GSND 5110. Game Design and Analysis. 4 Hours.
Provides theoretical background and foundation for analyzing and
designing games. Examines fundamental domains that are necessary
to understand what games are and how they affect players, including
but not limited to interface design, level design, narrative, learning,
and culture. Presents relevant concepts and frameworks from a wide variety
of disciplines—psychology, phenomenology, sociology, anthropology,
media studies, affect theories, learning theories, and theories of
motivation—for each domain. Explains the core elements of game
design, introduces students to formal abstract design tools, explores
several models of design process and iteration, and offers students an
opportunity to practice game design in groups.

GSND 5111. Seminar for GSND 5110. 1 Hour.
Offers students an opportunity to discuss and analyze selected games,
applying concepts from GSND 5110. Exposes students to a varied mix
of AAA and indie titles and demonstrates how to analyze and appreciate
them. Open to seniors; restricted to students in selected colleges.

GSND 5122. Business Models in the Game Industry. 1 Hour.
Examines the underlying business structure of the interactive digital
entertainment industry and the characteristics of the various participants,
notably developers and publishers. Seeks to deliver insight into key
business models within the game industry and how the economic
challenges interact. Explores the game business landscape across
the industry spectrum, ranging from AAA, mobile, casual to indie
development. Examines market strategies currently in practice and how
they are linked with game analytics. Topics range from retail vs. online,
free-to-play modes vs. pay-to-play, as well as basic monetization and
distribution channels. Designed to serve as an overview of the various
stakeholders in the industry and how they interact.

GSND 5130. Usability and Empirical User Research. 4 Hours.
Focuses on methods and methodologies from human-computer
interaction (HCI) and their use in different applications, including apps,
Web applications, games, and virtual worlds. Covers the basics of user-
oriented evaluation, associated topics, and usability methods. Introduces
the design process, usability heuristics, HCI paradigms, task models,
and cognitive models. Examines quantitative and qualitative analysis of
data. Offers students an opportunity to delve into experimental design,
institutional-review-board approvals, ethics, research subject recruitment,
and experiment implementations. Applies concepts through concrete
projects, case examples, and exercises. Expects students to be running
assignments continually and trying out different evaluation methods and
methodologies.

GSND 6240. Exploratory Concept Design. 4 Hours.
Explores the process of designing new modalities of interaction utilizing
novel uses of established technology, e.g., pervasive and affective
technologies. Focuses on philosophy and practice of creating
and addressing new technologies and forms of interaction from
a research perspective, focusing on their larger implications and potential
impact on play.

GSND 6250. Spatial and Temporal Design. 4 Hours.
Explores the development and understanding of spaces used by people
in 3D and 2D virtual environments. Uses an iterative process of making,
critiquing, experiencing, and analyzing spatial form; compositional ideas
for form making; and critical thinking. Offers students an opportunity
to develop the arbitrary, yet necessary, mindset needed to make
assumptions about aesthetic spatial values and expected player
behaviors. Analyzes the connection between spatial-aesthetic elements
and their effects on players’ psyches. Experiments with how spaces,
textures, shapes, and colors can support different synchronous moods.
Explores how to shape spaces that fit the rational, emotional, and
behavioral profile of different types of players. Applies concepts learned
from architecture and game-level design to extend students’ creative
and critical abilities.

GSND 6320. Psychology of Play. 4 Hours.
Explores theories of perception, motivation, needs, learning, goals,
and belief systems as they pertain to games and play. Examines
psychological principles, including visual and audio perception, emotions,
behavior, personality, and the more recent scientific discoveries around
psychological models explaining play behavior or motivation theories
behind play. Introduces how players learn in and from games based on
the relationship of play to learning theories. Forms a solid theoretical
basis for a new segmentation tool—psychographics. Explores visual and
cultural archetypes, digging into comics, movie sets, and cartoons to
distill the what makes people tick in certain ways relating to universal
theories of perception and gestalt theories. Applies the theories through
critical analysis of play behavior and games.

GSND 6330. Game User Research. 4 Hours.
Focuses on topics of player psychology—cognition; memory; emotions;
attention; and game-focused theories such as engagement, fun, user
experience, player-need-satisfaction model, and flow. The development
cycle of any game relies on the understanding of the players, the
target market of the game product. Covers game usability engineering
and game-specific evaluation methods, such as play testing, rapid
iterative testing and evaluation (RITE), play-heuristic evaluation, and
retrospective play reviews. Offers students an opportunity to learn how
to analyze qualitative and quantitative data and to apply parametric
and nonparametric statistical evaluation methods, qualitative data coding
and analysis, and descriptive statistics. Requires students to apply
visualization techniques of data and reporting.

GSND 6340. Advanced Game User Research. 4 Hours.
Builds on GSND 6330, covering the domain of psycho-physiological
testing and more advanced statistics. Introduces theory and research
in major areas of human psychology, including cognition, emotions,
and attention. Studies the principles, theory, and applications of
psycho-physiological assessment inside and outside interactive digital
entertainment. Offers students an opportunity to understand the basics
of eye tracking—eye movements, fixations, saccades. Applies methods
of data collection, cleaning, and analysis for both physiological and eye-
tracking data. Covers all issues of using such measurements, including
validity of conclusions and confounding variables. Covers the process of
triangulation and repotting in-depth along the entire process of the game
production life cycle.
GSND 6350. Game Analytics. 4 Hours.
Introduces the topic of game analytics, defined as the process of
discovering and communicating patterns in data with a goal of solving
problems and developing predictions in user behavior supporting
decision management, driving action, and/or improving game products.
Covers the fundamental tools, methods, and principles of game analytics,
including the knowledge-discovery process, data collection, feature
extraction and selection, pattern recognition to aid in prediction and
churn analysis, visualization, and reporting. Covers analytics across
game forms, notably online games and delivery platforms. Presents
analytical tools recommended during development and tools designed for
ongoing maintenance of games.

GSND 6984. Research. 1-4 Hours.
Offers students an opportunity to conduct research under faculty
supervision. May be repeated up to four times.

GSND 7976. Directed Study. 1-4 Hours.
Offers independent work under the direction of members of the
department on chosen topics. May be repeated without limit.

GSND 7990. Thesis. 4 Hours.
Focuses on preparing a master's thesis under faculty supervision.

GSND 7995. Games Project. 4 Hours.
Offers students an opportunity to obtain practical experience working on
a project with a faculty member. Allows students to work with faculty in
the program to develop their own project and apply the knowledge gained
through the master’s courses.

GSND 7996. Thesis Continuation. 0 Hours.
Offers continued work on the thesis project.