



Beginning in the Fall of 2011, students from any school in NYU will be able to declare a minor in Game Design through the NYU Game Center. This document describes what the minor is and how to declare it, includes a form that will help students work with the Game Center to track their progress through the minor, and also includes a list of pre-approved classes that may be counted towards the elective courses requirement of the minor.

### **Overview**

The NYU Game Center's minor in Game Design is an 18-credit minor that will provide students with a robust set of tools for the design, production, and study of games. The core of the minor consists of 12 credits from the Game Center's diverse offering of courses on game design, production, and theory. Reflecting the interdisciplinary nature of game design, the remaining 6 elective credits can be drawn from a wide range of programs throughout the university. The Game Center will maintain a list of pre-approved electives, organized in broad categories that will allow students to easily receive the minor based on their specialization. Additionally, students are welcome to submit unlisted courses related to Game Design to a Game Center advisor, who will approve these classes on a case-by-case basis.

With a strong base of dynamic Game Center courses, a simple and open process for accepting courses from other parts of the University, and guidance from the Game Center's faculty, the Game Design Minor will prepare students for the multi-disciplinary and rapidly evolving field of Game Design.

### **Required Courses (12 Credits)**

Students are required to take 12 credits of Game Center classes to fulfill the required portion of the minor. Beginning in the Fall of 2012, Games 101 will be a required class, and the remaining 8 credits can be filled with any other Game Center classes.

### **Elective Courses (6 Credits)**

Elective credits can be filled by Game Center classes, any class from the pre-approved elective courses list, or if the student feels an unlisted course is related to the study of game design, they can submit a request for credit to the Game Center's Program Coordinator. These classes will be evaluated on a case-by-case basis.

The list of pre-approved electives is a list of courses from around the University that the Game Center faculty has selected to compliment and augment a study of Game Design. The full list of pre-approved electives is available on the Game Center site, located here:

[gamecenter.nyu.edu/courses](http://gamecenter.nyu.edu/courses)

Each semester, this webpage will be updated to show only classes that are available in the upcoming semester so that students can easily plan out their course path.

To request that a course that does not appear on the pre-approved list be evaluated for credit, contact the Game Center's Program Coordinator via the contact information listed below.

## **How to Declare the Minor in Game Design**

While it is not required that students speak with the Game Center to get the minor, due to the openness of the elective credits, we highly suggest that students fill out and submit a minor progress form (found at the end of this document) to the Program Coordinator as early as their sophomore or junior year. This will ensure that the intended courses will allow the student to declare the minor. This is particularly true if the student plans to request credit for a class that has not been pre-approved because the Game Center faculty will need time to vet newly proposed classes.

Each college within the University has a slightly different process for declaring a minor. The specific steps are organized below by school:

### Tisch Students

1. Download the Declaration of Minor form. (<http://www.tisch.nyu.edu/object/PMdecform.html>)
2. Review the course requirements and electives and indicate which courses you propose to complete for the minor. Please note that you can make changes to your proposed course sequence if you decide to change your elective courses.
3. Have your major department advisor sign off on the form.
4. Have the Game Center Program Coordinator sign the completed Minor Progress Form (found at the end of this document)
5. Submit the forms to 721 Broadway, room 1246. Please allow four to six weeks for the minor to appear on your Albert transcript. If the minor does not appear after six weeks, please contact Tisch Special Programs.

### Steinhardt & Stern Students

1. Visit your primary advisor and request Steinhardt's/Stern's declaration of a minor form.
2. Review the course requirements and electives and indicate which courses you propose to complete for the minor. Please note that you can make changes to your proposed course sequence if you decide to change your elective courses.
3. Bring the form to 721 Broadway, room 1246 for the minor department approval.
4. Take the form back to your primary advisor for the major department approval. Please allow four to six weeks for the minor to appear on your Albert transcript. If the minor does not appear after six weeks, please contact Tisch Special Programs.

### College of Arts and Science Students

CAS students are permitted to take a maximum of 16 points from other divisions of the university. Please note that the Tisch courses that CAS students take as part of this minor will count toward those 16 points.

To Declare the Minor:

1. Review the producing minor course requirements and electives and submit a plan indicating which courses you propose to complete for the minor. Please note that you can make changes to your proposed course sequence if you decide to change your elective courses.
2. Log on to your NYU Home, go to the Academics tab, and look for the link to cross-school minors.
3. Please visit Silver 901 (CAS Advising) for assistance or further information.
4. Please allow four to six weeks for the minor to appear on your Albert transcript. If the minor does not appear after six weeks, please contact Tisch Special Programs.

### Gallatin Students

1. Obtain your Advisor's approval
2. Completing the electronic Application for Cross-School Minors (available on Albert under the Academic Records menu)

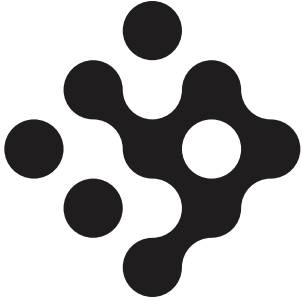
Once all everything is approved, Gallatin will record the minor on your record and it will then become part of your degree requirements.

### NYU Poly Students

We are formulating a policy for receiving a minor in Game Design for Poly students. If you are a NYU Poly student interested in receiving this minor, please contact the Game Center's Program Coordinator for more information.

### **How to Contact the Game Center**

For more information on the Game Design Minor please contact the Game Center's Program Coordinator, Dylan McKenzie. He can be reached at [gamecenter@nyu.edu](mailto:gamecenter@nyu.edu), by calling 212-998-1973 or during office hours Monday- Friday 9AM-5PM at 721 Broadway, Room 940.



