DGM 5976. Directed Study. 1-4 Hours.
Offers independent work under the direction of members of the department on a chosen topic.

DGM 5978. Independent Study. 1-4 Hours.
Offers independent work under the direction of members of the department on a chosen topic.

DGM 5984. Research. 1-4 Hours.
Offers students an opportunity to conduct research under faculty supervision.

DGM 6105. Visual Communications Foundation. 4 Hours.
Introduces the basic principles and concepts inherent in visual language systems. Covers fundamentals such as visual perception, composition, spatial relationships, color, form, repetition, texture, structure, abstraction, and figure-ground relationships. Student projects focus on visual problem solving with an emphasis on understanding of context, content, and the development of original forms.

DGM 6108. Programming Foundations for Digital Media. 4 Hours.
Offers students an opportunity to learn the fundamentals of programming in a multimedia environment. Emphasizes planning and production for interactive digital media. Using a scripting language as a base, covers how scripting relates to design and programming fundamentals that link logic to action. Topics include graphical user interfaces; user interaction; and algorithmic manipulation of text, graphics, sound, and video.

DGM 6109. Lab for DGM 6108. 2 Hours.
Accompanies DGM 6108. Covers topics from the lecture course through various tutorials and problem-solving exercises.

DGM 6122. Foundations of Digital Storytelling. 4 Hours.
Introduces the fundamentals of character and story development through practical applications in a variety of digital media, from text and storytelling to sound, moving image, and interactive environments. Offers students an opportunity to become familiar with narrative sequencing and story development, experience the critical role of narrative in linear media, and apply these skills in nonlinear and experimental forms. Students work both individually and collaboratively to develop projects that explore creative storytelling.

DGM 6125. Time-Based Media. 4 Hours.
Introduces the creative potential of time-based media—data that changes with respect to time. Explores concepts of sequencing, transformation, and motion through time and space. Offers students an opportunity to explore the potential of video, 2D, animation, motion graphics, and sound design through hands-on assignments.

DGM 6140. Sound Design. 4 Hours.
Explores the history, theory, and practice of sound design, the creation of aural environments, special effects, dialogue, and music for a variety of traditional and digital media, including film, TV/video, animation, theatre, radio, interactive games, and the Internet. Films such as The Matrix, Citizen Kane, and Star Wars serve as the basis for developing a core knowledge of sound design concepts, particularly the development of critical listening skills. Topics cover "spotting," digital audio editing and recording, sample libraries, aesthetics of design, music composition, script interpretation, critical listening, professional collaboration, sound and music technology, digital audio production, and production organization. Offers students an opportunity to master core skills, enabling them to communicate effectively with directors, producers, and/or creative artists in the media and entertainment industries.

DGM 6145. Information Technology and Creative Practice. 4 Hours.
Explores interdisciplinary methodologies that promote creativity and stimulate innovative thinking. Information technology (IT) has formed a powerful alliance with art and design to establish the existing new domain of information technology and creative practices (ITCP). The result is an astonishing variety of significant cultural and economic forms ranging from innovative product designs to interactive art installations. Uses case studies and emphasizes the design, planning, and implementation of innovative prototypes.

DGM 6168. Usability and Human Interaction. 4 Hours.
Surveys the theory and practice of human-computer interaction and the development of user interfaces. Through both analysis and design projects, students have an opportunity to learn cutting-edge approaches to usability research and evaluation, testing methods, and how to design systems that meet end-user needs. Topics covered include behavioral and cognitive foundations of interaction design, principles of good design for interaction, basic user research techniques, and the process of user-centered design.

DGM 6217. Typography for Interactivity. 4 Hours.
Explores the basic principles of typographic design, particularly as applied to screen-based media. Topics include screen legibility and resolution, hierarchy and scale, and typographic form and style.

DGM 6230. Digital Media Entrepreneurship. 4 Hours.
Focuses on the personal characteristics necessary to become a successful entrepreneur, as well as on the processes of evaluating an idea, assessing the market, and implementing a new venture, whether inside an organization or as an independent startup. Teaching methods include case study, guest speakers with entrepreneurial experience, lectures, and team projects that develop feasible business plans. Offers students an opportunity to evaluate their potential as entrepreneurs by learning how to identify and evaluate business opportunities, develop a business concept and marketing plan, assess and obtain the required resources, manage the growth of new ventures, and plan for exit strategies.

