Computer Science, as long as the general education requirements are covered.

Should you require additional information, please do not hesitate to contact me via email or telephone.

Sincerely,



Hriday Rajan  
Kingland Professor and Chair  
Department of Computer Science

Email: [hriday@iastate.edu](mailto:hriday@iastate.edu)  
Phone: +1-515-294-6168  
WWW: <https://cs.iastate.edu/hriday/>

# IOWA STATE UNIVERSITY

OF SCIENCE AND TECHNOLOGY

College of Liberal Arts and Sciences

Department of Philosophy and Religious Studies

402 Catt Hall

Ames, IA 50011-1306

Tel 515-294-7276

October 9<sup>th</sup>, 2023

Full disclosure, I am not a gamer. The one game I play is chess and so I am seeing this new major through the eyes of a relative outsider. And what I see is a major that I find extremely interesting and well thought out. There is a clear rationale for the new Game Design major. Gaming is popular and ever growing and the platforms for gaming are common and, quite literally, in the hands of most people. The proposal points out an already strong gaming community at ISU, including a club with about 500 members.

The new major brings together at least four ISU colleges, and it is noteworthy that each of the four colleges plays a significant role in the major. The three main tracks in the major are well thought out and very sensibly designed. It is clear how each track supports the various stages and/or aspects of game development, including initial drafting and developing, the technical knowhow, and the knowledge of humanities disciplines and help make a game believable and coherent while, at the same time, being creative.

It is clear that game design provides a platform for interdisciplinary work at a very high level. The major is well designed and, even for a non-gamer, it looks attractive and exciting.

Heimir Geirsson

Digitally signed by Heimir  
Geirsson  
Date: 2023.10.09 14:30:18 -05'00'

Heimir Geirsson  
Chair, Philosophy and Religious Studies



11 October 2023

Professor Jeffery Wheatley  
Assistant Professor of Religion  
Department of Philosophy & Religious Studies  
Iowa State University  
Catt Hall 411

Dear Prof. Wheatley,

It is my great pleasure to write this letter of support for the proposed Game Design Major. This interdisciplinary major promises to meet with a strong and positive reception among prospective students, has already generated great excitement on campus, and is bringing teams of faculty together from disciplines across campus. The proposed major would be a tremendous addition to our university's curriculum and should lead to an intellectually challenging and personally rewarding career path for our students.

The History faculty is especially supportive of this initiative. One of our own, Prof. Jeremy Best, is on the core development team and other History faculty members have expressed an interest in teaching in the major through existing courses and contemplating developing new offerings. There is a nice buzz about the work you and your colleagues are doing, and I am very impressed about how you have reached out to units across ISU for ideas, feedback, and support.

You can count on support for the Game Design Major from the Department of History as you go forward with the proposal.

Please feel free to contact me if you need further information or have any questions,

Sincerely,



Simon Cordery  
Professor and Chair  
scordery@iastate.edu

# IOWA STATE UNIVERSITY

Graphic Design  
College of Design  
715 Bissell Road  
Ames, Iowa 50011-1066  
515-294-6743  
design.iastate.edu

October 13, 2023

To Whom It May Concern,

The Department of Graphic Design wholeheartedly supports the proposed Game Design Major.

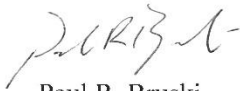
We recognize the considerable effort being made across departments, and colleges, to collaboratively build this program. This cooperation and interdisciplinarity is an excellent reflection of the nature of game design itself, which I think bodes well for the success of this Major. This proposed degree will allow faculty and students in the College of Design, and outside of it, to participate in interdisciplinary studios, engaging with faculty and departments throughout the University community.

We are also proud to see our colleague Associate Professor Anson Call help lead this effort and see clear opportunities for the department to open existing courses to the new major, particularly, as we develop degrees proposals in UX and Illustration and related courses.

We fully support this effort.

Please feel free to contact me if you have any questions or need further information.

Thank you,



Paul R. Bruski  
Associate Professor & Chair

bruski@iastate.edu

# IOWA STATE UNIVERSITY

October 23, 2023

Anson Call  
Associate Professor, Graphic Design  
158 College of Design

Department of Art and Visual Culture  
College of Design  
715 Bissell Road  
Ames, Iowa 50011-3091  
515 294-6743  
FAX 515 294-2725  
<http://www.design.iastate.edu>

RE: Game Design degree program

Dear Anson,

Together with my colleagues in the Department of Art & Visual Culture, I would like to express my strong support for the new degree in Game Design.

At our faculty meeting on 20 October, 2023, the AVC faculty voiced their support and enthusiasm for this new program and for the involvement of AVC courses (ARTIS and ARTH) in the program's degree paths. We welcome the opportunity to collaborate with our colleagues across the institution on this interdisciplinary "degree of the future" and are excited about helping to bring this program to our students at ISU.

Please let me know if I can assist you, or the interdisciplinary team working on the proposal, in any way to accomplish this important addition to our curriculum and to advance the new program's growth and success.

With every best wish,



Sarah R. Kyle, PhD  
Professor and Chair

October 30, 2023

To Whom It May Concern:

With this letter, I write to express my strong support for the proposed new cross-departmental Game Design major spanning multiple colleges. I had a chance to review the proposal and to meet with the project team to discuss collaboration opportunities. The Department of English is interested in offering a new *Writing for Games* course to support the proposed degree, which is in addition to these supporting courses we would continue to offer:

ENGL 275 - Analysis of Popular Cultural Texts  
ENGL 302 - Business Communication  
ENGL 313 - Rhetorical Web Design  
ENGL 314 - Technical Communication  
ENGL 304 - Creative Writing: Fiction  
ENGL 315 - Creative Writing: Screenplays  
ENGL 330 - Science Fiction

I fully support this proposal.

Sincerely,



Volker Hegelheimer  
Professor and Chair  
Department of English

**From:** Frank Heffner <[Frank.Heffner@witcc.edu](mailto:Frank.Heffner@witcc.edu)>  
**Sent:** Thursday, September 14, 2023 10:14 AM  
**To:** ~~McKilligan~~, Seda [DSN] <[seda@iastate.edu](mailto:seda@iastate.edu)>  
**Cc:** Poplin, Alenka [C R P] <[apoplin@iastate.edu](mailto:apoplin@iastate.edu)>  
**Subject:** Replying to Your Game Design Program Contact at WITCC

Seda:

Jennifer Conley forwarded me your email about your upcoming Game Design program at ISU.

One of my instructors (with industry professional experience) and I would be happy to review your proposal and explore collaboration opportunities with ISU.

Here is a link to our program web site with some information about our program and some of the recent video games developed by students in our program if you are interested. Two of our recent graduates are now employed full-time in the cinematics industry.

[Video Game Design Education | WITCC Video Game Design Online | United States \(witccvgdonline.com\)](http://witccvgdonline.com)

My Video Game Company, ~~Mytopia Gameware~~ Institute, was founded in 1978 and is now one of the oldest extant Video Game publishers in the world. MGI now provides internship opportunities for students in our program. Among our recent accomplishments was the development of a video game for the Lewis & Clark Interpretive Center in Sioux City, IA that allows visitors to learn more about the history of the Lewis & Clark expedition in our area.

[About Mgi | Witcc Video Game Design Online | Sioux City \(witccvgdonline.com\)](http://witccvgdonline.com)

We recently launched an eSports program and I am currently developing an eSports Management Online program for WITCC.

|  
Regards,

Dr. Frank Heffner  
Video Game Development Online Program Director  
Western Iowa Tech Community College  
Sioux City, IA  
712-274-8733, ext. 1426

Greetings Seda and Dr. Poplin,

My colleague Weston Miller sent me a copy of your email regarding a new Game Design major at Iowa State.

My name is Kevin Grems and I am the creator and instructor/coordinator of the original Game Design curriculum at Iowa Lakes Community College when it was first offered. I taught computer programming and game design classes at ILCC for around 8 years. Currently, I work full time as a software developer and continue teaching Game Design courses at ILCC part time.

I wanted to express my interest in your efforts to pursue a four-year degree option and offer any advice or opinions you might need as your program gets up and running. In the meantime, I look forward to reviewing the proposal PDF that Weston had forwarded along to me.

Best,

**Kevin Grems**  
Adjunct Instructor  
Iowa Lakes Community College  
[kgrems@iowalakes.edu](mailto:kgrems@iowalakes.edu)  
712.223.1191

## Appendix C. Summary of Discussions with ISU Departments

### Computer Science | August 24, 2023

Present: Seda McKilligan, Amy Slagell, Hriday Rajan, Jeremy Best, Jeffrey Wheatley, Anson Call, Alenka Poplin, and James Lathrop.

Notes by Jeremy Best

During this meeting, the GDM team presented the proposed curriculum asking for specific feedback from Rajan and Lathrop regarding the Game Computing courses. Lathrop and Rajan came to the meeting with specific concerns about the courses which the GDM team had identified for the program. The GDM team responded that we welcome this feedback and want the program to reflect Computer Science's expectations. There was some discussion about whether students in Game Computing would be prepared for game design programming jobs and the GDM team agreed that those students would need to be steered toward more intensive Computer Science study.

Rajan and Lathrop agreed that with Lathrop's input the Game Computing coursework could be made to fit the level of computer science knowledge students gained from the Computer Science B.A. degree. Rajan noted that computer science courses could be expanded or new sections added to accommodate enrollments from the GDM.