# Game Design Minor Progress Form

Name: \_\_\_\_\_

Email: \_\_\_\_\_

School: \_\_\_\_\_

N Number: \_\_\_\_\_

Academic Year: \_\_\_\_\_

Year of Graduation: \_\_\_\_\_

## Required Courses (12 Credits)

Credits

Term Completed

1. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Elective Courses (6 Credits)

1. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

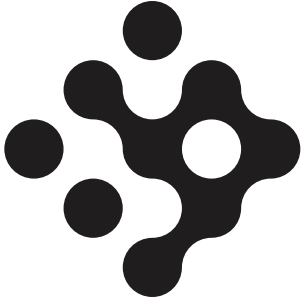
Credits Total \_\_\_\_\_

Student Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Advisor Signature: \_\_\_\_\_

Date: \_\_\_\_\_



# Game Design Minor Progress Form

Name: John Doe

Email: John.Doe@nyu.edu

School: Tisch

N Number: NXXXXXXXXX

Academic Year: Senior

Year of Graduation: 2012

## Required Courses (12 Credits)

	Credits	Term Completed
1. <u>Games 101</u>	<u>4</u>	<u>Fall 2011</u>
2. <u>Introduction to Game Design</u>	<u>4</u>	<u>Spring 2011</u>
3. <u>Advanced Game Design</u>	<u>4</u>	<u>Spring 2012</u>

## Elective Courses (6 Credits)

1. <u>Introduction to Computer Science</u>	<u>4</u>	<u>Fall 2008</u>
2. <u>Logic</u>	<u>4</u>	<u>Spring 2009</u>

Credits Total 20

Student Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Advisor Signature: John Doe

Date: 10/04/2011

# **Game Center Courses - Updated Fall 2011**

*Any Game Center course can be taken to count towards the required and elective requirements.*

## **Games 101**

**Course Number: OART-UT 1600**

**Credits: 4**

Games 101 is the foundational course for the NYU Game Center. The focus of Games 101 is game literacy – a shared understanding of games as complex cultural and aesthetic objects. The class will incorporate lectures, discussion, readings, and writing assignments, but the primary activity of the class is critical play – playing games in order to better understand and appreciate them. The class will cover games on and off the computer, including classic and contemporary board and card games, sports, and games on the PC, internet, and consoles.

## **Introduction to Game Design**

**Course Number: OART-UT 1605/2605**

**Credits: 4**

This class is an intensive, hands-on workshop addressing the complex challenges of game design. The premise of the class is that all games, digital and non-digital, share common fundamental principles, and that understanding these principles is an essential part of designing successful games. Learning how to create successful non-digital games provides a solid foundation for the development of digital games.

In this workshop, students will; analyze existing digital and non-digital games, taking them apart to understand how they work as interactive systems; create a number of non-digital games in order to master the basic design principles that apply to all games regardless of format; critique each other's work, developing communication skills necessary for thriving in a collaborative field; explore the creative possibilities of this emerging field from formal, social, and cultural perspectives; develop techniques for fast-prototyping and iterative design that can be successfully applied to all types of interactive projects.

## **Advanced Game Design**

**Course Number: OART-UT 1609/2609**

**Credits: 4**

The focus of this class is the actual creation of several non-digital games. Students deeply explore advanced topics in game design, wrestling with complex and challenging problems, such as formal play-testing procedures, balancing game economies, and designing games for learning. The class will cover both the craft and the culture of making games, and has a particular emphasis on how designers communicate their ideas. Although most of the projects will take the form of non-digital design, the course will address the application of ideas and procedures to digital games.

## **Thinking About Games**

**Course Number: OART-UT 1606/2606**

**Credits: 4**

This class is an overview of the field of games that approaches them from several theoretical and critical perspectives. No special theoretical background or prior training is needed to take the course, but to have had a broad practical experience with and basic knowledge of games is a distinct advantage. Also, an interest in theoretical and analytical issues will help. You are expected to actively participate in the lectures, which are dialogic in form, with ample room for discussion.

The course will prepare the student to: Understand and discuss games from a theoretical perspective, as well as the components of a game; Apply new theories and evaluate them critically; Assess and discuss game concepts and the use of games in various contexts; Analyze games, and understand and apply a range of analytical methods.

## **Advanced Topics in Game Studies**

**Instructor: Jesper Juul**

**Credits: 4**

Advanced Topics in Game Studies is a category of class that allows students to focus in-depth on a specific topic in game studies. The focus of the course will vary from semester to semester, but will be based on current issues in video game theory, video game design and video game culture. Some example courses include: Social Games, Games and Storytelling, Convention and Experiment in Video Games, and Casual Games. Students will actively participate in the development of video game theory.

### **Game Development: Modding**

**Course Number: OART-UT 1610/2610**

**Credits: 4**

In this course, students get practice building game play experiences through a series of short-cycle exercises. Students work in small teams to create and tune gaming experiences in a range of game genres, using the game engine that they will use in Game Studio (a semester-long project class). The course introduces students to production roles, playtesting, considerations of audience and platform, and other practical concerns in building games.

