INTERACTIVE MEDIA ARTS (IMNY-UT)

IMNY-UT 1 Code! (2 Credits)
This online 7 week course focuses on the fundamentals of computer programming (variables, conditionals, iteration, functions & objects) using JavaScript. In particular it leverages the p5.js creative computing environment which is oriented towards visual displays on desktops, laptops, tablets or smartphones. The course is designed for computer programming novices. What can computation add to human communication? You will gain a deeper understanding of the possibilities of computation−− possibilities that will augment and enhance the perspectives, abilities and knowledge you bring from your field of study (e.g. art, design, humanities, sciences, engineering). At first it may feel foreign, as foreign as learning a new language or way of thinking. But soon, once you get some basic skills under your belt, you'll be able to make projects that reflect your own interests and passions.
Grading: Ugrd Tisch Pass/Fail
Repeatable for additional credit: No

IMNY-UT 2 Code! 2 (2 Credits)
This online 7 week course focuses on applying fundamentals of computer programming in JavaScript to interactive media projects. In particular, it leverages the p5.js creative computing environment which is oriented towards visual displays on desktops, laptops, tablets or smartphones. The course is designed for students with a foundation level understanding of programming in JavaScript with the p5.js library. The Code! course (or equivalent) is a prerequisite.
Grading: Ugrd Tisch Pass/Fail
Repeatable for additional credit: No

IMNY-UT 99 IMA Cohort: Community is a Practice (0 Credits)
IMA Cohort: Community is a Practice provides incoming IMA students with an opportunity to consider the IMA program, and their role within it. This zero-credit course is based around in-class activities, discussions, viewings, texts, and lectures that begin from the students' varying perspectives and ultimately provide a grounding within the tenets of the IMA program. IMA is an interdisciplinary program that draws students from across the United States and around the world. This course functions as an opportunity for students to consider the knowledge that they already have, the contexts in which that knowledge is situated, and how students can relate to and work with classmates who come from their own diverse contexts and backgrounds. Students will be guided through discussions, viewings, and visits from other members of the university. Because this is a zero-credit course and there are no assignments outside of class, student participation and engagement in these activities is especially important.
Grading: Ugrd Tisch Pass/Fail
Repeatable for additional credit: No

IMNY-UT 101 Creative Computing (4 Credits)
This course combines two powerful areas of technology that will enable you to leap from being just a user of technology to becoming a creator with it: Physical Computing and Programming. The course begins with Physical Computing, which allows you to break free from both the limitations of mouse, keyboard & monitor interfaces and stationary locations at home or the office. We begin by exploring the expressive capabilities of the human body and how we experience our physical environment. The platform for the class is a microcontroller (Arduino brand), a very small inexpensive single-chip computer that can be embedded anywhere and sense and make things happen in the physical world. The core technical concepts include digital, analog and serial input and output. The second portion of the course focuses on fundamentals of computer programming (variables, conditionals, iteration, functions & objects) as well as more advanced techniques such as data parsing, image processing, networking, computer vision. The Javascript 'p5' programming environment is the primary vehicle. P5 is more oriented towards visual displays on desktops, laptops, tablets or smartphones but can also connect back to the physical sensor & actuators from the first part of the class. The course is designed for computer programming novices but the project-centered pedagogy will allow more experienced programmers the opportunity to go further with their project ideas and collaborate with other students. What can computation add to human communication? You will gain a deeper understanding of the possibilities of computation−− possibilities that will augment and enhance the perspectives, abilities and knowledge you bring from your field of study (e.g. art, design, humanities, sciences, engineering). At first it may feel foreign, as foreign as learning a new language or way of thinking. But soon, once you get some basic skills under your belt, you'll be able to make projects that reflect your own interests and passions.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 102 Communications Lab (4 Credits)
An introductory course designed to provide students with hands-on experience using various technologies including time based media, video production, digital imaging, audio, video and animation. The forms and uses of new communications technologies are explored in a laboratory context of experimentation and discussion. The technologies are examined as tools that can be employed in a variety of situations and experiences. Principles of interpersonal communications, media theory, and human factors are introduced. Weekly assignments, team and independent projects, and project reports are required.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 103 Quick Introduction to Physical Computing (1 Credit)
Physical Computing is an approach to learning how humans communicate through computers that starts by considering how humans express themselves physically. In this course, we take the human body as a given, and attempt to design computing applications within the limits of its expression. To realize this goal, you'll learn how a computer converts the changes in energy given off by our bodies (in the form of sound, light, motion, and other forms) into changing electronic signals that it can read and interpret. You'll learn about the sensors that do this, and about simple computers called microcontrollers that read sensors and convert their output into data. In the other direction you will learn how to actual physical things in the world with devices like speakers, lights and motors. Finally, you'll learn how microcontrollers communicate with other computers. To learn this, you'll watch people and build devices. You will spend a lot of time building circuits, soldering, writing programs, building structures to hold sensors and controls, and figuring out how best to make all of these things relate to a person's body.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 201 Internet Famous (4 Credits)
Looking to become famous on the internet? Getting attention online may be easy, but controlling it is a lot harder. As traditional celebrities continue to struggle with their digital images, a wave of micro-celebrities and influencers has rushed to fill the gap with viral content, product suggestions, memes, and conspiracy theories. This new breed of stars rules a media landscape where anyone can be their own manager or PR department - for a price. This class examines the transformation of celebrity from a 19th-century sales gimmick into the formidable cultural, social, and technological force it is today. It explores what happens when fame is freed from its traditional magazine and TV gatekeepers, delving into issues of media manipulation, fan management, commercialization, exploitation, cancel culture, and the surprising importance of cute cat pictures. And we'll also experiment with the raw tactics and techniques of stardom for anyone looking to chase their own celebrity dreams.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 203 Big Ideas in the History and Future of Technology (2 Credits)
"Big Ideas in the History and Future of Technology" is designed to provide students with a critical perspective on current issues in technology in the context of the history, controversies, consequences, and ethical questions in emerging media. This first course in the series includes: in the first half —some seminal early works that imagine a future in which technology enhances/augments human intelligence and capabilities and how that might affect society; in the second half—2 classic works of fiction and some podcasts/ audio lectures that address questions relating to "What is Human."
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 204 Research Methods in Art and Design (4 Credits)
This course is intended for students planning to conduct qualitative research in a variety of different operational settings. Its topics include- case studies, data, documentary evidence, participant observation, surveys, and supportive technologies. The primary goal of this course is to assist students in preparing their thesis proposals/ projects.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 205 Creative Approaches to Emerging Media (4 Credits)
We live in a world where we have more data, computational power, and access to digital connectivity than ever before. But how do we make sense of the promise inherent in this reality while holding space for the challenges that it presents for different groups and communities? How do we situate the technologies that we have come to take for granted? And more importantly, how do we leverage an artist's perspective to creating active responses that interrogate and hint at the potential for different futures? This course examines emergent technological fields, spanning topics like data collection/representation, digital archives, artificial intelligence, social algorithms, and automation and asks how the technologies inherent to each can be leveraged for artistic response, creation, and critique. While this course is primarily conceptual and art theory-based, the content covered will be technical in nature and students will be tasked with making three creative responses to the content in the tradition of the new media, digital, and conceptual art worlds. Prerequisites: Creative Computing or equivalent programming experience and Communications Lab: Hypercinema or equivalent media production experience is required.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 206 Critical Experiences (4 Credits)
"Critical Experience is an experiential journey through a research driven art practice rooted in care, community, and somatic inquiry. This class is based on the premise that there are many ways to know things and we can draw upon these ways of knowing and our desire to know in order to nurture a creative practice grounded in research, clear intention, and a critical lens. Critical here means: discerning, eager to participate differently, cast new light on, re-examine, course-correct. You will be guided through traditional research methods (library and interview techniques, citations, informal ethnographies) and experience design while also being asked to cultivate intentional awareness of your own positionalities, communities, personal strengths, emotions, and desires through experimentation, hunch following, rituals, and contemplative practices.This class was created for or artists/designers who are interested in participation/interaction and its relationship to social practice, critical design, and change-making as well as individuals curious about knowing what moves them. Why experience? The work in this class will be looked at through the lens of its ability to transform (a user, participant, audience, viewer). Interactivity is one way of doing that, but through the lens of experience design, all art is temporal and embodied."
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 220 Topics in Computation and Data (4 Credits)
This course is designed to provide students with hands-on experience working with computational media (programming, creative coding, etc.) and data. The forms and uses of computational media and its application are explored in a laboratory context of experimentation and discussion.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: Yes

