

CREATIVE ARTS AND TECHNOLOGY - BLOOMFIELD COLLEGE (CAT)

CAT 107 Introduction to Music Technology (3 credits)

Restriction(s): CAT majors only. This course will provide hands-on experience recording, editing and mixing digital audio. Pro Tools and Digital Performer will be the primary software programs used on the Macintosh computer platform. The student will work with files that contain spoken work, sound effects and music files. In addition the student will be given the opportunity to work with audio files and QuickTime movie files. Students should be prepared to spend lab time out of class.

CAT 108 Introduction to Game Design (3 credits)

This course covers the broader aspects of the games industry such as its history, its current state and potential future evolution, and the team-based development environment. It then focuses on core game design concepts and their application as students create documentation and work in collaborative groups to develop analog games. Satisfies SEEDS Creative Expression student learning outcome in alignment with Self-discovery and Self-Care value.

CAT 116 Movement for Animators and Filmmakers (3 credits)

Restriction(s): CAT majors only. This course explores the movement of both humans and inanimate objects through the study of Commedia Dell Arte, mime, acrobatics, stage, combat, and street theatre. This knowledge is used in the creation of animation and film pieces, with special attention to such advanced technologies as motion capture and green screen.

CAT 117 Process Interaction: An Introduction (3 credits)

CAT 117 PROCESS & INTERACTION: AN INTRODUCTION.

CAT 120 Drawing I (3 credits)

This course teaches basic drawing skills. Students will develop keener powers of observation by drawing still lifes, live models and nature. By analyzing the contours, surfaces, bone structures by measuring the curves and angles of the objects and people they draw, students will gain an appreciation of the world around them. Satisfies SEEDS Creative Expression student learning outcome in alignment with Diversity and Intercultural Competency value.

CAT 121 CAT Foundation Studio (4 credits)

This is a team-taught freshman foundation class, a platform for experimentation, collaboration and networking. After meeting as a large group, the class divides into rotating sections. Each professor creates a teaching environment to broaden students' background knowledge, connect them to a personal creative path and welcome them as members of the CAT community. Students must receive a grade of "C" or better to continue as a CAT major. This course may not be repeated without an approved petition from the Academic Standards Committee.

CAT 126 Digital Photography (3 credits)

Study the history of photography and explore the aesthetic opportunities of digital cameras. Practice storytelling through the development of single and sequential images. Learn about the operational functions of a digital single lens reflex (SLR) camera, digital editing, digital retouching, color management and output, and lighting for studio shots. Satisfies SEEDS Creative Expression student learning outcome in alignment with Diversity and Intercultural Competency value.

CAT 127 Introduction to Esports Management (3 credits)

This course introduces the esports industry and the fundamentals of effective management. Students will examine the history and structure of esports, with attention to stakeholders, business models, event operations, technology, legal and ethical issues, career paths, and emerging trends. Students will have foundational knowledge of esports as both a business and cultural industry.

CAT 130 Introduction to Data Visualization (3 credits)

Prerequisite(s): MTH 140, MTH 141, MTH 160, MTH 161, or MTH 131. The class will discuss contemporary visualizations and critique their effectiveness in conveying information. Students will learn techniques for visualizing multivariate, temporal, text-based, geospatial, hierarchical, and network-based data. Students will learn how to acquire, parse, and analyze datasets and the process of encoding data visualizations to achieve aesthetically pleasing, effective communication. Equivalent course CMP 130 effective through Spring 2026.

CAT 134 Drawing For 2-D Animation (3 credits)

This 2D Drawing for Animation course invites students of all backgrounds to explore their creative voice through the foundational principles of traditional 2D animation, focusing on movement and visual storytelling. In this course, students will enhance their observational awareness, communication skills, and artistic confidence as they experiment with animation concepts and principles. By engaging in structured exercises and creative problem-solving, they will refine their artistic voice while developing patience, critical thinking and resilience. This course fosters both technical growth and self-discovery in a supportive and encouraging learning environment. Satisfies SEEDS Creative Expression student learning outcome in alignment with Self-Discovery and Self-Care value.

CAT 150 History and Culture of Games (3 credits)

In this course, we trace the roots of the oldest games that we know of. We examine historically and culturally significant games through time, towards the incredibly ludic-minded and globalized present-day. Satisfies SEEDS Literary and Artistic Analysis student learning outcome in alignment with Diversity and Intercultural Competency value.