### **Game Development Workshop**

**Course Number: OART-UT 1604**

**Credits: 4**

This course reflects the various skills and disciplines that are brought together in modern game development: game design, programming, visual art, animation, sound design, and writing. The workshop will situate these disciplines within a larger context of game literacy and a historical and critical understanding of games as cultural objects. Classroom lectures and lab time will all be used to bring these different educational vectors together into a coherent whole; the workshop will be organized around a single, long-term, hands-on, game creation project. Working in small groups under the close supervision of instructors, students will collaborate on the creation of a playable game. As a creative constraint to help inspire them and guide their designs, the students will be given a theme to express in their game projects

## **Pre-Approved Elective Courses**

### **Game Design**

#### **Game Development Studio I**

**Course Number: DM 2153**

**Credits: 3**

**College: NYU Polytechnic**

**Department: Digital Media**

This course guides students through contemporary thought in game design, development, user testing and deployment. The course will benefit students interested in research or employment opportunities in game design or in related fields that require an understanding of human-computer interaction. This seminar provides a foundation understanding of how games are developed, tested and experienced.

#### **Game Development Studio II**

**Course Number: DM 3153**

**Credits: 3**

**College: NYU Polytech**

**Department: Digital Media**

This class continues from DM 2153, moving into advanced technological implementations of 2D games. Taking designs from DM 2153 and working in teams, students create a complete game. Students, based on abilities and individual goals, are assigned individually to work in production areas ranging from sprite creation, mapping and level design to engine coding and interaction scripting. Students are responsible for completing their assignments as if they were members of a professional game-development team.

### **Game Development Studio III**

**Course Number: DM 4153**

**Credits: 3**

**College: NYU Polytechnic**

**Department: Digital Media**

This course guides students through contemporary thought in game design, development, user testing and deployment. The course will benefit students interested in research or employment opportunities in game design or in related fields that require an understanding of human-computer interaction. This seminar provides a foundation understanding of how games are developed, tested and experienced.

## **History/Criticism/Analysis/Theory**

### **Research on Simulations and Games for Learning**

**Course Number: EDCT-GE 2505**

**Credits: 3**

**College: Steinhardt**

**Department: Administration, Leadership, & Technology (Graduate Level)**

Examines the potential of various genres of simulation and games (both analog and digital) as learning technologies through readings, discussion, play, design, and research. Literacy, identity, genre, interactivity, play, story, emotions, presence, and information visualization are among the cultural and cognitive concepts covered in this course. Student-selected assignments typically include reflections on game and simulation play, integrating games and simulations in formal learning environments, designing and developing prototypes of educational games and simulations, and conducting short exploratory research.

### **Introduction to Digital Media**

**Course Number: MCC-UE 1003**

**Credits: 4**

**College: Steinhardt**

**Department: Media, Culture, and Communication**

This course is an introduction to digital media, focusing on networks, computers, the Web, and video games. Theoretical topics include the formal qualities of new media, their political dimensions, as well as questions of genre, narrative, and history.

### **Video Games: Culture and Industry**

**Course Number: MCC-UE 1008**

**Credits: 4**

**College: Steinhardt**

**Department: Media, Culture, and Communication**

The course examines the emergence of video games as site of contemporary cultural production and practice. It pays special attention the symbolic and aesthetic dimensions of video games, including their various narratives forms and sub-genres, and concentrates on their interactive dimensions. The course provides insight into the emerging trends in the interface between humans and media technologies. The course also situates video games within the business practices of the entertainment industries.

**Media and Identity****Course Number: MCC-UE 1019****Credits: 4****College: Steinhardt****Department: Media, Culture, and Communication**

This course will examine the relationship between mediated forms of communications the formation of identities, both individual and social. Attention will be paid to the way mediated forms of communication represent different social and cultural groupings, with a particular emphasis on gender, race, ethnicity, class and nationality.

**Logic****Course Number: PHIL-UA 70****Credits: 4****College: College of Arts and Sciences****Department: Philosophy**

An introduction to the basic techniques of sentential and predicate logic. Students learn how to put arguments from ordinary language into symbols, how to construct derivations within a formal system, and how to ascertain validity using truth tables or models.

**Quantitative Reasoning: Probability, Statistics and Decision Making****Course Number: MAP-UA 107****Credits: 4****College: Courant Institute of Mathematical Sciences****Department: Mathematics**

This course examines the role in mathematics in making “correct” decisions. Special attention is devoted to quantifying the notions of “correct,” “fair,” and “best” and using these ideas to establish optimal decisions and algorithms to problems of incomplete information and uncertain outcomes. The mathematical tools used include a selection of topics in statistics, probability, game theory, division strategies, and optimization.

**Probability and Statistics****Course Number: MATH-UA 235****Credits: 4****Prerequisite: V63.0122 Calculus II with a grade of C or better and/or the equivalent.****College: Courant Institute of Mathematical Sciences****Department: Mathematics**

A combination of Theory of Probability and Mathematical Statistics at a more elementary level, so as to afford the student some acquaintance with both probability and statistics in a single term. In probability: mathematical treatment of chance; combinatorics; binomial, Poisson, and Gaussian distributions; law of large numbers and the normal approximation; application to coin-tossing, radioactive decay, etc. In statistics: sampling; normal and other useful distributions; testing of hypotheses; confidence intervals; correlation and regression; applications to scientific, industrial, and financial data.

**Quantitative Reasoning: Mathematics and Computing using Python****Course Number: MAP-UA 109****Credits: 4****College: Courant Institute of Mathematical Sciences****Department: Computer Science**

This course teaches key mathematical concepts using the exciting new Python programming language. The first part of the course teaches students how to use the basic features of Python: operations with numbers and strings, variables, boolean logic, control structures, loops and functions. The second part of the course focuses on the

phenomena of growth and decay: geometric progressions, compound interest, exponentials and logarithms. The third part of the course introduces three key mathematical concepts: trigonometry, counting problems and probability. Students use Python to explore the mathematical concepts in labs and homework assignments. No prior knowledge of programming is required.

