GAME DESIGN

Overview

The Bachelor of Science in Game Design offers dynamic and multidisciplinary education in game design and development. The program is based on the principle that successful games are crafted through a blend of imaginative storytelling, cutting-edge technology, and artistic vision. The blend of skills in these areas culminates in engaging interactive digital and analog experiences that have the power to entertain, educate, and inspire.

Students in the Game Design major (GDM) study general game design principles, broad skills across the many disciplines of game design, and specialize in one focus area of interest that best suits their passions and career interests. These three areas are: Game Art, Game Computing, and Game Worlds. The focus areas reflect the major sub-disciplines within game design and allow students to develop mastery in one possible career path. Students across these focus areas share core courses that cover game design thinking, career development, game analysis, prototyping, and a capstone project studio in their final year, which they dedicate to producing a collaborative capstone project. Throughout their coursework, students gain individual and multidisciplinary team-based experience in iterative design individually and in multidisciplinary teams. Graduates leave with a portfolio of skills and games that prepare them for a range of careers in the game industry and adjacent allied fields.

The GDM brings together the artistry of game design elements, the mechanics of gameplay, and the technology of creation. A Bachelor of Science in Game Design is brought together, and Iowa State University provides the tools and knowledge you need to turn your creativity into reality.

Student Learning Outcomes

After successfully completing the Game Design major, students will be able to:

1. Understand principles of game design thinking, including genre, formal elements, dramatic elements, and system dynamics
2. Explain how human and social contexts shape game development and the impact of games
3. Employ appropriate technology, including hardware and software, for game development
4. Communicate and plan effectively within multidisciplinary teams
5. Evaluate user experience in games through play-testing and implement the lessons learned
6. Develop, critique, and analyze game prototypes using methods of game design thinking
7. Create, iterate, and publish finished games as part of a capstone portfolio

Grade Point Requirement

All students majoring in Game Design are required to earn a C- or better in all courses applied toward the degree, including transfer credits.

Game Design Focus Area

Game Design majors must choose at least one Game Design Focus Area. The options are Game Art, Game Computing, or Game Worlds.

Focus Area Description

Game Art will prepare students to solve visual problems in gaming. They will gain skills in drawing, visual design and 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 as well as skills used in the creation of analog 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 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. Within Game Worlds, courses are subdivided into Game Worlds, Narrative Design, and Society. This focus area will support students' acquisition of the skills to apply cultural lessons to the writing and narrative design of games.

Courses in each Focus Area belong to one of four subcategories:

- *Focus Required*
- *Focus Option*
- *Interdisciplinary Option*
- *Game Exploration*

Focus Required courses pertain to the focus area's core competencies. *Focus Option* courses allow students to follow their specific career and personal interests within the Focus Area. *Interdisciplinary Option* courses require you to take courses in a Focus Area other than your own. *Game Exploration* courses allow discovery in the broader discipline.

Focus Required and Focus Option

Focus Required and Focus Option courses are discipline specific courses necessary to develop the skills and knowledge within that Focus Area. Student study in a Focus Area develops individual skills that students will then bring to team-based, interdisciplinary Game Design projects and professional settings. The Game Design Curriculum sheet has clearly defined prerequisites not listed here for each Focus Area.

Degree Requirements

The Bachelor of Science in Game Design is a four-year program that consists of 121 credits: 40 credits of General Education, 65-66 credits in Game Design courses (required and elective courses related to a focus area), and 14-15 credits in General Electives.

Information on admission criteria, including allowable credits for transfer students, is announced yearly on the College of Design website.

Game Design Focus Areas

Game Design majors must choose a Focus Area: Game Art, Game Computing, or Game Worlds. All focus area study plans include a common core of required Game Design courses as well as required courses and electives that are specific to the focus area.

Game Art will prepare students to solve visual problems in gaming and will learn how to utilize this knowledge in the game development process. Students will gain skills in drawing, visual design and storytelling, storyboarding, character animation, 3D modeling, and related fields.

Game Computing will provide comprehensive knowledge in programming, coding, and creating online digital games. Students will focus on object-oriented programming, data structures, and discrete computational structures which they will be able to apply in game design and development.