Overall, the impression from Rajan was that he supported the proposal and saw it as a positive collaboration for his department. The GDM planned a subsequent meeting with Lathrop to revise the Game Computing Focus Area to suit Computer Science's standards. It was our understanding that once those revisions were made, Rajan was prepared to share a letter of support for the proposed major.

They support the program and ask Jim to talk to the GDM separately, which we did. We discussed the order of the courses with Jim Lathrop. He provided a graphical visualization of the courses and in which order do they need to be taught. The GDM team then followed this suggestion and designed the curriculum according to the specific suggestions/instructions that came from the Computer Science Department.

### Whitehead Rob [DSN], COD associate dean for academic programs

Present: Seda McKilligan, Anson Call, Alenka Poplin

The GDM team discussed the proposal, ideas behind it and the interdisciplinarity of the approach to the Curriculum. We discussed the three main focused areas and presented them to the newly appointed COD associate dean for academic programs Rob Whitehead. He gave a few suggestions on how to improve the proposal and the curriculum. He ended up saying how much he likes the proposal and the Curriculum and fully supports it.

## LAS Department chairs | September 12, 2023

Present: Seda McKilligan, Simon Cordery (History), Volker Hegelheimir (English), and Heimir Geirsson (Philosophy and Religious Studies), Jeffrey Wheatley, Alenka Poplin

Summary by Jeffrey Wheatley

\*\*\*\*\*

- **Define game design.** Cordery addressed the issue of the document/proposal not including a definition of game design.
- **Online question:** Cordery brought up the online question. Seda noted how the major can't be fully online to start but that we "shouldn't close the door on online students" and that we should let "student demand guide us." Heimir noted the importance of in-person collaboration.
- **"Program" and "Director":** We need to be mindful of using these terms and should perhaps remove "program" from the proposal even though our goal is program or department. Director should be replaced by "Coordinator." They have very specific meanings and this is not yet going to be a program.
- **Project management and other skills:** Adding those was suggested by Geirsson.
- **Future English Course on Games:** Hegelheimir expressed support for eventually creating an English course that has games in title or as a core component once the major is up and running.
- **English courses/major on "Technical Communication" and UX:** Hegelheimir noted that English has a major and multiple courses on technical communication, which includes emphasis on user interfaces and user experiences. [Technical Communication • Iowa State University Department of English • Iowa State University \(iastate.edu\)](#)
- **Learning Communities:** Hegelheimir suggested learning communities so that even when GD students are in their gen ed courses their cohort remains intact. Cordery agreed with this notion and also Jeremy leading this effort.
- **AI:** Hegelheimir, who works on AI, suggests we include more on AI.

Overall, the faculty were supportive of the major, especially how the "cross-pollination" across fields would make it a unique offering. They could see the relevance of their courses for providing content, imagination, and skills to game designers.

## COD department chairs | September 13, 2023

Present: Francis Owusu (Community and Regional Planning), Paul Bruski (Graphic Design), Sarah Kyle (Department of Art & Visual Culture), Anson Call, Alenka Poplin

Summary by Alenka Poplin

- **Design ethics and graphic design:** Include more courses from this area was suggested by Bruski. Additionally check UX design classes and RGR graphic design. Also 484 UX design.
- **Type of games.** Clarify what kind of games do you have in mind in the proposal. What is the intellectual basis for this program? Study industry and their needs and check other programs was suggested by Owusu. We shared what we have done so far in this respect.
- **The number of enrolled students.** Bruski questioned the number of students enrolled, finding these numbers very high. Owusu suggested checking other institutions and their enrollment. He mentioned Institutional research that every public university has. We could contact them and ask about their projections for enrollment in the future.



- **Art history.** Kyle noticed we didn't include classes on art history. We should go through the list and add them to the list.
- **Specifics about AVC classes:**
  - 308 has a pre-req 212 which is also pre-req for 406. Anson will talk to Austin and John who are teaching this class.
  - 323, 326, 327 are taught by Kim Moss. Anson will share our proposal with her and discuss the capacities to accommodate our students.
  - 406x Intro to 3D modelling p discuss with the instructor. It can/should be included on our list of classes.
- **Director of undergrad education.** Kyle suggested talking with Theresa Paszke who is currently the director. Anson will take this on.
- **CRP courses.** Owusu suggested including some in programming, CRP 251, and some others, Alenka can choose.

### Meeting David Schwartz | Rochester Institute of Technology | September 19, 2023

<https://www.rit.edu/directory/disvks-david-schwartz>

#### Director of the School of Interactive Games and Media

School of Interactive Games and Media

Golisano College of Computing and Information Sciences

Present: Jeremy Best, Alenka Poplin | Notes by Alenka

#### Comments & Discussion

Language and definitions:

- Define game design
- Define game design thinking or not use it
- Use instead utilize
- First page: sponsorship, industry
- Training vs education: replace training with education or work force development

Competitive landscape:

- Explore the offer of similar education in Iowa
- Explore the employment opportunities, economic landscape: research labs, research park, Workiva, engineering, construction, architecture
- Employment opportunities: not only in game industry, but much broadly advertising, webdesign and development, entertainment, animation, film, TV, marketing, movies, product development, consulting

Internships:

- Be clear what you mean by that. Do not overpromise

Noticed we don't have courses for:

- Web design
- Mobile apps and development

These courses are needed & very useful for the skills needed in the job market.

Students need to learn how to use: C++ and CSharp (Java is not optimal)

Useful websites:

- Entertainment Association. Theesa.com/2023-essential-facts
- Gamedevmap.com

- Usnews.com
- Unity.com
- igda.org
- therookies.com/schools
- Docksunrealengine.com

Discussed the name change to Game Design and Development

**Steve Jacobs | Rochester Institute of Technology | September 19, 2023**

<https://www.rit.edu/directory/sxjics-stephen-jacobs>

**Professor**

School of Interactive Games and Media

Golisano College of Computing and Information Sciences

Present: Jeremy Best, Alenka Poplin | Notes by Jeremy Best

### **Comments & Discussion Summary**

Emphasized importance of understanding how the program will be run and what is owed to it by various other entities on campus.

#### *Revisions to Proposal*

Clarify in New Courses prologue which courses are “new” and which already exist (POLS 308X)

Existing programs (1e)

- Elaborate on cybersecurity offerings, would Cybersec folks be willing to offer a cybersecurity service level course?
- Replace the existing Music Technology description so it emphasizes the technical aspects of the courses over composition
- Human Computer Interaction and Interface (see job descriptions note below)

Wherever possible, emphasize the goal of equipping students with skills for collaboration, for generalists

In Section 1g, make the second and third hire more concrete in their skills. Suggested to make second COD hire a user interface, visualization position

Retitle the Art pathway to deemphasize “ART” (students are not going to be getting a “real” art degree”)

- more broadly, trim out unproductive advanced art courses in visual arts
- Perhaps rename it around “Content Creation” or similar?

#### *Revisions to Curriculum*

Format Year 1 so it is EXPLICIT which is the temporary curriculum and which is the permanent curriculum

- Suggested that GAME 211 and GAME 202 be switched

Retitle PD Course: “Game Industry Orientation” or similar

(Konstantine Papangelis, another RIT faculty we met, suggested moving Game Engines course earlier in curriculum)

EDUC 302, SE 317, SE 319 would be more appropriate in 3<sup>rd</sup> year?

Note for readers that the breadth of courses in this initial offering is because of reliance on other departments to offer courses we need, future plan to develop more narrow course list; similarly uncertainty about offerings available (strongly endorsed adding Art History as optional courses)

In general, be careful about overpromising course offerings. Keep list tight and don't commit to more than can manage.

#### *Other Suggestions*

Develop an inclusive list of software needs including costs and open-source alternatives

Create an "off-book", off curriculum list of areas of course offerings for future (web development, cybersecurity, game worlds, business support, etc.)

Move toward formalized articulation agreements (guarantees of course offerings, etc.)

**Sept 21<sup>st</sup>, 2023. Anson Call meeting with Teresa Paske, Emily Morgan, Kimberly Moss, and Johnny DiBlasi, representing Art and Visual Culture.**

#### Notes by Anson Call

- Suggestion that ArtIS 212 could replace or compliment our requirement in the first year of DSN 232
- Asked that we provide in our documentation descriptions of the focus areas, other than just their titles.
- ArtIS 308 does not have ArtIS 212 as its pre requisite
- In 2<sup>nd</sup> year, suggestion to offer ArtIS 406X (Zbrush to 3D printing) or ArtIS 308.
- Currently ArtIS 230 Drawing 2 is very full, and would need additional staffing.
- ArtIS 337 Applications of Scientific Illustration Techniques has serious Game Design associated assignments.
- Comment that Game Worlds, Narrative Design, and Society appears to be too unstructured. Recommends at least one required course in 2<sup>nd</sup> year.
- Add Art History courses. Here is the list provided by Emily Morgan:
  - In re Art History courses to add to the menu for the Game Design major, I suggest the following (all are 3 cr. and none have prerequisites):
  - ArtH 280 History of Art 1
  - ArtH 281 History of Art 2
  - ArtH 382 Art and Architecture of Asia
  - ArtH 383 Greek and Roman Art
  - ArtH 384 Art of Islam
  - ArtH 385 Renaissance Art
  - ArtH 386 American Art to 1945
  - ArtH 395 Art and Theory Since 1945
  - ArtH 396 History of Photography
  - ArtH 489 History of Comics (NB the instructor, John Cunnally, is set to retire, so the future of this class would be contingent on someone taking it on)
  - ArtH 494 Women and Gender in Art
- Suggestion for Art History and Game Worlds, Narrative Design, and Society that it represent a balance between "Western Art" and "Non Western Art". Emily decries those categories, but said that it is at least a framework in which to discuss it.
- DiBlasi suggested adding his ArtIS 470X course, Data Coding and Form
- Emily Morgan suggested adding ArtIS 305 Collage, assembly, and the found object.