### **Strategic Decision Making**

**Course Number: ECON-UA 310**

**Credits: 4**

**Prerequisite: ECON-UA 11**

**College: College of Arts and Sciences**

**Department: Economics**

**Introduction to noncooperative** game theory. Focuses on a rigorous development of the basic theory with economic applications such as competition among oligopolists, how standards are set, auction theory, and bargaining. The formal topics include games in strategic form, Bayesian games, and games in extensive form.

### **Hypermedia in Context**

**Course Number: STS 3173**

**Credits: 3**

**College: NYU Polytechnic**

**Prerequisite: One Level 2 STS cluster elective.**

**Department: Science and Technology Studies**

This course investigates precursors to new media, revealing the possibilities and limitations of today's incarnations. Students search analog media for examples of supposedly new technologies like associative thinking, multimedia and participatory design, and examine the social and economic structures that allow for such tools to arise and to determine what exactly is new in new media. Further, the course considers how to use the concept of antecedent to critique present manifestations of media and how to incorporate ideas from the past into the present while avoiding homologies.

### **Cognition**

**Course Number: PYSCH-UA 29**

**Credits: 4**

**College: College of Arts and Sciences**

**Department: Psychology**

Introduction to theories and research in some major areas of cognitive psychology, including human memory, attention, language production and comprehension, thinking, and responding.

### **Social Psychology**

**Course Number: PSYCH-UA 32**

**Credits: 4**

**College: College of Arts and Sciences**

**Department: Psychology**

Introduction to theories and research about the social behavior of individuals, such as perception of others and the self, attraction, affiliation, altruism and helping, aggression, moral thought and action, attitudes, influence, conformity, social exchange and bargaining, group decision making, leadership and power, and environmental psychology.

**New Media Research Studio****Course Number: MCC-UE 1029****Credits: 4****College: Steinhardt****Department: Media, Culture and Communication**

A project-based, research-intensive course that explores emerging practices and trends in new media with particular emphasis on interactive and immersive environments, such as social networking sites, multi-player online environments, the blogosphere, the open source movement, social activist groups, and internet-based art. Students engage in a semester-long participatory research project using collaborative web tools.

**Humans, Machines, and Aesthetics****Course Number: IDSEM-UG 1571****Credits: 4****College: Gallatin**

This seminar proffers a glimpse into the historically contingent relationships between machines and humans from the Enlightenment through the Industrial Revolution to the twentieth century. We shall underscore the ways in which those interactions helped define aesthetics, particularly but not exclusively in music. In essence we hope to use machines and music to trace the history of creativity over the past three centuries. Immanuel Kant famously defined genius in his Third Critique as a talent for producing something for which no determinate rule can be given, not a predisposition consisting of a skill for something that can be learned by following some rule or other; hence the foremost property of genius must be creativity. By this definition mimicry and imitation are the antitheses of the creative genius, while mechanical skill and machines were deemed inferior to it. During the later stages of the Industrial Revolution, however, there arose an aesthetic of mass production. Quantity as Lenin would famously remark a century later had a quality all its own, and a new aesthetics celebrated how an artifact could be perfectly copied thousands of times over, with unprecedented speed, precision, and efficiency. Central questions and debates follow from this development: How “creative,” if at all, are machines? Are mechanical musical instruments superior to performers? How are humans different, if at all, from machines? Readings include Kant’s Third Critique, Jackson’s Harmonious Triads, Walter Benjamin’s The Work of Art in the Age of Mechanical Reproduction, Essinger’s Jacquard’s Web, Standage’s The Turk, Riskin’s (ed.), Genesis Redux, Katz’s Capturing Sound, and Thberge’s Any Sound You Can Imagine.

**Playing Video Games: Theory/History/Practice****Course Number: IDSEM-UG 1635****Credits: 4****College: Gallatin**

Video games are an increasingly ubiquitous form of media, but what are they, how do they work and who plays them? And what can we learn from them, about them and through them? In this course we will explore the histories of video games as well as the key ways in which video games, games in general and play have been theorized in the humanities and social sciences. One of the central questions theorists of play have is exactly how do we define play and how does it relate to games, work, war, sociability, learning and other key concepts. We will read and discuss a broad range of texts about play and about video games from authors including Johan Huizinga, Roger Caillois, Clifford Geertz, David Sudnow, Jesper Juul and McKenzie Wark. We will also play with a range of games, old and new, both in and out of class. No special video game systems, experience or equipment is required.

**Intelligence: Real and Artificial****Course Number: PS 2663****Credits: 3****College: NYU Polytech**

**This course explores the** nature of intelligence, both human and computer, and covers historical debates centered on intelligence testing. Can computers be programmed to think? If they can, what would a “thinking” computer look like? The course covers issues such as the Turing test and human-computer interaction.

**Social Psychology in Virtual Worlds****Course Number: PS 3813****Credits: 3****Requirement: One Level 2 PS Elective****College: NYU Polytech**

This course explores human relations in the virtual world. Do real-world interactions maintain themselves in an online community, or do the rules of social interaction change significantly in a virtual environment? When people perceive themselves as being anonymous, do they feel the same responsibility for their own behavior, or do they interact with others differently as they would in the real world? This course examines the psychology of online, virtual relationships with a view to compare and contrast them with real-world relationships.

**New Media Research Studio****Course Number: MCC-UE 1029****Credits: 4****College: Steinhardt****Department: Media, Culture and Communication**

A project-based, research-intensive course that explores emerging practices and trends in new media with particular emphasis on interactive and immersive environments, such as social networking sites, multi-player online environments, the blogosphere, the open source movement, social activist groups, and internet-based art. Students engage in a semester-long participatory research project using collaborative web tools.