IMNY-UT 221 Reading and Writing Electronic Text (4 Credits)
Course description (optional): This course introduces the Python programming language as a tool for reading and writing digital text. This course is specifically geared to serve as a general-purpose introduction to programming in Python, but will be of special interest to students interested in poetics, language, creative writing and text analysis. Weekly programming exercises work toward a midterm project and culminate in a final project. Poetics/text analysis topics covered include: the history of computer-generated writing in arts and literature; plain text transcription and character encodings; ethics and authorship in the context of computer-mediated language; poetic structure and sound symbolism; performance and publishing. Programming topics covered include: data structures (lists, sets, dictionaries); strategies for making code reusable (functions and modules); natural language processing; grammar-based text generation; predictive models of text (Markov chains and recurrent neural networks); and working with structured data and text corpora.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 222 The Code of Music (4 Credits)
"In this course, students learn how to create musical systems –pieces that incorporate randomness, interact with their listeners, or evolve over time, in the browser. We will start by creating audiovisual instruments and sample-based interactive songs, as students review their p5.js skills and are introduced to the Tone.js music library. Then, we will turn to a structured exploration of the elements of music, focusing on rhythm, melody, timbre, and harmony. For each, we will hold listening sessions, represent and manipulate the element in code, and interact with it via a range of existing interfaces. Students will explore the possibilities that computation and interactivity open up by designing and implementing a series of interactive studies. The last few weeks of the semester will be dedicated to introducing algorithmic composition techniques such as Markov Chains and Neural Networks. During this time, students will also develop their final project: an interactive/generative musical piece that builds on their previous classwork. Throughout the course, students are encouraged to bring in their musical tastes and interests into the classroom. This class is a good fit for students who are interested in: - Creating interactive music pieces and digital instruments. - Deepening their understanding of how music works. All musically-curious students are welcome: previous experience with music and audio will be useful, but is not required. - Continuing to develop coding skills. Creative Coding or equivalent programming experience is required." Prerequisite: Creative Computing (IMNY-UT 101)
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 223 Networked Media (4 Credits)
"The network is a fundamental medium for interactivity. It makes possible our interaction with machines, data, and, most importantly, other people. Though the base interaction it supports is simple, a client sends a request to a server, which replies; an incredible variety of systems can be and have been built on top of it. An equally impressive body of media theory has also arisen around its use. This hybrid theory and technology course will be 50% project driven technical work and 50% theory and discussion. The technical work will utilize JavaScript as both a client and server side programming language to build creative systems on the web. Technical topics will include server and client web frameworks, such as Express, HTML, CSS, templating, and databases. The theory portion of the course will include reading and discussion of past and current media theory texts that relate to the networks of today. **** it is HIGHLY recommended you take Front End Web Development (or have equivalent front end web development experience) to get the most out of this course. We will be going over fundamentals of HTML/CSS but it would be useful to have prior knowledge ***" Prerequisite: Creative Computing or equivalent programming experience.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 224 Introduction to Machine Learning for the Arts (4 Credits)
An introductory course designed to provide students with hands-on experience developing creative coding projects with machine learning. The history, theory, and application of machine learning algorithms and related datasets are explored in a laboratory context of experimentation and discussion. Examples and exercises will be demonstrated in JavaScript using the p5.js, ml5.js, and TensorFlow.js libraries. In addition, students will learn to work with open-source generative models including text generation models and image generation models. Principles of data collection and ethics are introduced. Weekly assignments, team and independent projects, and project reports are required. Some experience and basic familiarity with programming is a plus, but not required for this course.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 225 Collective Play (4 Credits)
Rules of play shape competitive games from checkers to football. But how do the rules of interaction shape non-competitive play? In this course, we will explore, code and test design strategies for playful group interactions while at the same time interrogating both what it means to play and how individual identities and group behaviors. Some of the questions we will ask and attempt to answer: What motivates participation? What hinders it? When does participation become oppressive? What's the difference between self-consciousness and self-awareness? Who has power? Who doesn't? Are leaders necessary? What's the difference between taking turns and engaging in conversation? What happens when the slowest person sets the pace? Interaction inputs we will play with will include: mouse, keyboard, mobile device sensors, and microphone. Outputs will include, visuals, text and sound. We will use p5, websockets and node.js for real-time interaction. Class time will be split between playing with and critiquing examples and translating design strategies into code and logic.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 226 Big Spaces (4 Credits)
If so much of life is circumstance, being in a certain place at a certain moment in time… Can we shape a life or at least a few brief moments of a life by designing the circumstances in which that life inhabits a space? In this course, we will treat space as a time-based medium and ask how interactive spaces can generate narratives that are lived rather than told. We will do so by interrogating four so-called "space-narrative" forms: Wandering The Desert, Processions, Circles and Territories. Through play, discussion and hands-on workshopping of both technical topics and ideas we will ask and attempt to answer some of the following questions: What constitutes a space? How do we experience a space over time? How does space shape our experience of time? How can space form a personal narrative? Media outputs we will employ include: lights, projection and sound. Interaction input sources will come from cameras and microphones. We will use p5.js, websockets and node.js for real-time interaction. Class time will be split between group improvisation exercises, playing with and critiquing examples and translating design strategies into code and logic.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 228 Front-End Web (4 Credits)
This course will provide a foundation for understanding modern web development with a focus on front end technologies and accessing public data. The forms and uses of these technologies are explored in a laboratory context of experimentation and discussion. This studio stresses interactivity, usability, and the quality and appropriateness of look and feel. Students will create two web applications, including one that leverages public APIs and Javascript libraries. The goal of the course is for students to learn how to think holistically about an application, both by designing a clear user experience and understanding the algorithmic steps required to build it. Assignments are arranged in sequence to enable the production of a website of high quality in design and engineering. Prerequisite: Creative Computing or equivalent programming experience.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 231 Pixel by Pixel (4 Credits)
This class focuses on the art of computer graphics and image processing. We explore the concepts of pixilation, image representation and granularity and the tension between reality and image. Students are introduced to the tools and techniques of creating dynamic and interactive computer images from scratch, manipulating and processing existing images and videos, compositing and transitioning multiple images, tracking and masking live video, compositing and manipulating live video as well as manipulating depth information from Kinect. The class uses Processing and the Java language and also introduces students to shaders and the glsl language.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 232 Experimental Photography (4 Credits)
What are all the ways that you saw or made a photograph this week? How are those ways similar and different? How do those pictures function in your life and in society? What is a photograph? This course repeatedly asks these questions by using emerging computational tools to design alternative forms of making and interacting with photographs. The forms and applications of these tools, such as those for creative coding, physical computing, and machine learning, are explored weekly in technical tutorials and hands-on workshops. These are informed by discussions of critical debates in photography and various practitioners working with photographs, past and present. The homework includes readings, short writing responses, and photography assignments. Prerequisites: Comm Lab: HyperCinema (or similar coursework exploring communication and storytelling with digital tools) and New York's IMA Creative Computing (or similar coursework with creative coding using the p5.js JavaScript library and programming for physical computing using Arduino microcontrollers). Note that prior experience with physical computing using the Arduino platform is required for this course. Please feel free to contact the instructor if you have any questions about the course.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 233 Chatbots for Art's Sake (4 Credits)
This class aims to repurpose existing chatbot technologies and use them for the sake of art. The class is twofold, students will engage in labs and workshops to learn and practice different techniques— such as p5.js, p5.speech, RiveScript, RiTa, and Alexa Skills—to create functional chatbots. They will also participate in lectures and discussions that look at the different roles Artificial Intelligence plays in human society, including but not limited to authority, companions, or simply reflections of the humans it interacts with.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 240 Topics in Physical Computing (4 Credits)
Physical Computing is an approach to computer-human interaction design that starts by considering how humans express themselves physically and how computers can sense that expression. This course is designed to provide students with hands-on experience in researching, designing, and building physical interfaces for computers and other digital devices. Physical computing takes a hands-on approach. Students will learn to understand electronic sensors, connect them to computers, write programs, and build enclosures to hold sensors and controls. They will also learn to integrate all of these skills in the design of devices which respond to human physical expression.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: Yes