- Teresa questioned whether painting should be a part of the list, others supported it.
- Finally, Emily suggested for recruitment to giving a formal presentation to Dsn 183 as many students are deciding their future there.

**Sept 14<sup>th</sup>, 2023. Meeting with COD dept chairs, Sarah Kyle, Paul Bruski, Francis Owusu**

**E-Mails**

Anson and Alenka,

Thanks for meeting with me about the Game Design degree thus far. Below are a few comments I have to follow up.

1. If there are ArtGr courses you think are relevant to Game Design, but we have some sort of pre-req (most often Junior/Senior standing in Graphic Design, etc), please let me know, I think we should be taking a closer look at these is GD anyway.
  - a. Courses such as ArtGr 463 3D Motion Graphics (Anson) and ArtGr 484 state "Prereq: Undergraduate: Junior or senior standing in the graphic design program. Graduate: Graduate enrollment in College of Design."
  - b. Many of our Option Studios may be useful (GD Methodology, UX Design, Illustration, 3D Modeling & Augmented Reality, etc)
  - c. Maybe we could have other pre-req pathways such as ArtIs 212 or 308 for some courses?
2. Wouldn't the Graphic Design History courses (ArtGr 387, 388) also be relevant?
3. I'm not sure how you see a UX Design degree or Illustration intersecting, or how you even plan for that given their preliminary states.
4. I wonder at how heavily the CoD pathway is almost entirely ArtIS
5. Would there be the possibility of an DsnS 546 Game Design studio?
6. I would heavily agree with Francis on talking more expansively about Game Design outside of Iowa and the Midwest in the program description.

Best  
Paul

**Comment:** For simplicity we have removed prepreqs, but this has discussed extensively by the leadership team. We feel it is important to address this at the advisory level, as well as by curriculum committees when these issues arise.

\*\*\*\*\*

Hi, All,

I attended a meeting yesterday with Francis and Paul. Alenka Poplin and Anson Call (copied here), members of the inter-collegiate committee building the Game Design major proposal, called the meeting to share with us the current proposal and to seek feedback, especially since a number of our courses have the possibility of becoming requirements in the new major.

The proposal is exciting and the new major will address both student demand and interest and also provide a unique opportunity for interdisciplinary collaboration. They have my support, along with that of our colleagues in CRP and GD.

Because our courses, including 3 dual-listed ARTIS/BPMI courses (+ ZBrush, potentially), would be essential to the major, I've asked Anson & Alenka to share the proposal draft with you for feedback (Teresa, please discuss with

your Cabinet; Emily, Alenka & Anson would like feedback on additional ARTH courses; Kim, possible impacts to BPMI – feasibility for this collaboration – should be evaluated and discussed with you).

I've also asked Anson & Alenka to join our faculty meeting (either Sept. 29 or Oct. 18 – we haven't nailed that down, yet). This group may want to convene with our colleagues to discuss the proposal prior to bringing it to the wider AVC community.

Please share your thoughts.

If we need a meeting together with Alenka & Anson before discussion with the rest of the AVC community, I'd like to ensure we schedule it soon. The proposal will need to move to curriculum committees and up the ranks of Senate, BoR, etc., this academic year.

Thank you!

All best,  
Sarah

From Paul Bruski | September 14, 2023

Thanks for meeting with me about the Game Design degree thus far. Below are a few comments I have to follow up.

7. If there are ArtGr courses you think are relevant to Game Design, but we have some sort of pre-req (most often Junior/Senior standing in Graphic Design, etc), please let me know, I think we should be taking a closer look at these is GD anyway.
- d. Courses such as ArtGr 463 3D Motion Graphics (Anson) and ArtGr 484 state "Prereq: Undergraduate: Junior or senior standing in the graphic design program. Graduate: Graduate enrollment in College of Design."
- e. Many of our Option Studios may be useful (GD Methodology, UX Design, Illustration, 3D Modeling & Augmented Reality, etc)
- f. Maybe we could have other pre-req pathways such as ArtIs 212 or 308 for some courses?
8. Wouldn't the Graphic Design History courses (ArtGr 387, 388) also be relevant?
9. I'm not sure how you see a UX Design degree or Illustration intersecting, or how you even plan for that given their preliminary states.
10. I wonder at how heavily the CoD pathway is almost entirely ArtIS
11. Would there be the possibility of an DsnS 546 Game Design studio?
12. I would heavily agree with Francis on talking more expansively about Game Design outside of Iowa and the Midwest in the program description.

Best  
Paul

## Appendix D. External Reviews

# Review: ISU's Game Design Program Proposal

David I. Schwartz, PhD  
Director and Associate Professor  
School of Interactive Games and Media  
B. Thomas Golisano College of Computing and Information Sciences  
Rochester Institute of Technology  
Rochester, New York 14623  
[igm.rit.edu](http://igm.rit.edu)  
[games.rit.edu](http://games.rit.edu)

## 1 Who am I? What's my Context?

To help ISU understand my perspective, I provide the context in this section below.

### 1.1 Bio

I taught first-year engineering at the University of Buffalo (mainly software tools and problem-solving). I published two books (Unix and Maple) simultaneously with my dissertation, which led me to Cornell University's Department of Computer Science as an introductory programming lecturer in 1999. However, once I realized the connection between engineering, computing, and my background in music, I co-founded the Game Design Initiative at Cornell, which continues to this day. Realizing I wanted a path to tenure, I moved to RIT, teaching and researching a breadth of computing, software development, and game design topics. Add in nine years of university administration, and I have taught and served in a wide-ranging capacity for twenty years with several thousand students across three universities.

### 1.2 Recruiting

I feel lucky to have witnessed and participated in the evolution of the academic game field. And I've observed and experienced much of the growing pain. In the early 2000s, recruiters, parents, students, and academics witnessed burgeoning game degrees and related programs.

I can attest that all students have clearer pathways and advice; the industry sees value in various degrees. Despite these improvements, many of the initial issues remain for some:

- Parents distrust a game degree.
- Students misunderstand game design and game development.
- Students do not realize the difficulty of making a game.
- Everyone is adjusting their expectation levels.

Below, I delve into some of these issues even further.

### 1.3 Competition

The [game industry](#) is smaller than many realize. Despite the listing on [gamedevmap.com](#), if the game industry had many entry-level positions, we wouldn't see many articles and events about breaking into the industry. There's be 97% placement in whatever jobs students want, and this process of program development, teaching, student work, and placement wouldn't be so rough. University administrators may not realize the effort it takes to recruit a recruiter. I would easily double the size of Career Services representatives for all academic game groups if I could.

When confronted about my perspective, I give this reasoning:

- Depending on one's perspective, there are [367 "game schools."](#) or thousands if we count every degree or certificate across computing, art, writing, and more.
- Say 1,000 schools graduate an average of 20 students annually. The game industry would need at least 20,000 entry-level jobs. Anyone attending GDC will report maybe 100 jobs or so represented. Where are the "missing" students going? Do many game industry professionals leave their jobs?
- The game industry attracts graduates from multiple fields worldwide, notwithstanding those without a college education and those already established in other areas.

In short, every school with a game degree (or points students to the game industry) must also prepare students for other fields and be honest about the chances of breaking in. Moreover, alums must consider options if and when they leave the game industry by choice or circumstance.

## 2 Game Design Thinking

As part of this review, the ISU proposers and I thought about thinking about game design. I agree with their concept—considering how game design can influence other kinds of design. For those unfamiliar with games and game design, please peruse my [overview](#).

## 3 Geography

The geographic "landscape" implies a gap in the Iowa region. Refer to the following sites via the Animation Career Review, which belongs to the "Big Three" of academic game program rankings along with the Princeton Review and US News & World:

- <https://www.animationcareerreview.com/articles/2022-game-design-school-rankings>
- <https://www.animationcareerreview.com/articles/top-20-game-design-schools-and-colleges-midwest-2022-college-rankings>

Note the lack of any listing for Iowa and the relatively sparse listings for nearby states. With the game industry generally concentrated in larger urban areas, there is an opportunity for regions to consider entrepreneurship, expansion, and serving the local population.

## 4 Industry

See [www.gamedevmap.com](http://www.gamedevmap.com):

- How few Midwest locations list any game industry, e.g.
  - [www.gamedevmap.com/index.php?location=Albuquerque](http://www.gamedevmap.com/index.php?location=Albuquerque)
  - [www.gamedevmap.com/index.php?location=Denver](http://www.gamedevmap.com/index.php?location=Denver)
  - [www.gamedevmap.com/index.php?location=Salt%20Lake%20City](http://www.gamedevmap.com/index.php?location=Salt%20Lake%20City)
  - [www.gamedevmap.com/index.php?location=Boise](http://www.gamedevmap.com/index.php?location=Boise)
- I could not find any listings for Iowa, but I also realized I don't even know where Iowa is.