**Hypermedia in Context****Course Number: STS 3173****Credits: 3****College: NYU Polytech**

This course investigates precursors to new media, revealing the possibilities and limitations of today’s incarnations. Students search analog media for examples of supposedly new technologies like associative thinking, multimedia and participatory design, and examine the social and economic structures that allow for such tools to arise and to determine what exactly is new in new media. Further, the course considers how to use the concept of antecedent to critique present manifestations of media and how to incorporate ideas from the past into the present while avoiding homologies.

# Programming

## **Introduction to Computer Programming**

**Course Number: CSCI-UA 2**

**Credits: 4**

**Prerequisites: Three years of high school mathematics or equivalent. No prior computer experience assumed. Students with any programming experience should consult with the computer science department before registering. Students who have taken or are taking V22.0101 will not receive credit for this course.**

**Note: This course is not intended for computer science majors, although it is a prerequisite for students with no previous programming experience who want to continue in V22.0101.**

**College: Courant Institute of Mathematical Sciences**

**Department: Computer Science**

Elementary introduction to programming. The characteristics of computers are discussed and students design, code, and debug programs using a high level programming language.

## **Introduction to Computer Science**

**Course Number: CSCI-UA 101**

**Credits: 4**

**Prerequisite: V22.0002 or departmental permission assessed by placement exam.**

**College: Courant Institute of Mathematical Sciences**

**Department: Computer Science**

Students learn how to design algorithms to solve problems and how to translate these algorithms into working computer programs. Experience is acquired through programming projects in a high level programming language. Intended as a first course for computer science majors, and for students of other scientific disciplines.

## **Introduction to Programming and Problem Solving**

**Course Number: CS 1114**

**Credits: 3**

**College: NYU Polytechnic**

**Department: Computer Science**

An introduction to computer programming and problem solving. General topics covered include the fundamentals of programming, good software development practices and solving problems using computer programming. Specific topics include compiling, running and debugging a program, program testing, documentation, variables and data types, assignments, arithmetic expressions, input and output, top-down design and procedures, the random number generator, conditionals and loops functions, arrays, and an introduction to classes and object oriented programming. Grade of C- or better required of undergraduate computer science and computer engineering majors.

## **Interactive Computer Graphics**

**Course Number: CS 6533**

**Credits: 3**

**Prerequisites: CS 5403 or equivalents, knowledge of C or C++ programming**

**College: NYU Polytechnic**

**Department: Computer Science**

This course introduces the fundamentals of computer graphics with hands-on graphics programming experiences. Topics include: graphics software and hardware, 2D line-segment scan conversion, 2D and 3D transformations, viewing, clipping, polygon scan-conversion, hidden-surface removal, illumination and shading, compositing, texture mapping, ray tracing and radiosity, scientific visualization, and so on.

## **Flash Programming**

**Course Number: CSCI-UA 380**

**Credits: 4**

**Prerequisite: CSCI-UA 2 & CSCI-UA 4**

**College: Courant Institute of Mathematical Sciences**

**Department: Computer Science**

Flash in its many guises has become ubiquitous on the Web and in our lives. It serves many different purposes: it is a drawing program; it is an animation program; and it is a full-featured, modern programming language. As such, it can be approached from several different viewpoints. In particular it can attract both the artist and the computer programmer. In this class, we will explore Flash in many of its aspects from the very simplest animations to some fairly complex programming projects. We will create examples and take on projects ranging from advertisements to web site navigation to games.

## **Special Topics: iPhone Programming**

**Course Number: V22.0480.002**

**Credits: 4**

**College: College of Arts and Sciences**

**Department: Computer Science**

In this course, we will learn to create applications for Apple's iPhone 3Gs using Objective-C and the iPhone SDK.

## **Special Topics: Introduction to Computer Vision**

**Course Number: V22.0480.001**

**College: College of Arts and Sciences**

**Department: Computer Science**

An introduction to the field of computer vision. Basic concepts will be covered such as edge detection, stereo vision, motion, color, texture and recognition.

# **Visual**

## **Visual Foundation Studio**

**Course Number: DM 1123**

**Credits: 3**

**College: NYU Polytechnic**

**Department: Digital Media**

This studio introduces the fundamentals of visual communication design: Color, composition, motion and interaction. The primary creation tool will be Processing, a Java-based graphics development tool for nonprogrammers. Once students learn general compositional principles with Processing, they are introduced to video for capturing color, form and motion.

## **3D Graphic Studio I**

**Course Number: DM 2842**

**Credits: 3**

**College: NYU Polytech**

**Department: Digital Media**

The project is a sequence of three phases to balance the need for structure with the reality of high-quality animation work: it takes time. Students must devote considerable out-of-class time to achieve good results. Through case studies and group discussion, students are encouraged to develop creative and critical skills, as well as proficiency. The course is a combination of "art" and "technique."

### **3D Graphic Studio III**

**Course Number: DM 4133**

**Credits: 3**

**College: NYU Polytechnic**

**Department: Digital Media**

The project is a sequence of three phases to balance the need for structure with the reality of high-quality animation work: it takes time. Students must devote considerable out-of-class time to achieve good results. Through case studies and group discussion, students are encouraged to develop creative and critical skills, as well as proficiency. The course is a combination of “art” and “technique.”