Game Worlds 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. Within Game Worlds, courses are subdivided into Game Worlds, Narrative Design, and Society. This focus area will support students' acquisition of the skills to apply cultural lessons to the writing and narrative design of games.

General Education Requirements - All Focus Areas (40 credits)

University Requirements		6
International Perspectives		
U.S. Cultures and Communities		
Communications		10
ENGL 1500	Critical Thinking and Communication	
ENGL 2500	Written, Oral, Visual, and Electronic Composition	
LIB 1600	Introduction to College Level Research	
Select one from the following:		
COMST 1010	Introduction to Communication Studies	
COMST 2110	Interpersonal Communication	
SPCM 1100	Listening	
SPCM 2120	Fundamentals of Public Speaking	
Humanities*		6
Social Sciences*		6
Math, Physical and Biological Sciences*		6
Additional General Education (3000-4000)*		6
Total Credits		**40**

*See approved list of courses on Curriculum Sheet

Game Art Focus Area

Game Art Required		
COMS 1270	Introduction to Computer Programming	3
DSNS 1310	Drawing I	4
ART 2300	Drawing II	3
GAME 2020	Game Design Fundamentals	3
GAME 2030	Introduction to Game Engines	3
ART 2120	Studio Fundamentals: Digital Media	3
GAME 2100	Game Career Development	2
GAME 2110	Game Play and Analysis	3
GAME 3010	Game Design Workshop	3
GAME 4010	Game Design Capstone	6
Select one from the following:		3
GAME 2720	Game Design and History	
GAME 2730	Game Design and Cultures	
Game Art Electives - Choose 18 credits from the following:		18
ART 3080	Computer Modeling, Rendering and Virtual Photography	
ART 4060	Introduction to 3D Organic Modeling in ZBrush	
ART 4070	Principles of Character Animation	
ART 3230	Scientific Illustration Principles and Techniques	
ART 3260	Digital Rendering	
ART 3270	Illustration as Communication	
ART 4080	Principles of 3D Animation	
ARTGR 4840	Selected Studies in Graphic Design	
ART 4310	Character and Scene Design	
ART 4320	Sequential Narrative Drawing	
ARTGR 4630	3D Motion Graphics	
ART 4700	Data, Code, and Form	
ART 4730	Video Art	
Game Design Exploratory Electives - 12 credits from other Focus Areas		12
Choose 3 credits from Game Computing Courses		
Choose 3 credits from Game Worlds Courses		
Choose 6 credits from Game Art, Game Computing, and/or Game Worlds Courses		

General University Electives		15
Total Credits		**81**

Game Computing Focus Area

Game Computing Required

COMS 1270	Introduction to Computer Programming	3
DSNS 1310	Drawing I	4
GAME 2020	Game Design Fundamentals	3
GAME 2030	Introduction to Game Engines	3
GAME 2040	Programming for Game Engines	3
ART 2120	Studio Fundamentals: Digital Media	3
GAME 2100	Game Career Development	2
GAME 2110	Game Play and Analysis	3
Select one from the following:		3
HIST 2720	Game Design and History	
GAME 2730	Game Design and Cultures	
GAME 3010	Game Design Workshop	3
GAME 4010	Game Design Capstone	6
COMS 2270	Object-oriented Programming	4
COMS 2280	Introduction to Data Structures	3
COMS 2300	Discrete Computational Structures	3
COMS 3110	Introduction to the Design and Analysis of Algorithms	3
COMS 3270	Advanced Programming Techniques	3
COMS 3360	Introduction to Computer Graphics	3
COMS 4370	Computer Game and Media Programming	3
Game Computing Electives - Choose 3 credits from the following		3
CYBE 2310	Cyber Security Concepts and Tools	
CRP 3010	Urban Analytical Methods	
CRP 4560	GIS Programming and Automation	
EDUC 3020	Principles and Practices of Learning with Technology	
SE 3090	Software Development Practices	
SE 3170	Introduction to Software Testing	
SE 3190	Construction of User Interfaces	
SE 3390	Software Architecture and Design	
SE 4210	Software Analysis and Verification for Safety and Security	
Game Design Exploratory Electives - 6 credits from other Focus Areas		6
Choose 6 credits from Game Art or Game Worlds		
General University Electives		14
Total Credits		**81**