DGM 6268. Usable Design for Mobile Digital Media. 4 Hours.
Offers students an opportunity to apply the user-centered, human-computer interaction (HCI) skills covered in DGM 6168 to mobile digital media experiences such as game, entertainment, and social media applications. Considers digital media design, aesthetics, and user behavior in mobile-based environments in the creation of a satisfying and engaging experience. Offers students an opportunity to understand best design practices on a mobile platform by applying HCI methods such as iterative design and the evaluative methods of heuristic evaluation and play testing.

DGM 6279. Project Management for Digital Media. 4 Hours.
Introduces the project management life cycle for technology-based products and applications. Beginning with project initiation and assembling a team, offers students an opportunity to apply project management principles to all aspects of planning and managing a project, including scheduling and budgeting. Major topics include managing a team, including setting goals for creatives; managing assets; documentation; deadlines and client expectations; and balancing continuous improvement and rapid prototyping against the need to manage the scope of work.
DGM 6280. Managing for Digital Media. 4 Hours.
Surveys evolving best practices in creative industry management. Begins with the recognition that managing in an environment of innovation and creative media requires a radical rethinking of traditional managerial paradigms. Agile response to technological change requires strategic alternatives in company goals, priorities, and direction. Intellectual content and creativity are difficult to value within classic financial models. New devices and social networks demand responsive action in internal and external communications. Correctly valuing the performance of highly creative people can be key in maintaining or gaining a leadership position. Uses case studies, presentations, and team-based analysis to examine these challenges and discuss effective responses.

DGM 6285. Interactive Marketing Fundamentals. 4 Hours.
Introduces the exploration of messaging in current and evolving media outlets, the digital marketing mix, the growing promise of mobility, and the possibilities and pitfalls of marketing in social media. Marketing has been deeply challenged by the move from traditional to digital channels, as print and TV give way to Web sites and mobile devices as primary centers of information and entertainment. Explores Web analytics, in particular search engine marketing (SEM) and search engine optimization (SEO).

DGM 6290. Social Media and Brand Strategy Implementation. 4 Hours.
Offers students an opportunity to develop the context for working with marketing professionals to implement strategy in a variety of social media, from blogs to social networking sites, and from game worlds to content communities. Social media environments have become a prime target for product and personal marketing, advertising, and supporting a brand image. But their differences from passive media and even standard websites have made it more difficult to apply traditional thinking to these digital media channels. Utilizes lectures, research, projects, and case studies.

DGM 6300. Digital Capture and Output. 4 Hours.
Introduces still digital imaging, emphasizing image optimization, image editing, and image preparation for screen-based display using software such as Adobe Lightroom and Photoshop. Topics include digital camera settings and exposure methodology, file types, color modes and color management, image correction, layer and channel tools, and digital work flow. Experience with an SLR camera is strongly recommended.

DGM 6302. Work Flow in Digital Imaging. 4 Hours.
Offers students an opportunity to explore alternative outcomes in image processing and to work with high-end image capture and RAW camera files to produce large-format and high-resolution prints. Seeks to improve the quality and efficiency of the student’s workflow process. This is an intermediate-level course.

DGM 6305. Color Management in Still Digital Imaging. 4 Hours.
Demonstrates and utilizes ICC profiles, monitor calibration, and color management of digital files for different output media and purposes. Explores optimization for Web-based applications and proofing and a variety of color spaces. DGM 6500 or prior image-editing experience recommended.

DGM 6307. Creative Approaches to Still Digital Imaging. 4 Hours.
Explores purely creative approaches to the still digital image. Topics include collaging, appropriating, and legal issues; assembling; and alternative modes of working digitally for final print-based outputs and other high-end fine-art output. Explores longer-term projects and portfolio preparation.

DGM 6308. Intermediate Programming for Digital Media. 4 Hours.
Offers students an opportunity to extend the basic proficiency in scripting languages gained in DGM 6108 to more sophisticated programming tasks using an industry-standard scripting language such as JavaScript. Covers the use of arrays and objects to structure data and apply object-oriented and event-driven programming principles to create sophisticated interactivity.