### **Introduction to Animation Techniques**

**Course Number: FMTV-UT 41**

**Credits: 4**

**College: Tisch School of the Arts**

**Department: Kanbar UG Film & Television, Animation Area**

A beginning course that concentrates on the basic techniques of animation; it is also the main prerequisite for entry into all the other animation courses. Class exercises explore a variety of techniques, materials, design, and writing for animation. Techniques include flip book, clay, collage, and drawing from the model. All work is tested on video, followed by 16mm color film. Please note that you do not have to “know how to draw” in order to take this course. The course will demonstrate how drawing and graphics relate. At the end of the semester each student will have an edited, two-minute reel of his or her successful animations and experiments.

### **Introduction to 3D Computer Animation**

**Course Number: FMTV-UT 1110**

**Credits: 3**

**College: Tisch School of the Arts**

**Department: Kanbar UG Film & Television, Animation Area**

This is an introductory course in 3D computer animation and modeling. Students use Autodesk Maya software to create still life compositions, virtual sets and a short animated final project. There are in-depth discussions of CGI production methods as well as artistic techniques used by professional studios to obtain more life-like animations and compelling environments. Students have access to state of the art SGI, Windows and Mac workstations as well as the highest end software used in the computer graphics fields. The class emphasizes artistic expression utilizing this technical medium. Students are encouraged to explore the possibilities of CGI to create short animated stories.

### **Intermediate 3D Computer Animation**

**Course Number: FMTV-UT 1113**

**Credits: 3**

**Prerequisites: Introduction to 3D Computer Animation (FMTV-UT 1110)**

**College: Tisch School of the Arts**

**Department: Kanbar UG Film & Television, Animation Area**

This is an intermediate-level course in 3D computer animation using Autodesk Maya Software. This is an intensive class in the art of computer animated character development and animation. Students learn to set up (rig) a 3D character. Lip-synching, walk cycles and non-linear animation are covered. For final assignments, students create, rig, animate, and render a simple 3D character.

**Advanced 3D Computer Animation****Course Number: FMTV-UT 1117****Credits: 3****Prerequisites: Intermediate 3D Computer Animation (FMTV-UT 1113)****College: Tisch School of the Arts****Department: Kanbar UG Film & Television, Animation Area**

Students spend the entire term working on a single short animated film using Autodesk Maya software. Students work on projects individually or in teams. Emphasis is placed on story, animation, pacing, and the creation of detailed models and sets.

**Introduction to Digital Art****Course Number: ART-UE 303****Credits: 4****College: Steinhardt****Department: Studio Art**

The use of the computer to augment & expand conceptualization & expression has provided the artist with some of the most important new means for visual thinking since the Renaissance invention of perspective. Students learn how to use the computer as an extension of the visualization process & its specific applications in both two-dimensional & three-dimensional art.

**Projects in Digital Art****Course Number: ART-UE 1381****Credits: 3****College: Steinhardt****Department: Studio Art**

Focus on particular subjects or techniques allows students to broaden the range of their skills & expression. Projects are chosen as a result of both faculty & student interest. Students will be required to register for a non-credit lab section (hours TBA), which will allow them to work one-on-one with the instructor in the Advanced Digital Print Studio to experiment with techniques & materials.

**Special Topics: Introduction to Motion Capture****Course Number: V22.0480.004 (Waiting to be Updated)****Credits: 4****College: College of Arts and Sciences****Department: Computer Science**

Motion Capture is the process of recording human movement (or other movement) in physical space, and transforming that information in a computer-usable form. The use of Motion Capture has become of increased popularity, due to recent technological advances, and increased demand in the entertainment industry. This class gives students the opportunity to learn this new technology and develop art or science projects around it. In parallel, we will also cover various topics of motion capture, and what other people are doing with it, with a focus on art & entertainment projects. This class is open to students of various backgrounds (Art, Dance, Science, Film, Architecture, Music etc etc -- (It is listed as a computer science class, but no strong programming skills are necessary if you are not a computer science student). Students should be able to use computers in a creative way. We will teach all the software components to you. Supported platforms are MAX/MSP Jitter, Maya, 3D Studio Max, Matlab, C++, and many other software environments.

# **Production/Project Management**

## **Strategic Analysis For Success in Digital Age**

**Course Number: MGMT-UB 16**

**Credits: 2**

**Prerequisite: MGMT-UB 1**

**College: Stern**

**Department: Management & Organizations**

The emphasis of this course is on using the tools of organizational and strategic analysis to understand the competitive vortex that has been caused by digital convergence in entertainment, media, and technology firms. The course takes a managerial point of view—emphasizing the framing and resolution of large, multidimensional problems. As such, the course asks students to act as advisers to general managers or as general managers themselves. The course involves case analyses that require application of the conceptual materials read for each class. The structure of the class is based on the premise that effective firm performance in these conditions requires coordination of people and groups of people.

## **Technology's Impact on Entertainment & Media**

**Course Number: MKTG-UB 23**

**Credits: 2**

**College: Stern**

**Department: Marketing**

Technology has impacted almost every industry, but its impact on entertainment has been and will continue to be particularly profound. Throughout the value chain, from content creation, to distribution and consumption, technology has changed the way consumers view and use entertainment. It has dramatically altered the entertainment landscape, with more changes on the way. Advertising is another industry that touches all of us, hundreds of times a day. It too is beginning to feel significant impact from changes in technology, brought on by audience fragmentation, interactivity, and VOD technology. This course provides a brief introduction to each of these industries and examines the impact that technology has had on them, including a realistic assessment of possibilities for the future.

## **Entertainment & Media Industries**

**Course Number: MKTG-UB 40**

**Credits: 1.5**

**College: Stern**

**Department: Marketing**

Provides students with a framework for understanding key marketing issues facing organizations in the entertainment industry. Establishes a basis for the formulation of marketing tactics and strategies for firms competing for consumers' discretionary spending. Covers recent developments in major sectors of the entertainment industry, including movies, television, cable, theater, and sports. Examines issues that cut across all types of entertainment marketing, including licensing and promotion. Uses case studies and projects.