Game Worlds Focus Area

Game Worlds Required

COMS 1270	Introduction to Computer Programming	3
DSNS 1310	Drawing I	4
GAME 2020	Game Design Fundamentals	3
GAME 2030	Introduction to Game Engines	3
ART 2120	Studio Fundamentals: Digital Media	3
GAME 2100	Game Career Development	2
GAME 2110	Game Play and Analysis	3
Select one from the following:		3
HIST 2720	Game Design and History	
GAME 2730	Game Design and Cultures	
GAME 3010	Game Design Workshop	3
GAME 4010	Game Design Capstone	6
Select one from the following:		3
ENGL 3040	Creative Writing: Fiction	
ENGL 3150	Creative Writing: Screenplays	
ENGL 3160	Creative Writing: Playwriting	
Choose 3 credits from the following (World Building):		3
ANTHR 2300	Globalization and the Human Condition	
HIST 2840	Wonders of the World, Global History of Innovation	
POLS 1250	Democracy and Dictatorship: Introduction to Comparative Politics	
RELIG 2050	World Religions	
CRP 2010	The North American Metropolis	
Choose 3 credits from the following (Narrative Design):		3
CLST 2730	Greek and Roman Mythology	
ENGL 2750	Analysis of Popular Culture Texts	
PHIL 3630	Metaphysics in Science Fiction and Popular Culture	
Choose 3 credits from the following (Society):		3
ARTH 2800	History of Art I	
ARTH 2810	History of Art II	
HIST 2710	The History of Sports in the United States	
RELIG 2150	Religion and Popular Culture	
PHIL 2300	Moral Theory and Practice	
CRP 2910	World Cities and Globalization	
Choose 3 credits from the following (Open Topics):		3
AMIN 3220	Peoples and Cultures of Native North America	
ARTH 3950	Art and Theory Since 1945	
CRP 3200	Urban Geography	
ENGL 3150	Creative Writing: Screenplays	

ENGL 3300	Science Fiction		
HIST 3040	Cultural Heritage of the Ancient World		
HIST 3640	The Mythic Wild West		
PHIL 3640	Metaphysics: God, Minds, and Matter		
POLS 3080	Video Games and Politics		
POLS 3340	Politics and Society		
Choose 6 credits from the following (Open Topics):		6	
AFAM 3300	Ethnic and Race Relations		
ENGL 3040	Creative Writing: Fiction		
ENGL 3020	Business Communication		
ENGL 3130	Rhetorical Website Design		
ENGL 3160	Creative Writing: Playwriting		
ARTH 4940	Women/Gender in Art		
HIST 4880	American Stuff, Colonial Times to the Present		
PHIL 3430	Philosophy of Technology		
PSYCH 3860	Media Psychology		
WGS 4300	Gender and Consumer Culture		
Game Design Exploratory Electives - 12 credits from other Focus Areas		12	
Choose 3 credits from Game Computing			
Choose 3 credits from Game Art			
Choose 6 credits from Game Art, Game Computing, and/or Game Worlds Courses			
General University Electives		15	
Total Credits		**81**	

Four Year Plans

Game Art Focus Area

* Indicates prerequisite for future course not covered by core courses
 # May be skipped with satisfactory placement exam score

First Year

Fall	Credits	Spring	Credits
DSNS 1310	4	COMS 1270	3
GAME 2020	3	ART 2120	3
MATH 1400 (#* [or Gen Ed])	3	GAME 2030	3
ENGL 1500 (# [or Gen Ed])	3	MATH 1430 (#* [or Gen Ed])	4
GAME 2720	3	General Education/Elective	3
	16		**16**

Second Year

Fall	Credits	Spring	Credits
GAME 2100	2	GAME 2110	3
ART 2300	3	Game Art Elective	3
Game Design Exploratory Elective	3	Game Art Elective	3

Fall	Credits	Spring	Credits
General Education/Elective	3	Game Design Exploratory Elective	3
ENGL 2500	3	General Education/Elective	3
LIB 1600	1		
	15		**15**