IMNY-UT 241 Introduction to Assistive Technology (2 Credits)
Assistive technology is a term that includes a wide variety of technologies for people with disabilities. This two-point survey course is designed to provide students with an overview of the field of assistive technology. Field trips, readings, and guest speakers will provide students with an understanding of current research and development as well as processes used in determining appropriate technologies. Weekly assignments and a final research project.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 242 Introduction to Fabrication (2 Credits)
An introductory course designed to familiarize students with all the IMA prototyping shop has to offer. We will cover everything from basic hand tools to the beginnings of digital fabrication. You will learn to use the right tool for the job. There will be weekly assignments, created to develop your fabrication techniques. There will be in class lectures, demos, and building assignments. Emphasis will be put on good design practices, material choice, and craftsmanship.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 243 Designing Interfaces for Live Performance (4 Credits)
This course is designed to provide students with hands-on experience working with sensors and other electronics to design interfaces for a live multimedia performance. Students will explore the expressive properties of sensors to control a variety of outputs such as light, sound, projection, and/or other media. The forms and uses of physical computing, computational media, and its application are explored weekly in both a hands on laboratory context, as well as weekly discussions of readings and existing performances. Prerequisites: Creative Computing or similar coursework with microcontrollers and coding.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 244 Introduction to 3D Printing (2 Credits)
3D environments and objects are powerful prototyping tools. This class will introduce the basics of 3D modeling techniques in Rhino and students will learn to create assets for prototyping and 3D printing. The class will take an industrial design approach to design and build with specifications and materials in mind. Students will learn to think, plan, design, and produce well thought out objects to fit their specific needs. (examples: motor mounts, enclosures, wearables etc.)
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 245 Physical Computing (4 Credits)
This course expands the students' palette for physical interaction design with computational media. We look away from the limitations of the mouse, keyboard and monitor interface of today's computers, and start instead with the expressive capabilities of the human body. We consider uses of the computer for more than just information retrieval and processing, and at locations other than the home or the office. The platform for the class is a microcontroller, a single-chip computer that can fit in your hand. The core technical concepts include digital, analog and serial input and output. Core interaction design concepts include user observation, affordances, and converting physical action into digital information. Students have weekly lab exercises to build skills with the microcontroller and related tools, and longer assignments in which they apply the principles from weekly labs in creative applications. Both individual work and group work is required. Prerequisite: Creative Computing or equivalent programming and physical computing experience.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 246 Paper Art: History & Practice (2 Credits)
Beginning with the invention of paper, the paper craft movement has roots on all continents. This course is divided into several subject areas: the history of paper and paper making, paper folding, paper cutting, paper engineering, paper automata, and the contemporary DIY electronics and paper craft moment. Each subject area has associated readings, a short research presentation on international traditions and forms, several hands-on mechanical exercises, and one individual creative exercise.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 247 Ok Robot Reboot (4 Credits)
Society has always dreamed about humans coexisting with automatons, robots and talking machines that fit into every facet of daily life. As a consequence of computation and the internet leaving the flat screen, alternative forms of human-machine relationships are increasingly becoming more ubiquitous. Designing for these new machines brings novel challenges and requires a different approach. From HAL 9000 to early automatons, this class presents an overview of history, methods, technologies and design challenges involved in building and living with Robots and Social Devices. This class is conceived as a seminar format. Discussions and explorations will emphasize the cultural, political and technical. Over the course of the semester, students will interrogate and deconstruct examples of Robots (in sci-fi, popular culture, art installations, assistive tech, connected devices), and design their own systems by appropriating existing technologies.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 248 Topics in Physical Computing (2 Credits)
Physical Computing is an approach to computer-human interaction design that starts by considering how humans express themselves physically and how computers can sense that expression. This course is designed to provide students with hands-on experience in researching, designing, and building physical interfaces for computers and other digital devices. Physical computing takes a hands-on approach. Students will learn to understand electronic sensors, connect them to computers, write programs, and build enclosures to hold sensors and controls. They will also learn to integrate all of these skills in the design of devices which respond to human physical expression.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: Yes