CAT 191 Beginning Piano I (3 credits)

Group instruction offered in the electronic piano lab for students who have had no previous piano training. The emphasis will be on playing simple pieces, reading, basic keyboard harmony and elementary keyboard technique. This course does not carry General Education elective credit.

CAT 192 Beginning Piano II (3 credits)

Prerequisite(s): CAT 191. A continuation of CAT 191.

CAT 194 3D Design (3 credits)

The study of sculpture begins with an understanding of three-dimensional forms in space: how to imagine, draw, construct or shape them using a range of scale and materials. We will explore the concepts of volume, shape, form, time, and light, and sound in a series of group and individual creative design projects.

CAT 200 Music Theory I (3 credits)

Prerequisite(s): CAT 191, may be taken concurrently. The fundamentals of music including: notation, intervals, scales and chords are explored. Emphasis is placed on demonstrating the results of study realized through the successful completion of projects designed to exhibit the students' understanding of the topics presented. The following software packages will be used: Pro Tools, Reason, Digital Performer and Finale.

CAT 201 Music Theory II (3 credits)

Prerequisite(s): CAT 200. A continuation of Music Theory I.

CAT 203 World Art I (3 credits)

Prerequisite(s): WRT 102, WRT 105, or WRT 106. Great works of art reveal the values, beliefs, and worldviews of the cultures that produced them. In this course, students will explore and compare both the visible and hidden meanings in the art and architecture of the world's great civilizations—from prehistoric times through the Gothic period in Europe. Through focused study of ancient cultures such as Egypt, Greece, Rome, India, China, Africa, Mexico, and Peru, students will develop the ability to understand diverse cultural contexts and to communicate and function effectively within them. Satisfies SEEDS Analyzing Cultures and Societies student learning outcome in alignment with Diversity and Intercultural Competency value.

CAT 204 World Music (3 credits)

Prerequisite(s): WRT 105 or WRT 106 may be taken as a corequisite. A survey course designed to stimulate the interest in and understanding of the music of representative world cultures including: Native American, Sub-Saharan Africa, India and China. The focus will be on the comparison and contrast of both classic folk forms and more the contemporary forms as they continue to evolve and function in their individual cultures. The student is responsible for outside listening, research projects and field trips.

CAT 205 Basic Sequencing (3 credits)

Prerequisite(s): CAT 107. Explores the MIDI programming language as it applies to digital music production on the Macintosh system platform. Course content and projects are designed to aid students in establishing both a comprehensive and creative approach to computer music composition. Software applications include Reason, Live, Pro Tools and Logic. Formerly CAT 109.

CAT 206 Screenwriting (3 credits)

Prerequisite(s): WRT 105 or WRT 106 with a final grade of C- or better. The focus is on writing a feature-length film and the basic elements of plot, protagonist, turning point, and resolution. You will be expected to complete a step outline of your story and the first act of your screenplay. Mutually Exclusive with CRW 206.

CAT 208 Illustration and Graphic Design for Games (3 credits)

Prerequisite(s): CAT 108. Restriction(s): CAT majors only. Techniques derived both from traditional illustration, comic books, and the latest computer graphics software to create visual representations of characters, environments, props, and textures.

CAT 210 Digital Audio Engineering I (Recording) (4 credits)

Prerequisite(s): CAT 107 and CAT 205. Restriction(s): CAT majors only. Working in a critical and collaborative environment, students learn and put to use the fundamentals of sound recording. Acoustics, microphone usage, studio techniques, and advanced sequencing are stressed. Students achieve proficiency in equalization, compression and reverb. CAT 210 is a hands-on audio recording course which emphasizes listening, creativity, and critical discourse around the past, present and future of recorded sound. Formerly CAT 119.

CAT 211 Artists of the 20th Century (3 credits)

Prerequisite(s): WRT 107, WRT 108, or WRT 109. Paris as the bustling artistic and cultural nexus and the birthplace of Modernism. A study of the art and culture of France from 1870 to 1945, with focus on artists who changed our way of seeing: Manet, Degas, Monet, Renoir, Cezanne, Morisot, Cassatt, Van Gogh, Gauguin, Rodin, Claudel, Vuillard, Bonnard, Braque, Matisse, and Picasso.