I recommend looking beyond the entertainment industry—how game technology, processes, concepts, and applications can apply to other fields. For example, say we discussed photography, an established academic area. But photographers do more than take pictures. Imagine journalism, writing, film, science, medicine, trades, writing (biographies, books, museums), and far more. Without photos, many fields would find things impossible. Now extend this notion to other creative arts, crafts, and experiences, like film, animation, role playing, writing, dance, movement, costuming, etc. What's behind the entertainment field applies in many "non-entertaining" ways. Below, I give a few examples of industries that would benefit from a student versed in ISU's proposed degree, especially regarding game design thinking:

- [www.worldatlas.com/articles/the-biggest-industries-in-iowa.html](http://www.worldatlas.com/articles/the-biggest-industries-in-iowa.html)
- [www.iadg.com/iowa-advantages/target-industries/](http://www.iadg.com/iowa-advantages/target-industries/)

Even with a focus on games, there is game-based learning, gamification, serious games, analytical games, interactive exercises, and more. So, reviewing the Iowa industry, I believe the proposed degree can enhance hands-on training for agriculture, manufacturing, visualization of agriculture, software for supply chain management (warehousing), and more with IT. The idea is that games cut across processes, people, and technology to engage and interact. A workforce educated in this fashion would enhance the local and regional industry.

## 5 Degree Program

Instead of trying to cram an entire suite of game curricula into one area, ISU's split into three domains makes sense. Refer to my explanation of my background and perspective in Section 1 above. Large schools could theoretically offer multiple degree programs across the various aspects of games. ISU's breakdown covers three focus areas within the degree:

- *art* (Art and Interactive Media Design)
- *engineering/computing* (Game Computing)
- *studies* (Game Worlds, Narrative Design, and Society) ("studies" implies Game Studies)

Other observations:

- Given this spread of areas, I recommend that ISU mirror many other programs and adopt the established name of "Game Design and Development" to encompass the diversity of topics.
- The courses listed (Years 1-4) demonstrate a good depth of topics within each domain. The only struggle I foresee is the demand for many classes from non-majors. Other subfields of games (e.g., production, marketing) will be easier to develop and cover if the new degree "catches on," which I suspect will.
- The capstone is a good addition, especially to reassemble the cohort(s) and provide a portfolio piece. I agree with the proposal's concept of students creating multiple games for what's known as a portfolio.
- Including an Industrial Advisory Board is also an excellent decision to help guide the curriculum.



## 6 Students

I anticipate the spread of domains will attract a diverse population of students. From my experience, many students learn that they can “do games,” but then they lack the background to understand that they will exert most effort in making and studying, not just playing. So, a degree program that allows discovery and choice is student-centered and should provide retention. Most game programs will have attrition no matter what they do—games are far harder to make than many students realize. Worse, the fierce competition to break into the game industry may cause some to transfer to another program.

## 7 Student Experience

From my proposal version, I found the following list of activities: capstone projects, field trips, sponsored courses, internships, study abroad options, and site visits. At RIT, we apply these activities in the term *student experience*:

- The field trips may be tricky given a limited local game industry, but game students must explore non-game jobs anyway.
- Faculty must assist as much as possible, especially to hone their expertise. What better way to become “game faculty” than to join these activities? Administrators can easily account for such work as service or administration.
- Depending on ISU’s organization, I recommend including advising staff in such work.
- A robust internship program is an excellent investment in student placement. I cannot stress this advice enough—the program will need a significant commitment from ISU regarding career advising, service load, corporate outreach, alumni, and advancement/development. As discussed in Section 4, thinking broadly about career outcomes will help expand the available internship pool.

As part of this work, I recommend that the entire team consider how ISU students will leverage their work externally, e.g., apply to competitions, get involved in community outreach, engage in research, etc. External recognition, especially in terms of competitions/awards, will help a game student improve their chances of breaking into the game industry.

## 8 Resources

As part of ISU’s new game program, the proposal makes a good case for resources. These expenses are nontrivial and need commitment:

- Student travel, especially for competitions
- The Game Developers Conference, typically held in San Francisco: [gdconf.com](http://gdconf.com).

The proposal has a robust list of resource requests, including critical space for prototyping and testing—yes, games need players. Such an area attracts prospective students and faculty, which means the proposal has merit. Note also the request for computing, library space, acquisitions, and other support. The administration should budget a cascade (as RIT calls it) for hardware—“gaming machines,” which really should be called game development workstations, require high-end hardware (typically GPUs). This expense is also nontrivial.

## 9 Conclusions

Overall, ISU’s proposal is well-positioned in terms of scope, geographic area, and curricular approach. I strongly recommend that the ISU administration fund this work entirely. Note also that the degree title “Game Design and Development” would fit the proposed program better.

## **Review: Jacobs Stephen | Rochester Institute of Technology**

### **Game Degree Proposal Review**

First, let me say that I like the overall design of the degree, three tracks, etc. Most of what I write below will be a critique of the nuts and bolts and the details in which the Devil resides, so don't take what's here to mean that I think "You're Going About This All Wrong!" or anything like that.

I've laid things out in the four "buckets" Jeremy suggested. I assume you'll reshuffle this desk to fit whatever final review doc you assemble.

I look forward to seeing what the final version looks like and am happy to answer follow up questions, hop on a call, do a visit, whatever will help you move this forward.

#### ***Curriculum***

While I understand there may be a need to fill a table with as many offerings as possible to show the wealth of institutional offerings, there's waaay too much here and much of it is stuff your students will never need and may well never get into.

This is particularly the case with the fine art offerings that will require portfolio review and the higher-level programming courses that your students won't have the skill sets for not having had the canonical CS year one and year two courses. There may be outlier students here and there who have the fine art chops or coding chops to go the distance, but what are the departmental hurdles they'd need to get into them.

There's also the list of new topic areas in yellow that aren't even listed yet.

Without having a knowledge of your Gen Ed requirements, opportunities for minors or other collections of courses and how'd they'd interoperate it's hard for me to parse everything here, as it may be for your students. Scheduling is also a hurdle. Are all of these classes available every semester, every year?

I'd advise that you think about these three tracks and really map out what a common student pathway might be for each one, rather than merely a few required and a collection of dozens of possible electives, many of which might only serve a few outlier students. Then look at those pathways with an eye to pre-reqs and when each one is offered and work from the plausible first and add in a few variations on the theme.

For example, the master list column on the first page lists 16 ArtIS classes. Easily half of them shouldn't be there for any number of reasons including applicability, pre-req chains, and likely portfolio/skill sets required to get in. My guess is that if they are BFA classes, and that if the S indicates studio classes, they may also run for a full day, as many of them do in RIT's accredited Art programs, which makes it a challenge for non-major students to take in terms of scheduling around other classes in addition to the other issues mentioned above. Another item are the theater classes. Theatrical script analysis really has very little application to game narrative, even film scriptwriting is only so useful after a point. Econ's another set of courses that don't really apply here. Business/Marketing ones may be more useful, but mostly at a grad level, not undergrad.

#### ***Program Resources***

## **Hardware & Software**

Dr. Schwartz will be your hardware and software resource. I literally don't pay attention. The things I teach are not hardware or software specific. My only thoughts here is that hardware for VR is pricey and designing for VR requires knowledge regarding non-vertigo inducing techniques, etc. For software there are more and more Open Source alternatives out there if you want to save money, but the downside is perception by students (and sometimes HR hiring your students) that they don't know the industry tools. Since your art school already has you buying institutional licenses, there may only be incremental costs the school pays, if any.

## **“People-Ware” New Faculty Hires**

“We propose the hiring start with two faculty in the first year, followed by a third hire in the third year as enrollment reaches full projected capacity.

If you're really going to pursue minors and certificates, you may want to start with all three. Demand will be high, especially from students who are already enrolled in different majors but want to pick up the skills.

“The personnel needs are as follows:”

I'd flip your rankings a bit. I'd rank them as...

Tenure-track faculty on the intersection between computer science and game design

Tenure-track faculty specialized in game design & narrative, serious games and game applications

Projected third hire following course expansion: Tenure-track faculty on the intersection of art, visual culture, graphic design and games

Game Engine Programming and Game Design & Game Narrative are very specialized skills.

Game engine programming requires folks who are specialized in graphics systems and very low-level, high speed programming, generally in C++ or C#.

Game Design is the design of systems, rule sets, goals and procedures, not visual design. Game Narrative is driven by writers creating kernel level content that can be assembled and aligned multiple different ways or left out all together and still have the player end up with a satisfying experience. Traditional literature and screenplay folks generally make terrible game writers and narrative designers unless they've really been trained to do it.

Skilled digital artists, modelers and animators can generally move over to games with some training on working to create 3D models with low polygon counts. It seems like you are getting good support from you existing visual arts and animation units, hence my re-ranking of your list.

## ***Institutional Relations and Strategies***

“The core leadership of the GDM consists of the director, core team, an academic advisor and an administrative manager. The director and the core team are also involved in teaching in the program.”

## **Administration**

One of the key challenges in putting together an academic game program is answering the “Where does it live?” question. Game programs at different institutions live in

- Colleges of Computing: Generally, in their own school or department unless they only focus on programming.
- Colleges of Art: Again, ideally in their own department, sometimes as sub-domains of film or animation
- Colleges of Liberal Arts: Generally, only if the degree is Game Studies
- Stand-alone Centers: Similarly to Architecture or Nursing, some institutions make this choice because the interdisciplinary nature of games can be challenging for tenure and promotion of faculty since they may not be artists enough for their arts peers and technical enough for their computing peers
- 

Wherever a game program lives it’s key that it be its own administrative unit with consistent leadership as much as possible. In my experience ones with shared administration across multiple departments end up falling apart over time as personalities change, competition for resources rises, etc.