## **Globalization of the Entertainment Industry**

**Course Number: MKTG-UB 46**

**Credits: 2**

**College: Stern**

**Department: Marketing**

Provides a framework for understanding the global expansion of media and entertainment companies. Examines the impact that the significant export growth of American leisure products and services has on the U.S. economy. Analyzes the strategies of several leading entertainment and media multinational companies and the development of their entertainment businesses within the major world economic zones.

**Entrepreneurship****Course Number: MG 4404****Credits: 4****Prerequisites: Junior or Senior status****College: NYU Polytechnic****Department: Management**

This course focuses on key aspects of entrepreneurship as a critical engine for innovation. It also treats entrepreneurship as a state of mind that is not limited to small firms. Students discuss current theories and practices related to starting and managing entrepreneurial enterprises, emphasizing firms in technology-, information- and knowledge-intensive environments. Particular attention is paid to the critical issues of (1) identifying opportunities that provide competitive advantage; (2) the development of a solid business plan; (3) the marketing of new ventures; (4) entrepreneurial business operations, including human-resource and process management; (5) ethical and social issues in entrepreneurial firms; and (6) financial management and fund raising for entrepreneurial firms.

**Project Management****Course Number: MG 3002****Credits: 2****College: NYU Polytechnic****Department: Management**

This course provides students with practical and best-practice project management theory, concepts and (hands-on) practical experience so that they may contribute effectively to and lead multicultural team projects framed for the new global economy. The practical component includes a team-based project that spans the duration of the course.

# Audio

## **Fundamentals of Audio Workstation I**

**Course Number: REMU-UT 1020**

**Credits: 2**

**Prerequisite: Open to Majors Only**

**College: Tisch School of the Arts**

**Department: Clive Davis Department of Recorded Music**

Students will acquire an in-depth, theoretical and practical knowledge of Pro Tools through a weekly, lab-based workshop. An emphasis will be made on file management, system configuration and the DigiBase browser. Students will then start operating Pro Tools, learning the operating modes and tools, gain structure and metering, and multi-tracking techniques using overdubs to build an arrangement. The semester will round out with techniques for editing and “comping”, consolidating tracks and preparing the files for the mix session.

## **Fundamentals of Audio Workstation II**

**Course Number: REMU-UT 1021**

**Credits: 2**

**Prerequisites: REMU-UT 1020**

**College: Tisch School of the Arts**

**Department: Clive Davis Department of Recorded Music**

During the second semester students will apply what they learned in the first semester to MIDI. Selection techniques, quantization, real-time properties, synchronization and an introduction to virtual instruments and programming. They will then focus on mixing both outside and inside the box. Setting up the mix environment, using equalization, compression, and effects plug-ins and finally using automation. Emphasize will be made on proper mix master delivery, as well as preparing for mastering. The semester will end with a project that will enable students to apply all they learned during the year. Over two sessions students will have to record, edit, mix and master a 30 second long TV commercial (music, voice-over and synchronization to a Quicktime movie).

## **Computer Music Studio**

**Course Number: DM 3213**

**Credits: 3**

**College: NYU Polytechnic**

**Department: Digital Media**

This composition-studio course aims to have each student generate music using algorithmic procedures. The studio will explore algorithmic thinking in music, dating from the distant past to the present, in pre-compositional and performance situations. Participants listen to a broad repertoire and learn to use a wide variety of algorithmic techniques.

## **Interactive, Internet, and Mobile Music**

**Course Number: MPAMB-UE 1306**

**Credits: 2**

**College: Steinhardt**

**Department: Music and Business**

A survey of contemporary theoretical, technological, & socio-economic structures that link music & participatory/interactive media & entertainment forms. “Interactive” models in the new music industry include social networks, music search & recommendation engines, personalized Internet radio & streaming, mobile music, live entertainment, & the use of music in video games & smartphone applications. These are examined & contextualized with a view to identifying business opportunities for musical entrepreneurs, creators, fans & facilitators.

## **MIDI Technology II**

**Course Number: MPATE-UE 1014**

**Credits: 3**

**College: Steinhardt**

**Department: Music and Performing Arts Professions**

Programming for MIDI, C, and other appropriate techniques. Design and implementation of software sequencers, interface drivers, and hardware applications will be the focus.

## **MIDI for Non-Majors**

**Course Number: MPATE-UE 1810**

**Credits: 3**

**College: Steinhardt**

**Department: Music and Performing Arts Professions**

An introduction to MIDI (Musical Instrument Digital Interface) with an emphasis on sequencing, production and arranging techniques. Open to students without previous experience in music technology.

## **Studio Recording**

**Course Number: FMTV-UT 1005**

**Credits: 3**

**Prerequisite: Major Specific**

**College: Tisch School of the Arts**

**Department: Kanbar UG Film & Television**

This is a workshop-style class focusing on the techniques of stereo music recording in the studio. The first three classes are lecture/demonstrations, after that we will alternate between recording soloists, small ensembles and bands, and discussing and analyzing these recordings. The emphasis is on making complete ensemble recordings of performances. As part of the process we will compare digital and analog systems, and study the structural and operational differences among a variety of microphones. Effects processors, reverbs, delays, equalizers and compressors will all be studied and applied to recordings. The goal of the class is to provide a set of principles and tools that will be relevant to any music recording situation that arises. Completion of Sound Image is required to take this class. We will be jumping into a studio very quickly, students will be expected to put in whatever time they need to become comfortable in the studio. Over the course of the semester each student is expected to make three finished recordings. Often the first recording will be of a soloist, the second of a duo or trio, and the last of a band or large ensemble. It is the student's responsibility to find the musicians to record. Grading is based on attendance and participation in class and on the quality of the recordings produced. Note that I will not be grading the quality of the music, just the recording. In this class we will refer to the history of music recording repeatedly as we learn about the fundamental techniques as they have been practiced since the 1930's.