CAT 213 Musical Improvisation (3 credits)

Focus on the musical ensemble skills associated with improvisation. Course will be participatory, and bulk of the time in class will be spent playing music. Diverse cultural approaches to improvisation—African/American, South Indian, and European—will be explored. This course may be repeated for credit for a total of 3 semesters. Satisfies SEEDS Creative Expression student learning outcome in alignment with Self-Discovery and Self-Care value.

CAT 215 Level Design (3 credits)

Prerequisite(s): CAT 253. Restriction(s): CAT majors only. Like a good game, level design is easy to learn and difficult to master. There are many aspects to consider such as player ergonomics, flow, difficulty, boundaries, storytelling, tension, risk/reward, and game balancing. This course teaches you the basics, and helps you develop the requisite skills of good level design.

CAT 217 Drawing II (3 credits)

Prerequisite(s): CAT 120. Drawing is often considered a preliminary step toward the achievement of an artist's final work in sculpture or painting. However, drawing is also an independent art form and is valued as the most direct, personal expression of the artist. Both aspects of drawing are studied in works by the world's old and modern masters. Through this study and hands-on practice, students will not only gain greater understanding of drawing materials and formal problems—experimenting with chalk, charcoal, pen and ink, pencil, and pastels—but will also engage with broader disciplinary perspectives that support a healthy, meaningful, and productive creative life. In doing so, students are encouraged to reflect on their own artistic identity and develop a deeper sense of self. This is a more advanced course than CAT 120 – Drawing I. Satisfies SEEDS Creative Expression student learning outcome in alignment with Self-Discovery and Self-Care value.

CAT 218 Painting (3 credits)

Studio work in composition and color in acrylic or oils.

CAT 222 Global Art History (3 credits)

Prerequisite(s): ENG 107A or ENG 107B. The course includes at least a week of intensive group travel and study abroad. Our goal is to increase your appreciation of art history, to develop your communication with the enjoyment of people in another country, and to make you an experienced traveler. The best way to understand works of art and architecture is to see the originals in their country of origin. This course prepares you to study art history abroad by familiarizing you in advance in class with art in its cultural context. Students have found this course to be a life-changing experience.

CAT 224 Music in the United States: The African/American Influence (3 credits)

Prerequisite(s): WRT 102, WRT 105, or WRT 106. Musical traditions brought to our country from abroad. The development of American musical culture from colonial times to the present, including a survey of African/American music from its tribal and colonial origins to the present. The sociological impact of jazz upon Western music and culture. (Also AFS-224)

CAT 228 3D Stop-Motion Animation (3 credits)

Prerequisite(s): CAT 134 is strongly recommended. Restriction(s): CAT majors only. This course will explore the basics of motion animation using clay, puppets and many other 3D objects. Students will learn how to pitch an idea, develop a concept and work up a production schedule for exercises using cutouts, collage and clay, in 3D stop-motion techniques with digital cameras.

CAT 230 History of Animation (3 credits)

Prerequisite(s): WRT 107, WRT 108, or WRT 109. Writing Intensive Aesthetic Appreciation. This class will explore the history and development of animation throughout the 20th century. Major social and technological movements and the effects they had on animators working at the time will be analyzed and discussed. This work will be examined to see how animation has developed as an art form. The class will read related texts and view historic and contemporary animation work. Formerly CAT 114. Satisfies SEEDS Literary and Artistic Analysis student learning outcome in alignment with Diversity and Intercultural Competency value.

CAT 232 Japanese Culture Language (3 credits)

Prerequisite(s): WRT 107, WRT 108, or WRT 109. Be it anime, judo, sushi, the films of Kurosawa, the cars of Toyota, or the latest game from Nintendo, Japanese culture is very much a part of the American way of life. This course offers a fascinating look at both traditional and contemporary Japanese art forms within the context of Japanese politics, history, and lifestyle. Test, film, multimedia, guests, and class trips will inspire and prepare you for a visit to Japan, and each class session will include lessons in speaking basic conversational Japanese.

CAT 235 World Art II (3 credits)

Prerequisite(s): CAT 203A. European art and architecture from the Renaissance to the late nineteenth century, taught from the perspective of international travel, trade, and cultural interactions. We will study works of art first-hand in New York and local museums and see the influence of key artists on each other, the evolution of their styles, technical practices, and content.