DGM 6317. Screen-Based Publication Design. 4 Hours.
Introduces the theory and practice of designing books, magazines, and interactive hybrid narratives for touch screens. Offers students an opportunity to become familiar with grids, style sheets and templates, and output to a variety of e-publishing tools as they explore the differences in designing content for the Web, tablets, and smartphones.

DGM 6322. Advanced Digital Storytelling. 4 Hours.
Builds on concepts introduced in DGM 6122. Explores the ideation and production of more complex, nonlinear interactive narratives. Working intensively in a team setting, offers students an opportunity to explore ways to further integrate a variety of narrative elements into immersive experiences.

DGM 6400. Game Design Fundamentals. 4 Hours.
Provides the foundation for all of the other courses in the graduate specialization and/or certificate in game design. Offers students an opportunity to learn the basic principles of game design through the creation of board and card games, and through video-game prototyping. Also offers an opportunity to develop skills, including graphic and written communication, rules logic, group dynamics, and basic programming logic.

DGM 6405. Game Development. 4 Hours.
Introduces video game programming using a game engine. Building on their work from DGM 6400, students have an opportunity to create single-player computer games using industry-standard scripting languages. Projects focus on sound design, two-dimensional design and animation, or three-dimensional design and animation. Students can develop projects as individuals or as part of a team.

DGM 6408. Game Design Algorithms and Data Structures. 4 Hours.
Offers an overview of advanced programming techniques used in the creation of sophisticated digital experiences. Offers students an opportunity to extend the programming knowledge covered in DGM 6308 and DGM 6405. Topics include physics, artificial intelligence, and other forms of game simulation.

DGM 6410. Game Design Technology Lab. 4 Hours.
Offers students an opportunity to explore recent technological advances in game design, including networked multiplayer gaming, 3D gaming, and alternative user interfaces such as cameras and motion/location-sensing devices. Student teams are encouraged to round out their game-design portfolios by developing a sophisticated videogame demo that focuses on a specific theme and technology.

DGM 6430. Screenwriting: Linear and Interactive. 4 Hours.
Introduces and builds on basic elements of digital storytelling. Offers students an opportunity to develop their creative writing skills by developing a screenplay for either a film/video production or an interactive/immersive project. Emphasizes dialogue, dynamic role-playing, story generation, and character development for actors and animated characters. Requires proficiency in English or a TOEFL writing score of 27 or above.
DGM 6435. Digital Video Production. 4 Hours.
Using digital video cameras, students are introduced to field production skills and basic content editing. Students are encouraged to implement and experiment with ideas developed in DGM 6122 as they complete short videos. Through hands-on practice and discussion, as well as the viewing of classic documentary and fiction film/video examples, students have an opportunity to further explore composition of the frame and meanings produced from inter-shot and sequence relationships.

DGM 6440. Editing in the Digital Studio. 4 Hours.
Uses virtual studio spaces to introduce and develop student comfort with non-linear digital editing. Offers students an opportunity to understand the basic principles of composition, pacing, titling, timecodes and video effects. Working with their own material, existing video clips, animations, still images and audio feeds, students are encouraged to experiment with different styles, methods, and output to gain a comprehensive understanding of the medium. DGM 6506 or prior experience with digital video editing is strongly recommended.

DGM 6450. Animation Basics. 4 Hours.
Explores the creative potential of animation. Exposes students to animation processes and techniques through lectures, demonstrations, and hands-on assignments. Provides a historical survey of animation art. Emphasizes using the computer to creatively develop concepts while learning the fundamental skills of constructing images and forms. Students collaborate on projects during the first half of the course and work individually on final projects.

DGM 6451. Web Development. 4 Hours.
Focuses on intermediate to advanced concepts and techniques for development of professional Web environments. Offers students an opportunity to explore different development strategies, including client-side interactions using AJAX libraries (such as JavaScript, PHP, and MySQL) compared with client/server methods, webpage presentation layer vs. interactive layer, and the use of WYSIWYG (what you see is what you get) tools vs. plain-text coding.