## **Producing the Record Side A**

**Course Number: REMU-UT 1003**

**Credits: 4**

**College: Tisch School of the Arts**

**Department: Clive Davis Department of Recorded Music**

This course provides students with the creative skills and theoretical information to work successfully with artists in the recording studio toward the conceptualization and completion of a short EP or full-length LP. By the end of the course, students have the necessary skills to communicate with and produce excellence from musical performers in the recording studio. To that end, this course instructs students in the selection of appropriate musical material, arrangement of the material, the construction of the sound in the studio, and the artistic ensemble of the recorded sound on the completed album. Working first in small groups and then individually, students gain practical experience by recording and mixing sound with professional artists in the studio, under

Careful supervision. In preparation for the third year, students are asked to consider possible distribution modes for the final product and a range of identifiable publics. This class also arms students with a working knowledge of the recording techniques of specific genres of popular music. We analyze the recorded repertoire of a diverse range of genres?such as rock, pop, R & B, hip-hop, jazz, blues, country, and electronica?as time permits and according to student needs. Students are asked to purchase a number of classic albums in the genre in which they intend to pursue their work, and they deconstruct those albums for aural clues to imagine how they might have been put together in the studio. As time permits, we also visit creative producers in the recording studio to monitor how they work with artists and develop recorded material. Note: There is a lab fee for this class.

### **Producing the Record Side B**

**Course Number: REMU-UT 1004**

**Credits: 4**

**College: Tisch School of the Arts**

**Department: Clive Davis Department of Recorded Music**

Producing the Record introduces the student to the varied disciplines of artistic music production. Through lab, lecture, case study and guest presentations, students are exposed to pre-production and production techniques, mixing techniques, arranging and orchestration principles, project budgeting, royalty structure and project management. Production technique lectures cover digital and analog recording, programming and synchronization, acoustic recording techniques and session management. Mixing lessons include instruction on the principles of mixing and musical balance with extensive training in automated computer assisted mixing. Budgeting and contract discussions center around the case study analysis of actual professional production budgets and contracts. Guest lecturers are invited to present “instrument labs”, providing in depth information about tuning, writing for and recording guitar, drums, string sections, brass instruments, etc.

### **Producing Music with Software and MIDI I**

**Course Number: REMU-UT 1022**

**Credits: 2**

**College: Tisch School of the Arts**

**Department: Clive Davis Department of Recorded Music**

Since its beginning, the field of audio recording has been shaped by technology, creating a need for technically minded “engineers” to bridge the gap between those who create the music (songwriters, producers, and musicians) and those who wish to listen to it at their convenience. Advances in technology have even shaped the way songwriters, producers, and musicians create their music; from the development of the electric guitar and amplifiers to sophisticated synthesizers, samplers, and computer-based instruments. While there is still a need for high-quality engineers, innovations in technology (particularly the integration of the computer into the music industry) now allow songwriters, producers, and musicians to do more with less, thereby diminishing the gap between themselves and the consumer. Through a series of discussions, in-class exercises, and assignments, this course will cover digital audio and synchronization, as well as provide an opportunity for students to learn how to use “programming” tools to create music. Together with Producing Music with Software and MIDI II, the course will cover digital audio and focus heavily on MIDI via multiple platforms, including Pro Tools, Logic, Reason, and Ableton Live.

## **Producing Music with Software and MIDI II**

**Course Number: REMU-UT 1023**

**Credits: 2**

**College: Tisch School of the Arts**

**Department: Clive Davis Department of Recorded Music**

This course starts up where the first semester left off, with hardware sequencers followed by extensive training on major software sequencers with the intention of discovering the advantages and disadvantages of each. The final project will consist of programming sound alike productions of famous songs. The students will have to exhibit their newly acquired programming and sequencing skills to get as close as possible to the original.

## **Engineering the Record I**

**Course Number: REMU-UT 1040**

**Credits: 2**

**Prerequisite: Open to Majors Only**

**College: Tisch School of the Arts**

**Department: Clive Davis Department of Recorded Music**

Engineering the Record I familiarizes students with the practical aspects of the recording process in the studio by examining the theory, techniques, and science of sound recording. Students will be introduced to the basics of recording studios and sessions through lectures, demonstrations, supplemental reading and assignments carried out in the studio. In tandem with learning the mechanics of the process, students begin to develop their critical listening skills and audio vocabulary. Topics include: the propagation of sound and instrument radiation patterns, hearing and perception, microphones and microphone technique, analog signal flow, and signal processing. Note: There is a lab fee for this class.

## **Engineering the Record II**

**Course Number: REMU-UT 1041**

**Credits: 2**

**Prerequisite: Open to Majors Only**

**College: Tisch School of the Arts**

**Department: Clive Davis Department of Recorded Music**

This course will survey the tools used in the studio and the methods and mechanics behind them. Moving beyond fundamental scientific concepts, we will explore the workings of compressors, equalizers, reverbs and delays. Also, the course will delve into the powerful combination of Pro Tools and analog technology, automation, as well as important concepts in electronics, gain structure and metering. Note: There is a lab fee for this class.