CAT 236 Visual Design for Games (3 credits)

Prerequisite(s): CAT 108. Restriction(s): CAT majors only. Techniques derived both from traditional illustrations, comic books, and the latest computer graphics software to create visual representations of characters, environments, props, and textures.

CAT 237 Group Game Project I (4 credits)

Prerequisite(s): CAT 238 or CAT 253. Restriction(s): CAT majors only. This course focuses on the core processes for making a game as a collaborative group. Learn valuable preproduction and documentation skills that go beyond the initial Game Design Document. Manage the project with schedules, milestones, and an iterative development process that includes intensive testing, version control, and effective communication strategies.

CAT 238 Game Programming I (3 credits)

Prerequisite(s): CAT 253 or CMP 126. Restriction(s): CAT majors only. Learn about the methodologies and tools that are used to program games. Topics include: Repositories/Revision Control, Paired/Extreme Programming, SCRUM/Agile Development, Rapid Prototyping, Multiple Processors/ Threads, Client/Server Basics, Debugging, and Remote Programming. You will also learn how to evaluate and choose the proper game engine for a project.

CAT 241 Pre-Production Animation (3 credits)

Restriction(s): CAT majors only. The basic concepts and techniques of storyboard and layout including visualization and scriptwriting are important to the pre-production process of animation and are emphasized in this course. The student will learn continuity and basic story structure in a storyboard form from rough sketches to a finished presentation.

CAT 244 VISUAL COMMUNICATIONS (3 credits)

Understanding the ways in which visual ideas function and what they represent in our media, landscape of advertising, news and popular, culture requires important navigational tools, and critical thinking skills. This class will explore a range of concepts and theories used to acquire analytical approaches towards the achievement of visual literacy.

CAT 247 Design Thinking and Practice (3 credits)

Students will collaborate across disciplines to identify a project, topic, or design idea of social significance they explore, question, research, and analyze leading to resolution. They will extend their learning experience through trips and virtual worlds to help them design and communicate their work with a public they identify. Discussing, collaboration, innovative research and varied technologies that accompany design practice will be tools for learning and expression in this course.

CAT 250 Selected Topics in Technology (3 credits)

Prerequisite(s): Completion of two 100-level CAT courses. Student team work on collaborative projects using the latest technology, software and social media. Please contact your instructor for specific topic.

CAT 251 Hip Hop Theory (3 credits)

Prerequisite(s): WRT 107, WRT 108, or WRT 109. An in-depth study of the elements of the various styles of American music that were to become hip-hop. Includes examination of how to formulate hip-hop lyrics and beats. Hands-on experience with sequencing software, computers and samplers, and opportunities to rhyme and free-style to beats made by class members will also be provided.

CAT 253 Digital Game Design (3 credits)

Prerequisite(s): CAT 108. Restriction(s): CAT majors only. Game design is an interdisciplinary process. Learn the processes of rapid prototyping and interactive design, and develop a practice for conductive playtests, critiquing design, and presenting work to others.

CAT 256 Digital Media Writing (3 credits)

Prerequisite(s): WRT 109 or WRT 108. Digital Media Writing invites students to explore the intersections of creative expression, rhetorical strategy, and technological innovation across multiple digital platforms. Throughout the semester, students will craft a professional digital identity, produce compelling audio narratives, create concise yet powerful video content, and develop user-centered solutions for real-world clients. The course emphasizes creative experimentation and thoughtful risk-taking while building practical skills in website design, podcast production, video creation, and collaborative client work. The month-long collaborative client project supports the Engagement, Agency, and Leadership Theme by inviting students to "engage with issues in their communities and develop the confidence and strategies to become leaders and contribute to the public good." Students will critically engage with artificial intelligence tools, considering both their creative potential and ethical implications for digital media practitioners. Through regular reflection in an ePortfolio, students will document their creative processes, articulate their decision-making, and develop self-awareness of their evolving digital media practice. This intensive journey into digital media writing prepares students not only to produce compelling content across platforms but also to develop their unique creative voice in an increasingly multimodal communication landscape. Mutually Exclusive with WRT 256.

CAT 257 Video I (3 credits)

An introduction to video as a creative visual, auditory, and spatial medium. Students learn the fundamentals of video production with the goal of making original work in the genres of single-channel, performance, and installation. Works by filmmakers and video artists are viewed and discussed. It is highly recommended that students take CAT 126 Digital Photography prior to enrolling in this class.