IMNY-UT 249 Interaction as Art Medium (2 Credits)
While traditional forms of art such as painting and sculpture only expect intellectual communication with the spectator, interactive arts consider the audience as active participants and directly involve their physical bodies and actions. Interactive art invites its audience to have a conversation with the artwork or even be part of it. Well designed interactions add new meanings to the artwork and enhance effective and memorable communication with the viewer through their magical quality. Artists have achieved interactivity in their art through different strategies based on various technologies. For example, some projects have physical interfaces such as buttons and knobs, some projects react to the audience's presence or specific body movements, and yet others require collaborations between the audience as part of the interaction process. Some artwork involves interactions that require a long period of time for the engagement. In many of these interactive art projects, interaction methods are deeply embedded into the soul and voice of the work itself. In this class, we will explore interaction as an artistic medium. We will be looking at interactive media art history through the lens of interaction and technology to explore their potential as art making tools. Every 1-2 weeks, you will be introduced to a new interaction strategy along with a group of artists and projects. You will learn about relevant technologies and skills for the interaction strategies and build your own project to be in conversation with the artists and projects. You will also explore and discuss the future of interactions and how interactive art can contribute to innovations in interactions, and vice versa. You will also learn about how to contextualize and articulate your project in an artistic way. The assignments include reading, short writing, hands-on labs, and production assignments. Technical topics covered in class include but are not limited to: physical computing, sensing, and interaction design.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 250 Topics in Fabrication (4 Credits)
Fabrication is the process of making things. This might include sculpture, mechanisms, enclosures, furniture, and other physical objects. This course is designed to provide students with hands-on experience working with fabrication equipment, materials, and/or techniques. Students will learn sound physical design and engineering practices. A special focus will be on using equipment safely. There will be weekly assignments, created to develop your fabrication techniques. There will be in class lectures, demos, and fabrication assignments. Emphasis will be put on good design practices and craftsmanship.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: Yes