### **Career Opportunities for Graduates**

You know your regional market better than I do, so most of my comments are on the national level but may be useful to you anyway.

The market nationally for students like these ebbs and flows with the job market. Though this will change, the market is currently down. Games are following tech in general and we’re seeing a wave of layoffs. When that happens the market for entry-level employees tends to drop as more skilled professionals come onto the market.

When the national market is good, entry-level jobs tend to be for three specific roles; programmers, artists/animators and QA/testers. In large-scale, major industry games (not just AAA) these are the folks that are needed in larger numbers. If you expect most of your graduates to stay in the region, where smaller teams make smaller games, simple web games, kiosk experiences, etc, there may be more general need for a wider set of roles or folks who can fill multiple roles.

If that seems at odds with the ranking of a game and narrative professor over a specialized art/animation professor, the key is that EVERYONE on the production team, no matter what their specialty, needs a solid understanding of those aspects to understand how everything comes together and what part their work plays in the overall product and how the pieces interoperate.

### **Accreditation**

“Accreditation is an important milestone for many degree programs at Iowa State University. It demonstrates to a variety of audiences that the program in question has undergone and passed a thorough review by a trusted third party.”

In my opinion this is a waste of time and energy. The folks employing your graduates don’t care. It may be a political necessity in your state education environment and/or it may mean something in marketing to parents. Getting a check mark in the “Oh yeah, those oddball programs” from a body that accredits Fine Art programs is of limited value otherwise. Dr. Schwartz may have other thoughts.

### **Articulation Agreements with Other Schools**

If our experience is any guide, we generally don’t have the seats in our classes to bring in folks after two-years elsewhere. We may take a very small number, but that’s all, and we take a lot of students int

our programs each year. I don't know that at the size of the program your projecting this is worth your time. It may be good internal and external politics but you'll likely only accept a very few students at most. Dr. Schwartz may have other thoughts.

# ISU Game Design Major

Proposal Review - Houston Brayton

December 13th, 2023

## 10 Summary

Overall quite an accomplishment getting support across the University from various colleges. I'm sure it was quite an undertaking getting involvement from so many stakeholders. The program covers the core disciplines that would be expected for a broad understanding of game development.

Comments have been made inline with this version of the document:

[Game Design Major ISU Degree of the Future final proposal - Review by Houston Brayton.pdf](#)

## 11 Notes

- Audio
  - I didn't notice any curriculum about audio, but it is one of our 5 basic senses and ways we interact with games. It surely will come up as an element of game development students end up needing to implement into their games. Often times it is an afterthought, and unfortunately results in sub par audio getting put into a game which does more perceived harm than good to the final quality of the game.
- AI
  - I noticed in the proposal another individual had feedback related to AI, which I too feel needs to be included in the program. AI is being used to generate art, audio, and even code in today's games and increasing in use at a very fast pace. We often are competing against lower cost regions (i.e. South America, Eastern Europe) for projects and typically have higher billable rates due to higher wages for US based employees. As AI becomes more accessible, competition on cost of development will continue to become more and more difficult for us as these lower cost sources of development continue to bring down their rates. I expect we will have to embrace AI to increase our productivity while keeping rates as low. We don't look at it as replacing jobs, but leveraging it to reduce billable time on a project. I believe by the time the first round of GDM students graduate that AI of some form will be used by nearly all game development studios.
- Cross Training
  - I believe it seemed within reason, but be careful not to have artists need to get too deep into programming. Some might pick it up, but it might be very difficult if artists need to learn programming without the proper background and general mindset (left vs right brain - creative vs logic thinking)

- Programming Course Suggestion(s)
  - Applied Design Patterns in Game Development
- Try not to get too focused on certain tools (maya, blender, unity, etc), but rather the core methods and fundamentals shared. Technology is CONSTANTLY changing and evolving. Proficiency in a tool is definitely helpful, but more speaking to the philosophical approach in educating.
- Game Industry Business, Economics, Licensing
  - Would be good to have some curriculum about how the industry functions
- Time Tracking / Estimating
  - A large part of pre production planning involves employees needing to estimate out work so we can budget and bid on projects accordingly. This is very difficult for younger/newer employees to do if they've never done it previously and have no baseline to make estimates on. (i.e. How long do you need to code this controller input system? How long will it take to animate this character?)
- Project Management
  - Would be great if students get familiar with a task management system. A lot of the industry uses Jira which would be great for students to be comfortable with prior to getting into their first job.
- Engine Selection
  - I highly suggest the school commit to a single engine to use in the program to keep students from having to learn multiple tools. While it is great to know multiple tools, I feel it is better for staff and students to get very comfortable and familiar with one engine. Unity and Unreal Engine would be my top two suggestions.
- Game Developer Conference
  - It would be great to have the school take students out to this conference. It is a major event in the game industry held in March in San Francisco every year. The event has a few different focuses including educational sessions, job hunting / networking, and expo hall. Many colleges take junior or senior students there. It isn't cheap, but I believe you can work with the conference for pricing on plans and booking room blocks at nearby hotels.
- Broad vs Targeted Focus
  - While a broad focus seems appealing, there's a lot of competition for places to get a degree in game design. I feel this degree will be good at creating generalists, but possibly have issues placing graduates who lack as much specialization. If I asked what ISU does best, what would that be? It would be great if ISU was known to produce, "*The best game writers*", or "*The best tech artists*", etc.

EB Updegraff [eb@hatchlings.com](mailto:eb@hatchlings.com)

FILDI Game Studio  
321 E Walnut, STE 140  
Des Moines, Iowa 50309

High-level notes, let me know if you have any questions or would like more details/format

Industry needs

Including coursework on data analysis, business intelligence

Including coursework on economic design and statistical analysis

AI utilization, ethics, development, etc

The business of art is often overlooked but a large part of the arts side of the industry

Sociological analysis, social design and community building are also needs

“Field Trips”

GDC is a critical conference to attend

IGDA conferences useful as well

M+Dev

Holding a midwest conference would greatly enhance the program, industry partners abound

Concerns about Gender and Orientation and inclusion for those outside the industry hegemony

Industry in Iowa -

Further work needed to make sure the industry is ready for an influx of students

Working with industry to make sure students have needed skills is critical and these are great first steps

Establishing a post-academic pipeline, like an incubator or other program may be possible with current industry in Iowa. Exploration of this would be of interest to the industry if the GDM is created. Could mean considerable growth for the industry.





## Iowa State University Game Design Major Proposal Review

by  
Dr. Frank Heffner  
12/08/2023

Program Director  
Video Game Design Online Program  
Western Iowa Tech Community College  
Sioux City, Iowa



**Western Iowa Tech  
Community College**

## ISU Game Design Program Proposal Review

By Dr. Frank Heffner

12/08/23

Thank you for this opportunity to review and make suggestions to the ISU Video Game Design program approval process document. I will annotate my thoughts about the proposal with experiential anecdotes to support my suggestions. I hope that our experiences can help Iowa State University launch a successful program and help develop economic opportunity in Iowa. I have been teaching at the college-level full-time for 32 years. I also have years of experience in game development. I have taken over sixty post-doctorate courses from industry professionals over the past twelve years to maintain my skills as well as set an example for students. I am attaching my Video Game Qualifications vitae for reference.

### Program Review Notes

**Section (1.b)** After reviewing “A statement of academic objectives”, I suggest adding the objective: Complete a production-ready portfolio. An online portfolio is required for employment in the industry. A production-ready portfolio should demonstrate that a student possesses the artistic and technical skills necessary for creating professional-level digital assets that can be implemented into a game engine based on industry pipeline expectations. We implemented a portfolio development course for each semester (each building on the previous). Our original face-to-face video game program introduced portfolio preparation and development in the fourth semester. When I was tasked with revising our video game development program for online delivery, I decided, based on industry professional feedback from our advisory board, to incorporate portfolio development instruction beginning in the first semester and every semester thereafter.

We noted that many colleges and universities that have digital arts and video game programs do not teach production-ready skills as utilized by industry professionals. Many students can learn high-level modeling and digital art skills, but if they do not understand production-ready methods they usually have to engage in a lot of remedial learning before getting their first industry job. That is why our Mentor Lab is staffed by an industry experienced professional and also why we require all adjunct instructors to have some industry experience. This combined industry experience provides a major competitive advantage to our program. Many industry professionals are members of online forums where students seeking employment post artwork and ask questions. The percentage of students posting artwork that do not demonstrate production-ready methods is quite high. The pathway for the first job for many students is via posting portfolio work in forums with industry professional participation (such as the Polycount forum).

**Rationale and background to support the game development portfolio courses suggestion:**

Our online program launched with the following portfolio related courses. First semester: CIS 369 Video Game Portfolio Preparation, second semester: CIS 405 Video Game Portfolio Polish, third semester: CIS 415 Video Game Portfolio Refinement, and fourth semester: Video Game Portfolio (final development). Most students must continue to polish and refine their portfolio prior to applying for employment. We continue to assist students even after they graduate. Having placed graduates is a key benefit for our program.