CAT 258 VIDEO II (3 credits)

Prerequisite(s): CAT 257 or consent of the instructor. Students expand their video production skills while increasing their knowledge of the history and theory of video. The course focuses on advanced camera techniques, video installation and alternative video practices. The grammar and aesthetics of editing in the visual storytelling process will also be emphasized.

CAT 259 Media Histories (3 credits)

Prerequisite(s): WRT 107, WRT 108, or WRT 109. Writing Intensive Aesthetic Appreciation. This course examines the evolution of mechanically reproduced media and its inevitable application by the aesthetic community, beginning with the invention of the film camera (1800s) to digital technology (1940s) to the contemporary field of interactivity, sound and image. This course discusses the convergence of the scientific, military, and political environments that spawned the employment of technology. Satisfies SEEDS Literary and Artistic Analysis student learning outcome in alignment with Diversity and Intercultural Competency value.

CAT 261 Interaction And Interface: Introduction To Physical Computing (3 credits)

The division between the physical and the digital is becoming increasingly blurred. This course will investigate the concept and design of interactive objects. Using an open-source platform such as Arduino, a series of hand-on exercises will expose the students to various techniques and encourage them for further inquiry. The basics of electricity and electronics, hardware hacking and prototyping will be explored.

CAT 263 2D 3D Digital Drawing for Graphics Production (3 credits)

The foundation course for the study of graphic design. Students conceptualize solutions to communications problems by conducting research and creating preliminary sketches. Students participate in peer/instructor project review sessions. A portfolio of printed projects is produced at semester end.

CAT 264 Computer Imaging (3 credits)

Prerequisite(s): CAT 121 or CAT 121A. Students will use the latest version of Adobe PhotoShop, an essential tool for any visual artist working with computers-animators, graphic designers, web makers, special effects artists, multimedia and design professionals. This course teaches the advance principles of digital imaging and manipulation, including digitizing, editing, color correction, special effects and transformation techniques used by PhotoShop Pros. It will emphasize the methods used to scan and collage images from photographs, to retouch and alter these images and to create complex design solutions and illustrations. Students are required to register for laboratory time.

CAT 265 Tabletop Game Design (3 credits)

Prerequisite(s): CAT 108. Restriction(s): CAT majors only. Explore games as systems to learn to solve increasingly difficult problems that require exploratory design and extensive testing to find a combination of mechanics that effectively solves each problem. Work individually and in groups to design, test, and build tabletop games.

CAT 270 Web Design I (3 credits)

The foundation course for the study of graphic design for the World Wide Web. This course teaches the student the language of the WWW (XHTML), its visual presentation (CSS), and how to communicate with one's audience. Focus is placed on including multimedia information in an interactive environment.

CAT 274 Game Programming 2 (3 credits)

Prerequisite(s): CAT 238. Restriction(s): CAT majors only.

CAT 276 Advanced Photography (3 credits)

Prerequisite(s): CAT 126. In this advanced studio course, students improve their creative and technical skills while exploring questions related to the status of the photographic medium and the art of photography through reading, discussion and assignments. Presentations on historical and contemporary artwork introduce various photographic genres and emerging technologies. Using Adobe Lightroom, students develop effective workflows for sorting and editing images, refine image adjustment skills, and perfect printing ability. As they work toward developing a personal visual language, participants experiment with new approaches to visual storytelling, sometimes pushing their projects beyond the still image.

CAT 278 Digital Publishing (3 credits)

Restriction(s): CAT majors only. This course provides students with the opportunity to learn the basics of layout design, typesetting, printing and binding a booklet, and how to create a webpage from an InDesign file with ease. Students choose their own research theme for the booklet.

CAT 286 Sound Design I: Audio for Video I (3 credits)

Prerequisite(s): CAT 107. Through project-based work, students will learn the process of creating audio for multimedia productions including film television, games, and the web. Topics include recording, mixing, editing, foley, worldizing, and dialogue replacement. The class will also examine the interplay between sound design and music and how to successfully create scores and ambiances. Aesthetics as well as technology will be discussed throughout the semester, and at the end, students will compile a reel of their work.