IMNY-UT 251 Topics in Fabrication (2 Credits)
Fabrication is the process of making things. This might include sculpture, mechanisms, enclosures, furniture, and other physical objects. This course is designed to provide students with hands-on experience working with fabrication equipment, materials, and/or techniques. Students will learn sound physical design and engineering practices. A special focus will be on using equipment safely. There will be weekly assignments, created to develop your fabrication techniques. There will be in class lectures, demos, and fabrication assignments. Emphasis will be put on good design practices and craftsmanship.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: Yes

IMNY-UT 252 Introduction to Digital Fabrication (4 Credits)
Do you want to MAKE THINGS with your computer? Are you an artist, engineer, designer, sculptor or architect? Are you a few of those things? How are 3D scanning and 3D modeling different? What materials should I be using? Should I be 3D printing or CNC-ing this CAD file? What is a Boolean operation and why is it my new best friend? This class will answer all of your questions. Don't know what any of these things are? This class will answer those questions also. By the end of this course, you will be familiar with all that digital fabrication has to offer. We will cover everything from laser to 3D to CNC. You will learn how to identify which digital fabrication technique works best for your projects. But more than that, you will learn what kinds of questions you should be asking in order to complete a project from start to finish. As technology advances at rapid speeds, digital making machines and software are changing just as fast. So instead of just being taught about the machines of today, you will also be given the tools to teach yourself the machines of tomorrow. Emphasis will be put on learning how to ask the right kind of questions to successfully finish a project. What do you want to make? Let's make it.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 253 Interaction as Art Medium (4 Credits)
While traditional forms of art such as painting and sculpture only expect intellectual communication with the spectator, interactive arts consider the audience as active participants and directly involve their physical bodies and actions. Interactive art invites its audience to have a conversation with the artwork or even be part of it. Well designed interactions add new meanings to the artwork and enhance effective and memorable communication with the viewer through their magical quality. Artists have achieved interactivity in their art through different strategies based on various technologies. For example, some projects have physical interfaces such as buttons and knobs, some projects react to the audience's presence or specific body movements, and yet others require collaborations between the audience as part of the interaction process. Some artwork involves interactions that require a long period of time for the engagement. In many of these interactive art projects, interaction methods are deeply embedded into the soul and voice of the work itself. In this class, we will explore interaction as an artistic medium with focus on physical interactions. We will be looking at interactive media art history through the lens of interaction and technology to explore their potential as art making tools. Every 1-2 weeks, you will be introduced to a new interaction strategy along with a group of artists and projects. You will learn about relevant physical computing techniques and skills for the interaction strategies and build your own project to be in conversation with the artists and projects. You will also explore and discuss the future of interactions and how interactive art can contribute to innovations in interactions, and vice versa. You will also learn about how to contextualize and articulate your project in an artistic way. The assignments include reading, short writing, hands-on labs, and production assignments. Technical topics covered in class will focus on: physical computing, sensing, and interaction design.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 260 Topics in Media Art (4 Credits)
This course is designed to provide students with hands-on experience working with media art centered around a specific topic, theme, or technology, as well as provide a critical framework for understanding the subjects discussed. The history and theory of the specific topic of media art is explored in a studio context consisting of experimentation, discussion and critical analysis. Students will create a final work or polished prototype/proposal, as well as several small-scale experiments that build skills towards their final.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: Yes

IMNY-UT 261 Design Fundamentals (4 Credits)
This class aims to provide students with the critical thinking and practical skills to explore and communicate ideas visually. This foundational course will introduce the fundamental principles of design including typography, color, composition, branding and environmental design, and offer hands-on application of those principles through both in-class exercises and weekly assignments. The structure of the class is part lecture and learning of concepts, but also very hands-on with a weekly workshop studio session (the weekend class). We will use Adobe software and students can expect to spend $150 on consumable art supplies which they will use to craft their design projects.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 262 User Experience Design (4 Credits)
This course aims to provide students with the critical thinking and practical skills for creating effective and compelling interfaces. We will dissect what a compelling user experience is and discuss and apply design methods for creating one. Throughout this 14-week course we will examine a wide range of examples of interfaces with a focus on understanding the attributes of a successful interface and applying proven research, mapping and testing techniques. The class format will include lectures, case studies, student presentations, discussions of readings and in-class design exercises. The format is very hands-on with assignments that focus on problems that are typical of those a UX designer will encounter in the professional world.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 263 Information Design (2 Credits)
This course is designed to provide students with skills including critical thinking for designing, evaluating and appreciating visual narratives. The history and current state of information design will be explored along with hands-on application of visual frameworks in a studio context consisting of lectures, experimentation, discussion and critical analysis. Students will apply the skills learned to a final project on a topic of interest to them.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 264 User Experience Design Fundamentals (2 Credits)
This course aims to provide students with the critical thinking and practical skills for creating effective and compelling user interfaces. We will dissect what a compelling user experience is and discuss and apply design frameworks and methods for creating one. Throughout this 2pt course we will examine a range of examples of interfaces with a focus on understanding the attributes of a successful interfaces and hands-on experience applying proven research, mapping and testing UX techniques. The class format is lecture and studio and will include discussions, student presentations and critique, and in-class design exercises. The exercises and assignments focus on problems that are typical of those a UX designer will encounter in the professional world.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 270 Topics in Design (4 Credits)
This course is designed to provide students with hands-on design experience. The history and theory of various forms of media art are explored in a studio context consisting of experimentation, discussion and critical analysis.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: Yes