**Art Test Preparation:** We introduced CIS 305 Video Game Art Test Preparation in the third semester based on industry professional advisory feedback because many employers will require an art test prior to being placed in addition to a portfolio. Our fourth semester introduces CIS 398 Game Final Submission and CIS 396 Game Team Development. The combination of portfolio preparation, art test preparation, and developing a game improves student production-ready skills and better prepares them for their first position in the industry.

**Attuning students to industry pipeline rigor:** Our new video game online program became much more rigorous than the previous face-to-face program based on advisory board input, my personal reflection, student experiences, and contacts with industry professionals. Students that become inured to completing projects to an industry standard with imposed deadlines are much better prepared for the industry job market. Our online program is project-focused with realistic expectations.

**Jamming sessions:** Another key component for the success of our video game development online program was incorporating feedback from experienced instructors, recent graduates that found employment in the industry, and constant “jamming sessions” to review what was “going right” and “what needed improvement.” As Program Director I incorporated the concept of continuous improvement into our program. We (our instructor team and Advisory Board) wanted to develop a program that truly developed graduates that would have the necessary skills to find employment.

**Rapid prototyping:** Rapid prototyping of instructional concepts is possible because we can create additional instructional video content and, given the flexible organization and naming convention system, we can upload new content seamlessly. Immediate student and instructor feedback is available. In the digital entertainment arts industry technology and software revisions occur at a rapid pace. Being able to respond with rapid prototyping allows us to test, revise, and implement industry relevant instruction. Traditional methods often result in a time lag between recognition of change and implementation of solution. Also, if we get feedback that students are having problems grasping certain concepts we can quickly respond with instructional videos that help clarify those concepts.

**Unique program web site:** We launched and maintain our own program web site that showcases student artwork (from first semester all the way through graduation), published games that are developed by our students, and other projects including internships. I was fortunate to be able to reinvigorate my video game company Mytopia Gameware Institute for

offering internships for select students. For example, we developed a video game for the Lewis & Clark Interpretive Center in Sioux City, Iowa. That video game allows visitors to learn about the Lewis & Clark journey via an interactive video game set up on a special console at the center. Industry professionals can visit our program web page and see student progress and other success stories. The students involved had published a deployed industry game which is crucial for employment consideration.

**Importance of having graduates working in the industry:** Two of our recent program graduates are now working full-time in the cinematics industry (one in Florida and one in South Korea. We have other students working in various industry roles including video game development, cinematics, and 3D Advertising, Building connections with employers is vital in developing a pathway for students to gain employment in the industry as well as building a reputation in the industry for properly training and preparing students.

**Section (1.b)** Per the objective: "Design publishable games," we believe that an even more specific notation that games should be published and "bug-free" as well as be available for free download on a program web site (such as itch.io) <https://mytopiagamewareinstitute.itch.io/>

Getting feedback from gamers that download and play the games is an important source of feedback for continuous improvement. "Published" games is a more focused goal than "publishable" games. Students should be required to actually publish a functioning game.

**Section (1.d)** Per the quote; "Thanks to this emphasis, students will graduate with a degree that confirms to prospective employers that they have the skills to succeed and the knowledge to excel." Skills to succeed is vague. Specifying that the program covers the technical and artistic industry pipeline required skills is crucial for the continuous improvement process. Skill-building should focus on developing game-ready models, game-ready UVs and texturing, game scripting, and other artistic and technical knowledge necessary for creating digital assets and implementing them in a game engine based on industry development pipeline expectations. Students should also have some experience taking an art test and working as a team to actually publish a bug-free video game. A specific definition of skills needed to succeed will help ensure goal implementation and measurement that meet industry expectations.

**Section (1.e)** Per the note that "All Game Design majors will take COM S 127: Introduction to Programming." We found that a game development specific scripting and coding course results in increased participation, retention, and applicable learning (vs. "generic" programming courses). I highly recommend that a game engine specific scripting and programming course be utilized instead. I will detail the justification for this recommendation given its significance.

**Rationale and background to support the game development specific scripting and coding suggestion:** One of our adjunct instructors/Advisory Board members is a professional game developer in Kosovo and is a game scripting expert. I developed our Kosovo Pilot Course prior to launching our Video Game Online program. I was able to test learning concepts and get crucial feedback prior to completing and launching our two-year online degree program. The

Kosovo Pilot Course involved a class of 25 students (selected from an initial group of over 250 applicants) and was offered over a two-week period. The adjunct instructor (noted above) was my on-site assistant in Kosovo (he speaks fluent Albanian and English). Students attended class six hours a day for twelve days. The average “homework” requirement was four hours per night. It was in the Kosovo Pilot Course that I was able to concept test the Mentor Lab idea (having an industry professional on hand to provide feedback and help to accelerate skill building and learning). The duration and intensity of the pilot provided invaluable feedback for my strategic vision for our online program launch.

The Kosovo Pilot course was invaluable for proof of key concepts that I later incorporated into our online program. The course required students to learn basic 3D modeling and UV Layout in Autodesk Maya, texturing in Adobe Photoshop and Allegorithmic Substance Painter, portfolio presentation in Marmoset Toolbag, and final animation and lighting rendered in Maya. The pilot course was a “mini-project” that required learning and applying industry utilized skillsets. The sponsors of the pilot course, including Kosovo industry and government officials, expected to see results. I assured them that I would build a pilot course that lived up to their expectations. Developing a pilot course and eventual full online program based on demonstrating results invigorated me to incorporate my many years of development experience, training, and teaching into a unique program.

**Watershed moment:** Prior to launching the online Kosovo Pilot course I gave an art test to incoming second-year (third semester) students in our original face-to-face video game design program. I did not teach first-year courses in our original face-to-face video game program. I only taught the advanced third and fourth semester courses. Sixteen (16) incoming third-semester students took the art test and had 20 hours to complete it (based on skills and competencies that they were to have learned during their first year of learning). All 16 students failed the art test and that was the watershed moment that alerted me to the necessity of only having instructors with industry experience and a quality portfolio teach courses in the new online program as well as total revising and increasing the rigor of our proposed two-year online program. This experience also convinced me to develop a highly rigorous and demanding pilot course. I understood about industry “crunch time” and realized that students needed exposure to the rigors of the industry pipeline. I also realized that the pilot course must accomplish much more than merely introduce students to basic 3D software. I always remind my students that “projects are due, they are never done!” I developed a project-based pilot course that actually required applied industry pipeline skills (a microcosm of a macrocosm). I reported directly to the Vice-President of Education and thus had high-level support.

**Kosovo Pilot Course results:** Sixteen out of twenty-five students completed the Kosovo Pilot course. The course was condensed, rigorous, and challenging. The students taking the course had no previous 3D software or digital art experience. The final portfolios and animations of the students completing the Kosovo Pilot course (after only two-weeks of intense training) were noticeably superior to the art test results of the 16 first-year face-to-face program participants.

A rendered image collage of the results from each group was eye-opening and self-evident proof that a more rigorous program with an industry experienced mentor was the correct direction for our new online program. It is also noteworthy that students with no previous software or development experience were able to handle the course load and complete a project utilizing a cross-section of industry pipeline skills. When students with two-weeks of concentrated project-based training produced superior results to students with one-year of coursework—it became obvious what needed to be accomplished.

**Conclusion:** On the suggestion of our adjunct instructor in Kosovo we re-focused on teaching scripting and programming skills directly in game engine. Students found that this approach was more relevant than learning more abstract programming skills and we discovered that we had fewer students dropping out of scripting-related courses. Concept retention also increased as a result of the change.

**Key takeaway:** A generic introduction to programming course teaches coding concepts not directly applicable to game engine implementation. Retention of coding concepts will diminish over time and students will face a steep learning curve when implementing scripting in game engine. On the contrary, scripting and programming taught using an actual game engine increases retention and skill level that is applicable for actual game development. Students that learn programming in game engine will demonstrate superior skill application compared to their generic course counterparts.

**The Significance of the Kosovo Pilot Course:** The concept of project-based application of industry pipeline skills became the framework for our new online program. Every course, outside of required GenEd courses, was designed to interface with the other courses. Students would learn how to develop video games instead of learning software. Students would learn base skills quickly and then continue to build their skills through iteration and professional feedback. Many college graduates never fully understand how all the courses that they took synthesize into applicable knowledge. They learn about the “trees,” but do not understand the ecosystem of the “forest.”

**Advantages of online video content:** One of the crucial skill development issues in a traditional face-to-face program is that students that miss class (and thus were not present for demonstrations of key development concepts) have no ready means to get “catch up” on what they missed. In-class demonstrations cannot normally be repeated. Students that even miss one or two courses covering crucial skills in the development pipeline cannot usually overcome the hurdle as they progress through the program. Having online video instruction allows students to watch and practice on a schedule that accommodates their busy lives. Students can re-watch content as needed in order to grasp the skills being demonstrated.

One concept that I tested in the Kosovo Pilot course was keeping the instructional videos between six and eighteen minutes long and organizing the content such that students could skip some of the videos if they grasped the concepts or learned at a more accelerated pace. I

spent a lot of time developing the “naming convention” for the instructional videos so that an outline and index were available to students. Some students need more detailed examples and others do not. Providing flexibility for “acceleration” through the content created a more flexible learning environment. Also, a student or instructor could more easily reference a concept based on the naming convention used. It is much easier to update instructional video content if the videos are organized for such.