CAT 300 MIDI Composition and Production I (3 credits)

Prerequisite(s): CAT 107, may be taken concurrently. Students will explore compositional techniques through a survey of strategies of various musical parameters, through analysis and original composition and production projects. Students will create original compositions and these will be critiqued in class and revised. Orchestration and arranging techniques will also be addressed.

CAT 301 MIDI Composition and Production II (3 credits)

Prerequisite(s): CAT 300, may be taken concurrently. Students will explore compositional techniques through a survey of strategies of various musical parameters, through analysis and original composition and production projects. Students will create original compositions and these will be critiqued in class and revised. Orchestration and arranging techniques will also be addressed.

CAT 305 Sound Design II: Audio for Video II (3 credits)

Prerequisite(s): CAT 107. A continuation of the first semester, this course is focused on longer, more in-depth work. Through, individual development as well as group projects, students will gain insight in to the experience of working on a production team that will carry into the workplace. Further discussion of aesthetics and the role of sound in our visual world and sound and music in media will be explored. Formerly CAT 287.

CAT 308 Group Game Project II (4 credits)

Prerequisite(s): CAT 237. Restriction(s): CAT majors only. This course continues the focus on core methodologies for collaborative game development. The interactive development process will be enhanced through online communication strategies, version control and a rigorous review process. In addition, students will gain a better understanding of the art pipeline for both 2D and 3D game engine environments.

CAT 310 Digital Audio Engineering II (Mixing) (4 credits)

Prerequisite(s): CAT 210. Restriction(s): CAT majors only. Working in a critical and collaborative environment students develop advanced recording projects and learn the art of mixing. Through focused listening, reading, discussion, group critique and disciplined studio practice, students begin to achieve professional quality in their work. Students learn advanced mixing techniques including customized effect, 3D listening, and precision editing. CAT 310 is a hands-on studio production course which emphasizes development of the ear, attention to detail, creativity, and critical discourse in sonic manipulation. Formerly CAT 229.

CAT 311 Business of Graphics (3 credits)

Restriction(s): CAT majors only. This course was designed to provide you with the information and tools needed to begin a freelance or full-time career. Some of these include a comprehensive overview of business practices, systems and interpersonal skills. Among the subjects to be covered are the studio set-up, portfolio, résumé, how to research and identify markets, promotion, taxes, copyright, negotiation and contracts.

CAT 323 Music Industry Essentials (3 credits)

Prerequisite(s): WRT 107, WRT 108, or WRT 109.

CAT 327 Game Programming Studio (3 credits)

Prerequisite(s): CAT 238. Restriction(s): CAT majors only. What are the strengths and limitations of game engines? Further examine the tools used for game development to go beyond the fundamentals of programming.

CAT 328 Artificial Intelligence for Games (3 credits)

Prerequisite(s): CAT 238. Restriction(s): CAT majors only. This is the all-important element that breathes life into those seemingly thinking creatures, found in today's games. See how state machines, decision making, path finding, and both, construction all play a role in making them, believable.

CAT 329 Character Design (3 credits)

Prerequisite(s): CAT 134. Restriction(s): CAT majors only. Character Design is a "drawing-heavy" course that covers character development and design techniques, models sheets and current software to achieve character creation for a variety of platforms. These genres include comics, the graphic novel, illustration, game, children's books, as well as 2D, 3D and Stop-Motion animation. Students will create characters that are unique, relatable, and experimental. The history of character design and character animation will be discussed as it applies to the course each week.

CAT 332 Life Drawing For Motion (3 credits)

Restriction(s): CAT majors only. Through a series of critical concerns in the analysis of an action and motion drawing, the student will be able to understand the difference between drawing for animation and drawing for illustration. The art of conveying gestures while learning the construction and mechanics of the human figure will be examined.

CAT 336 Designing Environments for ST (3 credits)

Prerequisite(s): CAT 134. Restriction(s): CAT majors only. Designing Environments for Story will focus on developing core skills used for layout and background design for animation production, drawing from life, perspective, composition, staging, understanding scripts, translating storyboards to layout, color theory, mood, camera movements, lenses, traditional and digital painting.