IMNY-UT 271 Topics in Design (2 Credits)
This course is designed to provide students with hands-on design experience. The history and theory of various forms of media art are explored in a studio context consisting of experimentation, discussion and critical analysis.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: Yes

IMNY-UT 272 Useless Machines (4 Credits)
"Useless Machines is about redefining "usefulness." Through making, we will explore what it means, on an ideological, political and historical level, to create something 'useful' or 'useless.' We will play with these definitions and explore how these objects serve to be humorous, critical, disruptive and at times... useful. We will study 'useless' machines throughout history, which will provoke conversations and disagreements around the implications of existing and emerging technologies. The students will design 'useless' machines for their final project. Examples of 'useless' machines are drawn from Kenji Kawakami's The Big Bento Box of Unuseless Japanese Inventions, Dunne & Raby's Speculative Everything, Stephanie Dinkins' Conversations with Bina 48, https://esoteric.codes/, CW&T, Mimi Ọnụọha's Missing Data, Jacques Carelman's Catalogue of Impossible Objects, viral videos/objects and much more."
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 273 Communications and Technology (4 Credits)
From alphabets to virtual realities, this course will explore the development, reaction, and long term impact of various communication technologies. How have these technologies, such as writing, printing, the telegraph, television, radio, the internet and beyond, transformed society? And what changes can be observed both today and tomorrow? After students look closely at past and current future communication technologies, students will speculate on the future of communication technologies in a connected world by proposing their own transformative technology. Readings and discussion will cover communication theory, technical processes, creative applications, and critical investigation. Writing assignments will be paired with practical assignments where students will be challenged to bring their analysis and ideas to life. The web will also be utilized as a test bed for experiencing and experimenting with various forms of communication both old and new. This course will be part seminar and part lab. In the seminar portion of the class, time will be spent engaging in short lectures, critical discussions, and reviews of both reading and writing assignments. In the lab portions, students will participate in hands-on creative and technical activities and present practical assignment work. Throughout the class, students will be encouraged to learn through play, experimentation, collaboration, and exploration. Both individual and group work will be assigned.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 281 Topics in Media Art (2 Credits)
This course is designed to provide students with hands-on experience working with media art on a specific topic, theme, or technology, as well as provide a critical framework for understanding the subjects discussed. The history and theory of the specific topic of media art is explored in a studio context consisting of experimentation, discussion and critical analysis. Students will create a final work or polished prototype/proposal, as well as several small-scale experiments.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: Yes