Third Year

Fall	Credits	Spring	Credits
GAME 3010	3	Game Art Elective	3
Game Art Elective	3	Game Design Exploratory Elective	3
Game Art Elective	3	General Education/Elective	3
General Education/Elective	3	General Education/Elective	3
General Education/Elective	3	General Education/Elective	3
	15		**15**

Fourth Year

Fall	Credits	Spring	Credits
GAME 4010	6	Game Art Elective	3
Game Design Exploratory Elective	3	Game Art Elective/Gen Ed/Elective	3
Game Art Elective/Gen Ed/Elective	3	Game Art Elective/Gen Ed/Elective	3
General Education/Elective	3	General Education/Elective	3
		General Education	2
	15		**14**

Total Credits: 121

Game Computing Focus Area

First Year

Fall	Credits	Spring	Credits
DSNS 1310	4	COMS 1270	3
GAME 2020	3	ART 2120	3
ENGL 1500 (# [or Gen Ed])	3	GAME 2030	3
MATH 1400 (#* [or Gen Ed])	3	MATH 1430 (#* [or Gen Ed])	4
GAME 2720	3	General Education/Elective	3
	16		**16**

Second Year

Fall	Credits	Spring	Credits
GAME 2100	2	GAME 2110	3
GAME 2040	3	COMS 2280	3
COMS 2270	4	COMS 2300	3
ENGL 2500 (or Gen Ed)	3	MATH 1660 (#* [or Gen Ed])	4

	Credits		Credits
LIB 1600	1	Game Design Exploratory Elective	3
MATH 1650 (#* [or Gen Ed])	4		
	17		**16**

Third Year

Fall	Credits	Spring	Credits
GAME 3010	3	COMS 3360	3
COMS 3110	3	Game Design Exploratory Elective	3
COMS 3270	3	General Education/Elective	3
MATH 2070, MATH 2650, or MATH 3170	3-4	General Education/Elective	3
General Education	2-3	General Education/Elective	3
	14-16		**15**

Fourth Year

Fall	Credits	Spring	Credits
GAME 4010	6	COMS 4370	3
Game Computing Elective	3	Game Computing Elective/Gen Ed/Elective	3
Game Computing/Gen Ed/Elective	3	Game Computing Elective/Gen Ed/Elective	3
General Education/Elective	3	Game Computing Elective/Gen Ed/Elective	3
	15		**12**

Total Credits: 121-123

	Credits		Credits
General Education/Elective	3	Game Design Exploratory Elective	3
General Education/Elective	3	General Education/Elective	3
	14		**15**

Third Year

Fall	Credits	Spring	Credits
GAME 3010	3	Game Worlds Elective (Open)	3
Game Design Exploratory Elective	3	Game Design Exploratory Elective	3
Game Worlds Elective (Open)	3	General Education/Elective	3
General Education/Elective	3	General Education/Elective	3
General Education/Elective	3	General Education/Elective	3
	15		**15**

Fourth Year

Fall	Credits	Spring	Credits
GAME 4010	6	Game Worlds Elective	3
Game Design Exploratory Elective	3	Game Worlds Elective/Gen Ed/Elective	3
Game Worlds Elective/Gen Ed/Elective	3	Game Worlds Elective/Gen Ed/Elective	3
General Education/Elective	3	Game Worlds Elective/Gen Ed/Elective	3
		General Education/Elective	2
	15		**14**

Total Credits: 121

Game Worlds Focus Area

First Year

Fall	Credits	Spring	Credits
DSNS 1310	4	COMS 1270	3
GAME 2020	3	ART 2120	3
ENGL 1500 (#* [or Gen Ed])	3	GAME 2030	3
MATH 1400 (#* [or Gen Ed])	3	MATH 1430 (#* [or Gen Ed])	4
GAME 2720	3	ENGL 2500	3
		LIB 1600	1
	16		**17**

Second Year

Fall	Credits	Spring	Credits
GAME 2100	2	GAME 2110	3
Game Worlds Required	3	Game Worlds Elective (Narrative)	3
Game Worlds Elective (Worlds)	3	Game Worlds Elective (Society)	3