Game Science and Design, MS

The **Master of Science (MS) in Game Science and Design** is a program that seeks to give students a comprehensive understanding of how successful game products are created in a player-centric environment. Focusing on the science of game development, students have an opportunity to learn the design and technological skills needed to build a game and develop a deep understanding of playability and analytics that make products successful in an increasingly competitive marketplace.

The game industry has expanded to include social and mobile gaming; games in health, education, and training; and innovations in play psychology, middleware, graphics tools, game mechanics, game evaluation methods, and advanced artificial intelligence and narrative techniques. It has become an increasingly competitive space.

The selectiveness of the industry and the diversity of the skills required mean that students seeking entry need both broad and deep skills. As an emergent industry using diverse technology and collaborative practices, the game industry needs professionals with interdisciplinary skill sets who can meld knowledge about development with knowledge about evaluation methods and players' behavior and psychology.

Jointly offered by Northeastern's Colleges of Arts, Media and Design and Computer and Information Science (http://www.ccs.neu.edu), the **Master in Science in Game Science and Design** is a one-of-a-kind interdisciplinary program that seeks to prepare students to meet this need by weaving together science and design. This is a two-year, 34-credit-hour program.

The degree offers three concentrations:

- Game analytics: focusing on data analysis of gameplay and other game data to make the game successful
- Game user research: focusing on gauging the user experience to enable designers to develop an enjoyable game experience
- Game design and development: focusing on the design or technical side of game development

All admitted students will be assigned to an advisor who will help them select a pathway with a coherent set of electives depending on their career goals. The advisor will also monitor their progress through the master's degree.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Core		
GSND 5110	Game Design and Analysis	4
GSND 5111	Seminar for GSND 5110	1
GSND 5122	Business Models in the Game Industry	1
GSND 5130	Mixed Research Methods for Games	4
or PPUA 5301	Introduction to Computational Statistics	
Thesis		
GSND 7990	Thesis	4

Specializations

In consultation with your faculty advisor, declare one specialization option by spring of your first year.

Complete one of the following specializations:

GAME ANALYTICS

Code	Title	Hours
Complete three of the following:		12
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
GSND 6350	Data-Driven Player Modeling	
PPUA 5302	Information Design and Visual Analytics	

GAME USER RESEARCH

Code	Title	Hours
Complete three of the following:		12
CS 5340	Computer/Human Interaction	
GSND 6320	Psychology of Play	
GSND 6330	Player Experience	
GSND 6340	Biometrics for Design	

GAME DESIGN AND DEVELOPMENT

Code	Title	Hours
Complete three of the following:		12
CS 5150	Game Artificial Intelligence	
CS 5850	Building Game Engines	
GSND 6240	Exploratory Concept Design	
GSND 6250	Spatial and Temporal Design	

Electives

Note: In consultation with your faculty advisor, you may complete two other related courses offered by all options.

Code	Title	Hours
Complete two of the following:		8
CS 5150	Game Artificial Intelligence	
CS 5340	Computer/Human Interaction	
CS 5850	Building Game Engines	
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
GSND 6240	Exploratory Concept Design	
GSND 6250	Spatial and Temporal Design	
GSND 6320	Psychology of Play	
GSND 6330	Player Experience	
GSND 6340	Biometrics for Design	
GSND 6350	Data-Driven Player Modeling	
PPUA 5302	Information Design and Visual Analytics	

Program Credit/GPA Requirements

34 total semester hours required
Minimum 3.000 GPA required

Plan of Study

Sample Two Years, One Co-op (Optional) Plan of Study

Year 1

Fall	Hours	Spring	Hours	Summer Full Semester	Hours
GSND 5110	4	Concentration elective	4	Co-op (Optional)	0
GSND 5111	1	Concentration elective	4		
GSND 5130 or PPUA 5301	4				
	9		8		0

Year 2

Fall	Hours	Spring	Hours
GSND 5122	1	General elective	4
Concentration elective	4	GSND 7990	4
General elective	4		
	9		8

Total Hours: 34

Sample Two Years, No Co-op Plan of Study

Year 1

Fall	Hours	Spring	Hours	Summer Full Semester	Hours
GSND 5110	4	Concentration elective	4	Vacation	0
GSND 5111	1	Concentration elective	4		
GSND 5130 or PPUA 5301	4				
	9		8		0

Year 2

Fall	Hours	Spring	Hours
GSND 5122	1	General elective	4
Concentration elective	4	GSND 7990	4
General elective	4		
	9		8

Total Hours: 34