IMNY-UT 282 Immersive Experiences (4 Credits)
This course is designed to provide students with hands-on experience creating immersive experiences, with a focus on designing artistic, meaningful worlds for virtual reality headsets. The class will also touch on related technologies, methods, and fields including experience design, virtual painting, augmented reality, interactive installation, and 360 video/audio. The course materials will also include readings and discussions on prior art/relevant critical texts. This class uses VR as a lens for understanding experience design in general. Some basic familiarity with programming, image-making, and time-based media is a plus, but not required. Communications Lab: Hypercinema or equivalent experience.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 283 Fairy Tales for the 21st Century (2 Credits)
Fairy tales, myths, and stories of magic have always served as a way for both children and adults to make sense of the unpredictabilities of the world around them. How do these stories serve us today? How do new technologies allow us to reinterpret them so that they have new meaning for our times? Through readings, weekly exercises, and a final project, students in this course will explore the historic role and structure of fairy tales as well as the potential contemporary frameworks that allow us to entertain the impossible. Students will work with stories of their choosing however we will examine their implementation through traditional material and book art techniques, as well as projection mapping, 3D and VR (using Unreal Engine.)
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 284 Performative Avatars (2 Credits)
Whether it's through photo realistic scans found in current-gen video games or the cartoonish and low-fi aesthetic of Bitmoji there is no limit to ways in which the body and the self are represented in digital spaces. This 2-credit class will look at how avatars have been historically used in the realm of art, commerce, and entertainment and utilize existing avatar creation tools to develop projects that examine identity, body politics, and contemporary performance. In class, we will cover the basics of Unreal Engine, photogrammetry, 3D scanning, and model rigging although students will be encouraged to use existing skill sets and creative thinking to complete some of the smaller week-by-week assignments. The class will culminate with a short performance, small installation or single/multi-channel video piece using one or more of the techniques covered in class. This can be a solo project or a group project. In this class students will: − Explore how avatars can be utilized in your creative practice − Gain an introductory understanding of Unreal Engine, photogrammetry, model rigging, and 3D scanning. − Learn how to recontextualize digital spaces for the purposes of art, installation, and performance. − Broaden your thinking of what performance can be, both in a physical setting and digital setting. − Think critically about how physical bodies inhabit digital spaces and how the hardware and software we use reinforces the acceptance and value of certain kinds of bodies.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 285 Real-Time Media (4 Credits)
This course focuses on designing, developing and delivering real-time, performative work using audio and video elements. The class will have an emphasis on using MaxMSPJitter and other tools to create performative experiences that dynamically combine interactive elements such as video, sound, and code, allow for the unfolding of engaging narratives, and generate compelling visuals in real time. We will look at various examples of both multimedia performances and installations, explore how we can apply the technologies we have learned to design real-time systems, and discuss methods we can use to make our work more engaging. The class is three-fold and divided into tech tutorials, discussions of existing examples, and in-class performances.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 286 Collective Narrative (2 Credits)
This two-point workshop is centered on the examination and creation of collective storytelling environments. We will examine a wide-range of storytelling spaces including participatory and user-generated environments, site-specific works, community based arts practices, and transmedia storytelling. Coursework consists of weekly multimedia assignments to reflect on storytelling in our own lives and the lives of others, field trips, and student presentations. By the end of this course, students will have experienced and experimented with alternative, collaborative, and site-specific storytelling methods.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 288 Animation: Methods of Motion (4 Credits)
This course explores the fundamentals of storytelling through animation and takes students from traditional animation techniques to contemporary forms. In the first part of the course, students will focus on traditional animation, from script to storyboard through stop motion and character-based animation. The course then examines opportunities afforded by new technologies, such as interactivity, projection mapping and game engines. Drawing skills are not necessary for this course, however students will keep a personal sketchbook.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 289 Electronic Rituals, Oracles and Fortune-Telling (4 Credits)
According to anthropologists Filip de Boeck and René Devisch, divination "constitutes a space in which cognitive structures are transformed and new relations are generated in and between the human body, the social body and the cosmos." In this class, students will learn the history of divination, engage in the practice of divination, and speculate on what forms divination might take in a world where the human body, the social body, and even the cosmos(!) are digitally mediated. Starting with an understanding of ritual and folk culture, we will track the history of fortune-telling from the casting of lots to computer-generated randomness to the contemporary revival of Tarot; from reading entrails to astrology to data science; from glossolalia to surrealist writing practices to the "ghost in the machine" of artificial intelligence. Weekly readings and assignments culminate in a final project.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 290 Playful Experiences (4 Credits)
Forget the screen. People want to be part of the action. They don't want to watch detectives and control superhero avatars. They want to solve the mystery and be the hero. They want to experience it. We see this craving for playful experience in everything from immersive theater to escape rooms to the Tough Mudder to gamified vacation packages. Designing live experiences for large audiences that demand agency offers a distinct set of challenges, from how much choice you give each participant to how many people you can through the experience. We'll look at examples from pervasive games to amusement parks to immersive theater, examining both the design choices and technology that make the experiences possible. Along the way we'll create large, playful experiences that put the participant at the center of the action. This class focuses on the particular design problems of large-scale games and playful systems. In this class students develop a foundation in design fundamentals from which to approach the problems of design particular to experiential entertainment. We will analyze existing digital and non-digital games and playful experiences, taking them apart to understand how they work. We will also work on a series of design exercises that explore the social, technological, and creative possibilities of play. The class will be broken into three sections: People, Time and Space. People will focus on experiences that coordinate the actions of a large number of participants. Time will focus on experiences that stretch out in time and begin to integrate with our everyday lives. Space will ask you to design an experience that takes advantage of physical space and integrates other elements of the class.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 291 Storytelling for Project Development (4 Credits)
This course challenges how you use technology to tell a story. We will start with storytelling linear basics and progress towards non-linear storytelling and new media arts considerations. This course is helpful for participants who want more grounding in storytelling, want to strengthen their voice, and are interested in building worlds beyond the one we currently experience. This course considers a range of mediums but does not expect you to be an expert in any; it allows you to experiment and explore different mediums throughout the semester. We will spend the beginning of the semester researching and engaging in small assignments based on storytelling basics, primarily focused on writing and prepping storyboards and scripts, basics of visual design, and interaction design. Our midterm will ask the class to retell the same story by translating a prose text into the medium of your choice. The last section of the course will focus on a survey of new media storytelling. Students will concentrate on a final project which asks them to present a story (original or adopted) via the medium of their choice. Final projects are critiqued based on storytelling techniques discussed in class, clarity of story, and presentation. You do not have to come in with a project in mind; however, if you do, there will be plenty of space in your final assignment to explore it, considering the techniques practiced in class.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 293 Shared MInds (4 Credits)
What capabilities does computational media have for depicting and conveying the experience of our minds? In using the new possibilities of machine learning networks to create media, what should we take or leave from cinema, social media and virtual reality? In this course we will start out by turning inward to reflect on how our mind transcends time and space and how artificial neural networks might better capture the multidimensional space of our thought. We then turn to using cloud networking and databases to share our thinking with other people across time and space. Finally we need to flatten everything back into 4D interfaces that, while being stuck in time and space, can reach our embodied, emotional and experiential ways of understanding of the world. The class will operate at a conceptual level, inviting students' empirical, psychological and philosophical investigations of the nature of their experience and how to convey it with art and story. It will ask students to look critically at existing computational media's tendencies to bore, misinform, divide or inflame its users. But this is also very much a coding class where students will prototype their own ideas for new forms of media first with machine learning models like Stable Diffusion using Huggingface APIs or Colab notebooks, and then with networking and databases using Firebase or P5 Live Media, and finally with 3D graphics using the threejs library. Students can substitute other coding tools but game engines will not work for this class. The coding is in javascript, with touches of python, and is a natural sequel to Creative Computing.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 295 The Nature of Code (4 Credits)
Can we capture the unpredictable evolutionary and emergent properties of nature in software? Can understanding the mathematical principles behind our physical world help us to create digital worlds? This class focuses on the programming strategies and techniques behind computer simulations of natural systems. We explore topics ranging from basic mathematics and physics concepts to more advanced simulations of complex systems. Subjects covered include physics simulation, trigonometry, self-organization, genetic algorithms, and neural networks. Examples are demonstrated in JavaScript using p5.js.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 296 Politics of Code (4 Credits)
Deconstructing the design and implementation of software as a political medium and re-building functional alternatives. Code is political. It is a means of political processes and activism. It is political inherently by the ethical choices often hidden in the black box of The Algorithm. In the course we aim to deconstruct the design, implementation, and data of software as a political medium. We will work through political applications such as ownership of digital assets, predictive policing, algorithmic recommendations, suggestions, and filters, social networks, and the blockchain. Along with an introduction to the related political theory and media studies, students will work on several hands-on projects to offer actual or speculative alternatives to the existing systems. To that end, this course will include several workshops in JavaScript, Python, and other tools.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 297 Alter Egos (4 Credits)
Alter Egos embraces abstract storytelling, improvisation, resourcefulness, ritual, performance and self expression through art and technology. Students will develop original personas based on a series of stream of conscious exercises exploring various creative techniques including costuming, sound design, projections and multimedia collage. Class discussions will examine notions of identity, technology, community, health, privacy and encourage participants to venture outside of their comfort zone to radically imagine new approaches to creative expression. The course will culminate as a live event showcasing audio-visual performances by participants (in costume) as their Alter Egos.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 400 Capstone (4 Credits)
The interactive project will illustrate students' unique interests as well as evidence of competency within the field of interactive media production. Students are encouraged to develop their project around a theme previously explored in their work. Projects will be presented and critiqued repeatedly throughout the capstone process to peers, faculty, and industry professionals. A final presentation of the interactive project will be delivered late in the semester. The research paper (4000-5000 words) will focus on at least one aspect of the interactive project: e.g. culture, theory, philosophy, or history, the project context, and/or production methods. For example, students may write about their project's reception by a set of specific users, or by users who are part of a larger culture, society, or market. It is important that students think beyond the project itself and situate it in a broader context accessible through research. The research paper will include an annotated bibliography of the books and other resources they used for their research. Students will also be guided in the production of an online portfolio to showcase their work and accomplishments to the outside world. Graduates will be evaluated by their portfolio when applying for jobs, graduate school, artist residencies, grants, and the like. Portfolios will be tailored to the demands of each student's future goals and target audience.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 901 Internship (1-4 Credits)
The IMA Internship course (IMNY#UT 901) is a credit-bearing academic course that integrates supervised work experience with structured reflection, through an internship secured independently by the student. Participants engage in experiential learning that applies the concepts, observations, and principles from their coursework to a professional setting. The academic component includes written reflections, one-on-one advisor meetings, group discussions, and an evaluation from the student's workplace supervisor. Successful completion of both the internship and academic assignments is required to earn credit, and the course appears on the transcript as an Internship. Credits count toward electives.
Grading: Ugrd Tisch Pass/Fail
Repeatable for additional credit: Yes