CAT 352 SELECTED TOPICS IN TECHNOLOGY (3 credits)

In-depth study of the latest developments in technology and the arts (digital video, 3-D, animation, the Internet). This course may be repeated once for credit. (Also CAT 360)

CAT 360 Selected Topics in Technology (3 credits)

Prerequisite(s): Completion of two 100-level CAT courses. In-depth study of the latest developments in the technical aspects of communications and the arts, (e.g., virtual reality, hypertext, etc.). This course may be repeated once for credit. (Also CAT 352)

CAT 361 3D Modeling (3 credits)

Students will learn to construct CG 3D models by breaking down complex shapes into simpler components that can be modified, transformed, and animated using the industry standards software in 3D computer generated model building and animation.

CAT 362 Typography (3 credits)

Prerequisite(s): CAT 278. Restriction(s): CAT majors only. Study the historical development of type, typeface design, and the use of type as an expressive image. This course will teach you the typographical skills to succeed as a graphic designer.

CAT 363 ADVERTISING CONCEPTS AND DESIGN (3 credits)

Learn the methods graphic designers use to give products a brand identity. Explore ways to creatively and effectively execute the brand concept in print and digital design. Invent your own product and produce an ad campaign for it.

CAT 364 Motion Capture with Motionbuilder (3 credits)

This course is a practical approach to learning Motion Capture and the fundamentals of Motion Builder. Students will learn how to work with the motion capture data on a professional level with an emphasis on navigating the interface importing and applying motion capture data to a virtual actor and virtual character. Concepts of character retargeting, filters f-curves, plotting 3D data, constraints, cameras, rendering lights, materials, and shades will also be addressed.

CAT 365 Art in Interdisciplinary Space (3 credits)

This course is a collaborative interdisciplinary art class which concentrates on the development of concepts through research and practice. As a semester long project, students will be asked to write and invent a creation myth, do research around their project and implement their story through artwork.

CAT 366 Motion Design (3 credits)

Prerequisite(s): CAT 257 or CAT 264, may be taken concurrently. Restriction(s): CAT majors only. Students explore the fundamentals of time-based motion for animation, video and game using a combination of motion design, image compositing and Adobe After Effects. Emphasis will be on design, composition, conceptualization and ability to communicate ideas. Students also apply basic principles of storytelling to create short sequences and narrative works.

CAT 368 Immersive Design (3 credits)

Problem Solving/Critical Thinking. What does it mean to create meaningful, interactive experiences? Students will create, interactive installations and environments. Contemporary software and hardware will be covered, with students creating physics projects. A variety of mechanisms (edge detection, color, tracking, capacitance sensors, presence sensors,, custom switches, ect) will be covered. Class discussions include topics of interactivity, art, media, design, space, and installation.

CAT 369 Game Theory Analysis (3 credits)

Prerequisite(s): CAT 108 or CAT 108H. Restriction(s): CAT Majors only. This course introduces game theory concepts and critical analysis with a focus on European game mechanics.

CAT 370 Advanced Web Design (3 credits)

Prerequisite(s): CAT 270A or CAT 270B. This course provides the web site Creative Director with a working knowledge of the latest Internet technologies necessary for sophisticated interactivity and business-related functions. Topics include managing a web server, DHTML, XML, Java Script, CGI, FTP, Telnet, and databases. This course will keep pace with the most recent developments in the field.

CAT 372 3D ANIMATION (3 credits)

Prerequisite(s): CAT 361. This course continues with the latest industry standard software exploring more advanced 3D modeling construction along with a strong emphasis on the theories and principles of motion for animation. (Formerly CAT 334 Character Animation II)

CAT 380 Internship I (3 credits)

Prerequisite(s): Instructor permission required. Restriction(s): CAT majors only. This semester-long internship is required of CAT majors in their junior year. Placement will be in professional settings appropriate to the student's area of specialization and where the student will have ample opportunity to actually use their new skills: theaters, art galleries, music production companies, television, video & radio studios, design firms, service bureaus, publishing houses, community service organizations, small businesses, and corporations. Field placement is required.

CAT 400 Pre-Capstone: Graphics (4 credits)

Prerequisite(s): CAT 121 or CAT 121A; and CAT 264; and and CAT 270. Restriction(s): CAT majors only. Writing Intensive. This is an advanced imaging/print production class, designed to prepare students to conceptualize a Capstone project. Students tackle advanced creative challenges, acquire advanced production skills, and write and gain approval of a Capstone proposal.

