

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. Successful graduates who wish to become professional game developers or game user research experts should be able to collaborate effectively in this dynamic and burgeoning field of practice and research. 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 makes products successful in an increasingly competitive marketplace.

The game industry has expanded to include social and mobile gaming; augmented and virtual reality; as well as games in health, education, and training. Rapid innovations are happening in player psychology, middleware, graphics and authoring tools, game mechanics, and 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 blend knowledge about development with knowledge about evaluation methods and players' behavior and psychology.

Jointly offered by Northeastern's College of Arts, Media and Design and Khoury College of Computer Sciences (<https://www.khoury.northeastern.edu/>), the **Master of 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.

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 and GSND 5111 and GSND 5112	Game Design and Analysis and Seminar for GSND 5110 and Recitation for GSND 5110	5
GSND 5122	Business Models in the Game Industry	1
GSND 5130 and GSND 5131	Mixed Research Methods for Games and Recitation for GSND 5130	4
Thesis		
GSND 6330 and GSND 6331	Player Experience and Recitation for GSND 6330	4
GSND 7990	Thesis	4

Electives

Code	Title	Hours
Game Design or Development		
Complete one of the following:		4
CS 5150	Game Artificial Intelligence	
CS 5850	Building Game Engines	
GSND 6000	Advanced Topics in Game Design	
GSND 6240	Exploratory Concept Design	
GSND 6250	Spatial and Temporal Design	
GSND 6460	Generative Game Design	
Game User Research or Analytics		
Complete one of the following:		4
CS 5340	Computer/Human Interaction	
GSND 6001	Advanced Topics in Game Science	
GSND 6320	Psychology of Play	
GSND 6340	Biometrics for Design	
GSND 6350	Data-Driven Player Modeling	

Code	Title	Hours
Other Electives List		
Complete any two of the previously listed courses or from the following (courses not listed below may be completed in consultation with your program coordinator).		8
If ARTG 5000 or GSND 6000 or GSND 6001 is completed more than once, the additional completions may be allowed toward the electives.		
Elective courses outside of CAMD are subject to availability and registration policy of the home college.		
ARTG 5000	Topics in Design	
ARTG 5130	Visual Communication for Information Design	
ARTG 5310	Visual Cognition	
ARTG 5330	Visualization Technologies 1: Fundamentals	
ARTG 5610	Design Systems	
ARTG 5640	Prototyping for Experience Design	
ARTG 6310	Design for Behavior and Experience	
CS 5520	Mobile Application Development	
CS 5610	Web Development	
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
GSND 6000	Advanced Topics in Game Design	
GSND 6001	Advanced Topics in Game Science	
INSH 5302	Information Design and Visual Analytics	
JRNL 6341	Telling Your Story with Data	

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 and GSND 5111 and GSND 5112		5 Elective		4 Co-op (optional)	0
GSND 5130 and GSND 5131		4 Elective		4	
		9			8
0					
Year 2					
Fall	Hours	Spring	Hours		
GSND 5122		1 GSND 7990		4	
GSND 6330 and GSND 6331		4 Elective		4	
Elective		4			
		9			8
Total Hours: 34					

Note: Co-op or Thesis Co-op is optional in consultation with faculty advisor.