**Section (1.f)** Per the quote; “The game industry in Iowa and beyond needs qualified graduates.” Note that a qualified graduate will require a portfolio as well as specific individual and team game development skill demonstration. Some companies will require an art test. We have found that students that are introduced to portfolio development early in the program grasp the reality that they will need a portfolio and thus take that fact more seriously. Many students are not focused on longer-term concerns while attending college. It is vital that students are introduced to portfolio development early and often. There is no escaping this reality. A review of game-related forums where students post questions to professionals will quickly demonstrate that the most common shortcoming noted about educational institutions with video game programs is that the students in those programs were not prepared to have a portfolio that would help them find employment. One of our most recent graduates that is now working full-time in the cinematics industry (and just attended a major meeting with investors for the launch of an animated movie) called me this week to thank me profusely for properly preparing him for his first job. It was his portfolio “that I hounded him about” that opened the door to his success.

**Facilities note:** We utilize a “Mentor Lab” with industry pro (in-person and Discord channel mentoring). We found that having an industry pro with experience increases motivation of students as well as accelerating their skill development cycle.

**Discord channel:** Our Discord channel provides a way for online students to get help with projects as well as provide a virtual classroom atmosphere for students that are studying remotely. Many of our graduates remain active on our Discord channel. Students thus have connections with the “real world.” Having a learning community bolsters recruitment, retention, and success.

**Page 16:** I wanted to make a note about the comment; “Finally, one comment from UI raised concerns that the Game Computing track did not sufficiently reflect the demands of employers in computer game design.” Employers (video game industry, cinematics industry, 3D advertising, etc.) are primarily concerned that graduates have a portfolio that demonstrates that they have mastered the requisite industry pipeline development skills. For the video game industry it is also important that students have worked as a team to develop a functioning game. If a graduate has a quality portfolio and experience working on a team to complete a published game they increase their chances of gainful employment.

**Hybrid learning:** We developed our hybrid classroom option seamlessly after a South Korean student enrolled in our program. Because of Visa requirements we had to provide a certain amount of face-to-face classroom exposure for the student. All we had to do was develop a separate course suffix (hybrid) and set certain days and times in our already-existing Mentor Lab for the student to attend on campus classes. The student could watch online course instructional videos and work on projects under the guidance of our Mentor Lab staffed adjunct and industry professional. Mentor Lab scheduling flexibility helped us achieve that goal. The South Korean student is employed full-time in the video game industry in South Korea and provides another international connection for our program.

**Continuous Improvement:** We have periodic team meetings with all instructors/adjunct instructors about course content that needs updating based on technology changes, issues that students are having learning skills, and ideas to help further develop skills. Continuous improvement coupled with rapid-prototyping in response to industry changes is invaluable. The concept of continuous improvement is often attributed to W. Edwards Deming, born in our own hometown of Sioux City, IA.

**Maintaining and updating a program Web Site:** It is important to develop and maintain a web site that displays student game-development progress (selected artwork and games) so that industry pros can “see” (vs. read) that effective skill-learning (relative to game pipeline skills) is demonstrated.

## International Experience

### **Kosovo Pilot (September 2018)**

See Page Three notes

### **Cambodia Pilot (February 2022)**

The Cambodia Pilot opportunity developed after Kosovo Pilot course and launching of our online program. I revised the original Kosovo Pilot. We launched two sections of the pilot course.

The Cambodia Team decided on 26 finalists (out of the original 71 finalists) in order to ensure long-term success of the endeavor. They also decided that they wanted Steve and I to support fewer students (they realized that 71 students would dilute overall effectiveness). They used the following criterion for their final decision: 1) English language minimum proficiency, 2) Technology background, 3) “Stick-with-it-ness” [they want serious candidates that will not easily drop out], and 4) not dilute our ability to fully support the mentor finalists.

There will be two Mentor Pilot sections of 13 students each. So 26 finalists (which really is an awesome number)!



These students will take the full first semester of the VG Online program in the Fall and will become the first Mentors/recruiters.

Cambodia Pilot Poster:



### South Korea Consultations

I prepared for our South Korean university visitors in February 2023. The South Korea university consortium (government and university system) uses the Metaverse (“Metauniversity”) for online course delivery. Terry Yi and I think this visit is an excellent opportunity to open the door for offering our VG Online program in South Korea. I am preparing a pilot demo so we can demonstrate that we can provide online course training that meets their needs and expectations. The Metaverse is much more advanced than Canvas (it is a virtual world based on a Video Game type engine).

The South Korea opportunity encompasses much more than merely offering our Video Game Online program. It opens the potential for virtual development on the Metaverse. If the Metaverse takes off as the South Koreans foresee—it will be a major technological advancement and put WITCC at the forefront compared to other U.S. colleges and universities.

### Addendum (common questions about our Video Game online program)

What does a student need in order to get a job in this industry?

Getting a job in the industry requires having a professional portfolio that demonstrates one has acquired expected industry pipeline skills. Graduates will develop, by the end of the program, a production-ready portfolio. Requirements vary by job type and company, but graduates will have the skills necessary to adjust their portfolios accordingly. By the end of the two-year

degree program you also develop a video game as a team so that you have experience applying the skills that you learn.

The Video Game Online program is designed to teach you the production-ready skills necessary to get a job in the video game or related industry. You must develop a portfolio in order to apply for a position in the industry. The entertainment industry (video games, cinema) and other related industries (virtual reality, visualization, digital advertising) all require a portfolio that demonstrates that you possess the skills the industry expects. We also prepare students to take an art test during the third semester of the two-year degree program. Many firms require that you take an art test as well as provide a portfolio.

Are the skills learned in the WITCC Video Game Online program just for Video Game Development?

The training in the program focuses on learning the video game pipeline and preparing a professional portfolio. However, almost all of these skills transfer to the digital advertisement industry, the movie media (cinematics) industry, and most modern product design development.

How many job opportunities are there?

There are many opportunities as long as the applicant possesses the requisite skills. The games industry is at an all-time high, reaching an estimated \$230 billion by 2022. Statistically, video games are now the most popular and profitable form of entertainment beating out Cable TV and Streaming services such as Netflix and Hulu. Job opportunities are always available to well-educated and highly talented individuals who are willing to work.

Are there internship opportunities for students in the WITCC Video Game Online program?

Students taking part in the WITCC Online Video Game Design Program will have the opportunity entering their fourth semester, to create and publish, in partnership with Mytopia Gameware Institute (MGI) as a special internship opportunity to gain working experience with the current MGI team of professionals working both here and internationally to gain valuable experience in what a workforce simulation will be like moving forward in their careers.

Thank you,

Dr. Frank Heffner

## **Program Review: Iowa State Game Design Undergraduate Major**

Dr. Jessica Hammer

Director, Center for Transformational Play at Carnegie Mellon University

Overall, this is an excellent and thoughtfully designed program that leverages university resources wisely, and will prepare students for success either in the game industry or in industries that demand related skills. I strongly recommend this program for adoption at Iowa State University.

At a high level, this program's key strengths include:

- A deep understanding of games as not just digital and not just analog, but as a form that crosses multiple mediums. I can imagine a student making analog history games being just as successful as one who wants to become a technical animator.
- Thoughtful onboarding of students who may not have prior training in games and/or related disciplines, while still allowing expert students to pass out of the first year courses. Not only does this serve undergraduates who may still be exploring their professional identity, it also has positive implications for inclusion of groups who have been historically marginalized in games.
- Excellent use of existing resources. The team has identified courses from many different departments that will be relevant for budding game designers, and are only introducing new classes where they are genuinely needed.
- Training in process, including sketching, physical prototyping, and iterative design. Games are rarely fun the first time out, and students must learn how to iterate effectively. This training will also be highly relevant for other disciplines that involve iterative design and technical development.
- Appropriate level of cohort support. Rather than insisting that students complete the entire program in lockstep (which introduces challenges around other coursework), the program uses a "touchstone" approach where the cohort takes key courses together. These classes (GAME 201, 202, 211, 301, 401) are where they will have the opportunity to engage in interdisciplinary teamwork around games, and bring the strengths they learn in their focus areas and/or other coursework to bear.
- A focus on portfolio creation and professional development. In addition to helping students be professionally successful, this sharing of tacit knowledge is an important contribution to equity. All students can succeed in this program, not just those who happen to have personal connections in the industry.
- A terrific leadership team that itself models interdisciplinary collaboration!

Based on the report, there were some design choices I did not initially understand. However, the team clearly explained their rationale for the following choices.

I originally thought teams would not start their interdisciplinary collaboration on game projects until the Y3 workshop. The team clarified that collaboration starts in Y1 in Games 202, and continues through the Y2-Y4 required classes. This is an appropriate choice, because students need many ongoing opportunities for practice in order to collaborate effectively.

I originally thought that students would benefit from a year-long capstone. The team pointed out that a one-semester intensive capstone would allow students to have their portfolio projects ready for the job market in spring, while leaving successful teams the flexibility to pursue their games further in the spring. (See below for further discussion of this topic.)

I was originally confused why Drawing I was a required class. The team clarified that it was focused on effective sketching and prototyping rather than, e.g., fine art drawing; it also is a requirement for many later design classes. As all students are expected to take at least some courses across all focus areas, it makes sense to ensure they are prepared with the key prerequisite.

This proposal is sufficiently strong that it could be accepted as is. However, if the team chooses to improve their proposal, I make the following recommendations.

**Add more psychology course options.** A working understanding of cognitive and/or social psychology is highly valuable to the practicing game designer. I recommend that a basic course in each area be added to the list of courses that can satisfy major requirements. The program leadership can work with instructors for those courses to create game-relevant versions of course assignments, and game design majors could supplement their learning with readings from Madigan's books on games and psychology (or similar) to help them apply what they learn.