CAT 402 Pre-Capstone: Developing a Recording Project (4 credits)

Prerequisite(s): CAT 300 or CAT 410, may be taken concurrently. Restriction(s): CAT majors only. This is a project based class, and can serve as a preparation for the capstone preparation. Students focus on creativity and logistics of an audio production, through the process of class critiques. Formerly CAT 351.

CAT 403 Pre-Production Capstone: Animation (4 credits)

Prerequisite(s): CAT 121 or CAT 121A; and CAT 228 or CAT 241; courses may be taken concurrently. Restriction(s): CAT majors only. This is an advanced animation pre-production class, designed to prepare students to conceptualize and write the proposal for their senior Capstone project. Before students can advance to CAT-420 Capstone, an approved proposal, including the treatment, a script/screenplay, storyboard and production schedule must be completed.

CAT 406 Preparing the Demo Reel (2 credits)

Restriction(s): CAT majors only. The function of getting your work ready to be seen at festivals by enthusiasts and/or industry professionals, with the intention of getting your "foot in the door," is the basis of this course. We will address the most important factors for introducing yourself to the industry by preparing a diverse, high-quality demo reel, featuring quality animation that shows you have a strong and clear understanding of animation principles. Whether your path is 2D, 3D or a more experimental Stop Motion, in a large commercial studio, an independent animator, or within the festival circuit, this course will investigate the current resources, and prepare you to take the best steps for that direction.

CAT 408 Pre-Capstone: Game Development (4 credits)

Prerequisite(s): CAT 308. Restriction(s): CAT majors only. This is the culmination course for collaborative game development methodologies. It is also the first half of the Capstone experience and incorporates several new pre-production tasks. Students will enter into a developer/publisher relationship with their faculty advisor and go through the necessary steps to get their projects green lighted. Then they will utilize all of their skills to create a working game prototype that is ready for detail and polish.

CAT 409 Pre-Capstone: Expanded Media (4 credits)

Prerequisite(s): CAT 121 or CAT 121A. Restriction(s): CAT majors only. This is an advanced expanded media pre-production class, designed to prepare students to conceptualize and write the proposal for their senior capstone project. Before students can advance to CAT 420 Capstone, an approved proposal, including the treatment, script, storyboard, installation plan and production schedule must be completed. Students must achieve advanced, production skills in CAT 366 or CAT 368 before advancing to CAT 409.

CAT 410 Digital Audio Engineering III (Practicum) (4 credits)

Prerequisite(s): CAT 310. Working in a critical and collaborative environment students develop and complete a semester-long recording project of professional caliber. As a culmination of the DAE series, CAT 410 emphasizes project management, problem solving, originality and technical precision. Students direct the flow of the course which is tailored to meet the specific needs of their projects. Group critique, student-to-student feedback and collaboration are essential elements of the course. CAT 410 is a hands-on studio production course which serves as a bridge to a creative and professional working dynamic.

CAT 420 Capstone Project I (4 credits)

Prerequisite(s): CAT 121 or CAT 121A; and CAT 400, CAT 402, CAT 402A, CAT 403, CAT 408, or CAT 409. Restriction(s): CAT majors only, with permission of the instructor. A final, major independent project undertaken by senior CAT majors under the supervision of departmental faculty. The intention is to create a work that will in some shape become part of the student's portfolio, to be used to market themselves after graduation from the program. Projects take many forms, depending on the student's talents and area of specialization: e.g., production of a videotape or audio tape; design and construction of a book; gallery exhibition of a significant number of works; performance of a solo show. The student must not only complete the project, but also publicize and market it in true entrepreneurial fashion. This course is required of departmental majors and all projects must be approved by a meeting of the departmental faculty. May be repeated for credit for a total of 2 semesters.

CAT 430 Internship II (3 credits)

Prerequisite(s): Consent of the Instructor required. Restriction(s): CAT majors only. This course has the same goals and requirements as Internship I, but the intention is to place the student in a situation at a higher technical level and with even more professional responsibility.

CAT 471 ADVANCED 3D ANIMATION (3 credits)

Prerequisite(s): CAT 372. This course is a continuation of CAT 372 3D, Animation, with further explanation and detailed understanding of the advanced functioning within industry standard 3D software. The emphasis will be on constructing intricate 3D models and, complex animated scenes. The student will be required to produce from start to finish an original collaborated short animation utilizing technical and experimental effects learned throughout the semester.