DGM 6452. Convergence Creation. 4 Hours.
Explores emerging and converging distribution models for time-based digital content through hands-on projects. Focuses on mobile video, mobile audio/podcasts, blogging, and Flash-based handheld content. Examines core questions, such as how to develop compelling content for these different delivery platforms, how to develop content that translates across these platforms, and what the user/audience's expectations are for these different types of narratives. Projects are supplemented by contemporary readings. DGM 6501 or prior website-creation experience recommended.

DGM 6456. Media Content Delivery. 4 Hours.
Covers a variety of postproduction delivery issues, including video and audio CODECs from a variety of media sources and versions, streaming video, content protection, and video database management. How effectively a media specialist handles digital content makes all the difference in the success of a media-rich website.

DGM 6461. Interactive Information Design 1. 4 Hours.
Focuses on the fundamental principles of interactive design to develop meaningful interactive experiences. Offers students an opportunity to develop skills in structuring and organizing information, recognizing and establishing content relationships, and building usable navigation. Explores a variety of tools and technologies to deliver varied media material for screen-based use.

DGM 6463. Interactive Information Design 2. 4 Hours.
Builds on the content and explorations of DGM 6461. Explores complex information organization and delivery problems while seeking to advance the students' experience with interactive design and programming environments.

DGM 6471. Designing Infographics. 4 Hours.
Explores a variety of methods that help to translate raw data into accessible visual presentations that can inform, clarify, educate, and persuade. A powerful aspect of Internet technologies is how readily they provide access to information. However, that information often resides in opaque technical formats, making it hard to understand and disseminate.

DGM 6500. Working with Digital Images. 2 Hours.
Introduces the basics of digital capture and output. Covers capturing still digital images, basic image manipulation in Adobe Photoshop, and file and color management for a variety of output types. Provides background and context needed for project-based courses in digital photography, such as digital capture and output.

DGM 6501. Web Creation Boot Camp. 2 Hours.
Offers an intensive workshop covering basic web design technology, including webpage structure, critical markup languages (xHTML and CSS), basic rules for image preparation, and site development and management with Adobe Dreamweaver, a professional visual page-design tool. Offers students an opportunity to gain the basic competency necessary to build an attractive, effective, static portfolio site.

DGM 6502. Working with Sound. 2 Hours.
Introduces digital audio concepts and techniques for Web and interactivity. Covers digital recording and editing and simple signal processing. Offers students an opportunity to learn the basics of generating sound files in formats appropriate for Web pages and Flash files.

DGM 6503. Flash Intensive. 2 Hours.
Provides instruction in the Macromedia Flash development environment. Includes creating original animated material, importing external media resources, and basic use of interactive tools.

DGM 6504. ActionScript (Intensive). 2 Hours.
Introduces more advanced programming concepts, including loops, arrays, object-oriented programming, and ActionScript 2.0 syntax. This course is suitable for beginning programmers with some Flash animation experience (such as that provided in DGM 6503).

DGM 6505. Modeling and Rendering (Intensive). 2 Hours.
Concentrates on the basics of computer modeling and rendering techniques using Autodesk's Maya 3D animation program. It is highly recommended for any student interested in animation but with no prior experience in professional three-dimensional content creation. It can be taken concurrently with DGM 6450 or as a precursor to it.

DGM 6506. Introduction to Digital Video. 2 Hours.
Uses industry-standard software to introduce editing and compression techniques critical for effective participation in digital video production and editing courses. Offers students an opportunity to become comfortable editing a short video for content, preparing it for posting on the Web, and/or including it in an interactive media project.

DGM 6507. Illustrator Intensive. 2 Hours.
Focuses on vector-based illustration, the basis for clean-edged, professional illustrations in a variety of media. Illustrator is the premier software for producing vector art. Offers students an opportunity to obtain the tools and techniques necessary to master the creation of vector-based, scalable artwork and typography for digital media applications.
DGM 6508. Game Development Intensive. 4 Hours.
Offers students an opportunity to apply the experience gained in DGM 6108 to programming for game development. Game engines provide quick-start platforms and industry-standard solutions for developing video games. The Unity 3D game engine is used for multiformat game development and is also a rapid prototyping tool for the Wii, PlayStation, and iOS devices. Begins at the introductory Unity level.