IMNY-UT 902 Independent Study (1-4 Credits)
Course description (optional):Students may enroll in an Independent
Study to develop a project or undertake research that is not covered by
an existing course in the department. Working with a full-time faculty
member, students must develop a plan of study that outlines the project
or research, the schedule, and the number of contact hours with the
faculty (at least one meeting every two weeks is required) an approximate
number of hours per week to be spent on the work (4-5 hours per week
for 14 weeks per point of Independent Study). IMA majors may not take
more than 4 credits of Independent Study throughout their time in the
department. Course is subject to departmental equipment fee.
Grading: Ugrd Tisch Pass/Fail
Repeatable for additional credit: No

IMNY-UT 9001 Augmenting the Gallery (4 Credits)
Wall labels, audio guides and informative maps are just some of the
ways galleries and museums convey additional information about an
art collection. How can we utilize new interactive mixed reality tools to
design and deliver immersive experiences that breathe new life into an
exhibit. Augmented and virtual reality are powerful tools for new media
production and storytelling, but how can these tools serve to enhance
our Wall labels, audio guides and informative maps are just some of the
ways galleries and museums convey additional information about an
art collection. How can we utilize new interactive mixed reality tools to
design and deliver immersive experiences that breathe new life into an
exhibit. Augmented and virtual reality are powerful tools for new media
production and storytelling, but how can these tools serve to enhance our
gallery experience without distracting from the power and importance
of a pre-existing collection? This production course seeks to experiment
with new ways to experience a museum collection through mixed reality.
Topics covered include exhibition installation and curation, mixed reality
production in Unity, mobile development for Augmented Reality.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 9260 Topics in Media Art (4 Credits)
Typically offered Fall and Spring
This course is designed to provide students with hands-on experience
working with media art centered around a specific topic, theme, or
technology, as well as provide a critical framework for understanding
the subjects discussed. The history and theory of the specific topic of
media art is explored in a studio context consisting of experimentation,
discussion and critical analysis. Students will create a final work or
polished prototype/proposal, as well as several small-scale experiments
that build skills towards their final.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: No

IMNY-UT 9281 Topics in Media Art (2 Credits)
This course is designed to provide students with hands-on experience
working with media art on a specific topic, theme, or technology, as well
as provide a critical framework for understanding the subjects discussed.
The history and theory of the specific topic of media art is explored in
a studio context consisting of experimentation, discussion and critical
analysis. Students will create a final work or polished prototype/proposal,
as well as several small-scale experiments.
Grading: Ugrd Tisch Graded
Repeatable for additional credit: Yes