The team also suggested connecting with researchers working on games in Iowa State's education program; I concur that a learning sciences approach can be particularly helpful for teams working on serious or transformational games.

**Add more support for production roles.** The current proposed curriculum does not include any training for team producers. Production is critical to game development, but I do not think that having a full production track is justified at this stage. However, team producers will be needed at minimum during GAME 301 and 401 (the workshop and capstone classes), if not sooner.

At CMU, each student game development team typically has one producer, even if they have multiple designers, programmers, and artists. We therefore take a situated learning approach for the students who serve as team producers, where they receive scaffolding and support *in the context of specific projects*. At the CTP, we have producers-in-training shadow a project for a semester, where they spend 1-2 hours per week observing how a more senior student producer runs the team. We additionally offer independent study credits for students who want to learn more, and have identified an effective self-study curriculum. At the ETC, producers take a weekly seminar class with an industry producer, where they both learn from the expert and share strategies among peers. At your institution, this could be run as a 1-credit class led by an adjunct, and serve as additional professional development for interested students.

**Create a post-capstone pipeline.** An additional benefit of a fall semester capstone (GAME 401) is that successful teams can continue their projects into the spring, as discussed above. We have found that teams need some support in order to be able to do this effectively, in particular if the spring semester is to require less faculty time and effort than a studio would.

When I teach game studio classes, I have a structured process for such a post-studio pipeline. First, teams must *apply* as a group to the next semester's independent study. The application includes their current prototype, team roles, a rationale for what they hope to accomplish, and a project plan. To be above bar, the prototype must be worth continuing, the proposed work must be clear, and the team must be able to accomplish their goals with minimal (1 hour/week) faculty oversight. From all above-bar proposals, I select as many as I have slots to support, which means that some worthy proposals may not be accepted.

Additionally, the CTP offers a program called Pipeline to the Public, which helps teams showcase their games at conferences, festivals, and local institutions. Teams apply with a current prototype, which must be ready for public-facing play, and a vision for what they want to accomplish (e.g. win awards, reach a specific community, collect research data). Teams who are accepted to the program receive a weekly meeting with a CTP staff member; access to a repository of example applications to, e.g., Indiecade; introductions to community partners; and office hours with our affiliate game designers, who can provide external game review. We also pay any costs associated with conference, festival, or competition entry for teams who are accepted into the program.

Overall, I am grateful for the opportunity to review this inspiring, exciting program. I wish this degree had existed when I was an undergraduate, and your students are very lucky to have access to such a terrific program!

# Iowa State University

## Game Design Major Program: Governance Document

### I. Introduction

A. This document describes the basic policies and procedures of the Game Design Program of Iowa State University. This, and all ancillary Program documents, is supplementary and subordinate to policies and procedures of the Board of Regents; the State of Iowa; Iowa State University (as expressed in, among other documents, the *ISU Faculty Handbook*); the College of Design; and the College of Liberal Arts and Sciences. Any rule or policy adopted by any or all of these bodies subsequent to the adoption of this Governance Document requires revision or modification of the latter, if there is conflict between them.

B. In cases where conflicts exist among Department, College, University, and Regents documents, the higher-level governance document prevails. The rules and regulations of higher-level governance documents are still in effect even if absent from the lower-level document.

### II. Mission Statement

The mission of the Game Design Major (GDM) is to become a nationally and internationally recognized and respected program educating students in game design, development, and implementation. The GDM's vision is to create a collaborative, inspiring, and engaging educational environment that supports knowledge acquisition, sharing, and experimenting in the fields of game design, development and implementation.

Game design and development refers to the process of creating the rules, mechanics, gameplay, and overall structure of a video game, board game, or any interactive experience. It is a multidisciplinary field that combines elements of art, storytelling, psychology, and technology to craft engaging and enjoyable games. The GDM brings together multiple Iowa State colleges, including but not limited to, the College of Design, the College of Engineering, the College of Human Sciences, and the College of Liberal Arts and Sciences to provide a comprehensive and interdisciplinary education delivered in collaboration with industry partners for the success of GDM students. By bringing together faculty and game-experts, the GDM will contribute to Iowa's communities by providing students with an education in the principles, impact, and practical skills of game design. GDM students will leave Iowa State equipped to succeed in the game industry; a game industry that will gain skilled professionals able to stimulate the future of game design in Iowa.

### **III. Program Administration**

#### **A. Officers and Committees**

1. The Program Director oversees the program and is responsible for its operation and developing a sound vision in collaboration with the Program Committee, the College of Design, and the College of Liberal Arts and Sciences. The Program Director, in coordination with the Program Committee, oversees GDM staff, recruitment efforts, the budget, the curriculum, and the general day-to-day operations of the GDM program.

The Program Director of the Game Design Major will be appointed by the Dean of the College of Design in consultation with the Dean of the College of Liberal Arts and Sciences and the existing Program Committee and faculty associated with the Game Design Major. The appointment will be for a mandate of three years. This appointment term may be extended following a formal reappointment review after 3 years, in alignment with the college's governance document. Intermediate reviews will be considered as necessary.

2. The Program Committee manages and oversees curriculum, admissions, and faculty associations with the GDM. The Program Committee also monitors and revises the Program Governance Document as needed. The Program Committee works in close collaboration with the Program Director to perform these duties. The Program Committee meets regularly with the Program Director to ensure the smooth flow of the operation.

The Program Committee will have a minimum of four members selected for a mandate of three years. Committee members may renew their service for a second three-year term. Membership of the Program Committee should balance representation from the College of Design and College of Liberal Arts and Sciences.

The initial membership of the Program Committee will be formed of the current members of the Game Design Program Development Team. To reach the mandated size and balance of the Committee, additional faculty may be invited to serve by the Program Director from nominations by the Program Committee.

In future years, vacancies on the Committee will be filled by the Program Director based on nominations from the Program Committee.

The Chair of the Program Committee will be elected by simple majority from members of the Committee, self-nominations are permitted for the position. In the event of no self-nominations the Program Director will appoint the Program Committee Chair.

3. The Game Design Program may form ad hoc committees as needed for the pursuance of Program business. It may also form standing committees by revising the Governance Document.

#### B. College-Level Supervision

1. The GDM Program is administratively managed by the College of Design in partnership with the College of Liberal Arts and Sciences.

2. Curriculum decisions and revisions made by the Program Committee will be subject to review by the Program Curriculum Committee (PCC). Membership of the PCC will be drawn from university faculty and represent the multiple colleges associated with the curriculum of the GDM Program. The Program Curriculum Committee serves as a department-level curriculum committee within the structures of the university.

3. The PCC will be appointed by the Associate Dean of Academic Programs and Student Success in the College of Design. The Associate Dean will select committee members based on, but not limited to, nominations from the Program Director and Program Committee. All efforts should be made by the Associate Dean to match representation of Iowa State's colleges on the PCC proportionally to participation by faculty from those colleges in Game Design Major teaching.

#### C. Policies and Procedures

1. Prospective students will be admitted to the program in the same manner as other students are admitted to the institution.

2. The GDM Program Director and Committee will discuss and vote on all proposals for curricular revisions. Such votes require a quorum, consisting of a simple majority of voting members. Changes approved by the Program Committee will be submitted to the Program Curriculum Committee for further discussion and approval before being advanced to the appropriate college-level venue. College level curricular reviews will be accomplished by the COD.

The Program Committee will handle approval of courses for inclusion in the Game Design Major curriculum. As part of this activity, the Committee will consider proposals for cross-listings using the GDM course code. This decision will be guided by standards created and approved by the Program Committee.



#### **IV. Revisions to the Governance Document**

Any voting member of the GDM Program Committee, any member of the GDM Program Faculty, or any chair of a department with significant teaching responsibilities in the program may submit a written proposal for a change in the governance document. Such proposals will be formally discussed by the GDM Program Committee. Approved changes in the governance document will be forwarded to the Dean of the College of Design for discussion and final approval.

## Academic Program Approval Voting Record

This document is to be appended as the last page of the proposal for any new or revised academic program to record the successive votes of approval as the proposal moves through its required review and approval steps. Consult Faculty Handbook Section 10.8 or the Faculty Senate Curriculum Committee website for information regarding Committee review and voting requirements for each action.

Curricular Action: (check appropriate boxes below)

1.  New Program     Name Change         Discontinuation         Concurrent Degree for:
2.  Undergraduate Major    Graduate Major     Undergraduate Minor    Graduate Minor  
 Undergraduate Certificate     Graduate Certificate         Other: \_\_\_\_\_
3. Name of Proposed Change: B.S. in Game Design
4. Name of Contact Person: Alenka Poplin                      e-mail address: apoplin@iastate.edu
5. Primary College: Design    Secondary Colleges: LAS, Engineering, Human Sciences
6. Involved Department(s): Community and Regional Planning, Graphic Design

**Voting record for this curricular action:**

Voting Body	Votes			Date of Vote
	For	Against	Abstain	
Dept. or Program Committee	7	0	0	Jan 25, 2024
College of Design Curriculum Committee	6	1	0	Feb 1, 2024
College of Design Approval Vote	46	2	0	Feb 22, 2024
Faculty Senate Curriculum Committee	7	0	0	March 21, 2024
Faculty Senate Academic Affairs Council	7	0	0	April 8, 2024
Faculty Senate				