DGM 6509. Integrated Suite Workshop. 2 Hours.
Introduces cross-application interaction for media design and development in an intensive workshop format. Software tools are now designed to have many functions interact and overlap under one connected umbrella. Understanding the basics of these tools to work with them efficiently can be key to the creation of effective digital media.

DGM 6510. 3-D Modeling. 4 Hours.
Introduces the fundamentals of three-dimensional computer animation. Class lectures and demonstrations are followed by substantial hands-on exploration. Offers students an opportunity to gain fundamental skills for polygon modeling and UV surfing. Projects progress from creating simple geometric objects to realistic organic characters.

DGM 6511. Web Creation Bootcamp 2. 2 Hours.
Offers an intensive workshop designed to build on the foundations of web creation built in DGM 6501. Offers students an opportunity to work intensively with web software and web technologies such as xHTML, PHP, and JavaScript to design websites with layered imagery, basic interactivity, and more complex layouts.

DGM 6513. Single-Lens Reflex Camera Workshop. 2 Hours.
Offers students an opportunity to become familiar with the techniques and terminology that set professional-quality creative work apart from point-and-shoot. In still or motion photography, professional results require digital single-lens reflex (SLR) mastery. This workshop covers exposure, focus, flash, white balance, resolution, file formats, histograms, and basic SLR video, as well as theories of light and color crucial to understanding SLR camera settings and choices. Students have in-class access to cameras, but SLR camera ownership is strongly recommended to get the most out of this course.

DGM 6514. HTML5 Workshop. 2 Hours.
Offers students an opportunity to become familiar with HTML5 syntax, structural markup, and its connections to languages such as JavaScript, jQuery, and CSS. HTML5 is a significant technology for creating complex and rich interactions in games, mobile environments, and websites. It provides a rich alternative for Flash-enabled development.

DGM 6515. Introduction to After Effects. 2 Hours.
Introduces the creation and manipulation of motion graphics and time-based visual effects using the After Effects environment. Offers students an opportunity to acquire the basic knowledge required for DGM 6540.

DGM 6518. Game Programming Intensive 1. 2 Hours.
Explores an advanced game development environment in a workshop setting. Offers students an opportunity to concentrate deeply on an industry-standard development tool to expand their game design and interactive development options to new devices and environments.

DGM 6519. Game Programming Intensive 2. 2 Hours.
Builds on the development methods and environment introduced in DGM 6518. Offers students an opportunity to complete their mastery of an advanced game development environment.

DGM 6520. Lighting for the Camera. 4 Hours.
Emphasizes essential lighting theory and techniques. Understanding lighting is the key to a professional photographic or video shoot. Topics include lighting equipment; lighting sources and arrangement; color temperature; lighting for indoor, outdoor, and location shooting; as well as the editorial use of lighting to create tone and communicate narrative. Offers students an opportunity to create projects in different lighting environments and for different purposes to experience a wide range of lighting problems and solutions.

DGM 6521. Web Creation for Content Management Systems. 2 Hours.
Expands on the foundations of web creation with an emphasis on developing for content management systems such as WordPress. Offers students an opportunity to work intensively to use web technologies to build on these open-source software models’ core capabilities. Requires basic knowledge of cascading style sheets (CSS) and beginner knowledge of PHP.

DGM 6525. Research Methods for Global User Experiences. 4 Hours.
Focuses on a structured approach to user research methodology for the design of interactive applications. Emphasizes user research and interpretation for products and services that will be marketed to individuals spanning cultures with radically different customs and communication. Applies field methods such as interviewing, observation, and questionnaire design through the lens of intercultural psychology and communication patterns, cultural neutrality, and culture-centric design.

DGM 6530. Character Animation. 4 Hours.
Provides an in-depth investigation of 3-D animation. Offers students an opportunity to continue development of realistic characters created in DGM 6510 and to develop intermediate skills for weight mapping and rigging, as well as midlevel proficiency with animation editors. Projects focus on creating animations that emphasize realistic deformation and movement.

DGM 6531. Rigging Workshop. 2 Hours.
Introduces fundamental rigging principles and techniques. Convincing animation of 3D characters and objects requires rigging—the setup and scripting of a range of structural controls. Offers students an opportunity to explore character preparation and motion control methods, including inverse and forward kinematics, and complete an intuitive rig for a character developed in DGM 6530. This is an intensive workshop.

DGM 6532. Rigging Workshop 2. 2 Hours.
Offers an intensive workshop that continues and expands on the skills in structural controls begun in DGM 6531. Offers students an opportunity to apply a variety of realistic motion effects to character and environmental elements, including realistic modeling of fluids, fire and smoke, explosions, fur, hair, cloth, and particles.

DGM 6535. Rigging Principles and Techniques. 4 Hours.
Offers animation students the opportunity to apply realistic motion effects to a complete, intuitive character rig. Convincing animation of 3D characters and objects requires rigging—the setup and scripting of a range of structural controls. Explores character preparation and motion control; kinematics; realistic motion effects, including textures such as fur and hair; and environmental elements, such as fluids, fire, and explosions.

DGM 6540. Compositing. 4 Hours.
Investigates compositing and special FX techniques. Student teams have an opportunity to utilize green screen studio to capture live-action video footage that is seamlessly combined with computer-generated environments and characters that they create. Offers students an opportunity to develop original narratives that are suitable for exploring course objectives.
DGM 6545. Documentary and Nonfiction Production. 4 Hours.
Offers students interested in documentary filmmaking an opportunity to learn the research, story structure, and production skills necessary to bring a nonfiction video narrative from preproduction through postproduction and refine their work from rough to final cut. Using scenes and examples from notable documentaries to inspire and illustrate technique, students research topics, find subjects, conduct interviews, practice techniques of cinema verité and B-roll, and work with archival footage to complete one major nonfiction project.

DGM 6550. Search Engine Optimization: Strategy and Implementation. 4 Hours.
Connects the search engine optimization (SEO) process to marketing and social media strategy by introducing students to the concepts behind consumer search behavior, search engine algorithms, and SEO analysis using tools such as Google Analytics. A website’s frequency ranking in a content search critically impacts its visibility and, ultimately, viability. Seeks to provide foundational guidance on topics such as organic search tactics, website optimization, and keyword research and selection.

DGM 6880. Portfolio. 2 Hours.
Offers an intensive seminar designed to help students develop a digitally based portfolio to meet professional standards in their area. Offers students an opportunity to examine existing work, to consider new projects, and to learn to present and package their process and ideas effectively. May be repeated once.

DGM 6882. Animation Reel. 1-4 Hours.
Offers students an opportunity to develop a portfolio reel that may be suitable for submission to potential employers. Emphasizes sound integration and efficient use of polygonal structures. Focuses on student-generated projects; weekly goals are determined by aesthetic and technical demands of student objectives.

DGM 6890. Thesis Proposal Development. 2 Hours.
Offers students an opportunity to understand thesis goals and process, with a view toward developing strong project ideas, an effective and realistic development path, and a well-written preliminary proposal.

DGM 6895. Digital Portfolio Capstone. 4 Hours.
Offers an intensive, directed project that seeks to help students design and develop a digitally based portfolio. Offers students an opportunity to research standards and expectations in their field, examine their existing work critically, and present and package their process and ideas effectively. May be taken concurrently with DGM 7990. Requires prior completion of 37 quarter hours in the digital media program with concentration in interactive design or permission of instructor.

DGM 6943. Integrative Experiential Learning. 3,4 Hours.
Offers students an opportunity to apply the principles, tools, and processes of digital medial to real-world problems in profit and nonprofit organizations through a customized variety of experiential options. These opportunities may range from participation in the co-operative education program to Experiential Network (XN) projects.

DGM 6961. Internship. 1-4 Hours.
Provides students with an opportunity for internship work. May be repeated without limit.

DGM 6962. Elective. 1-4 Hours.
Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

DGM 6964. Co-op. 0 Hours.
Provides eligible students with an opportunity for work experience.

DGM 6966. Practicum. 1-4 Hours.
Provides eligible students with an opportunity for practical experience.