

DIGITAL WORLDS INSTITUTE

Not all courses are offered every semester. Refer to the schedule of courses for each term's specific offerings.

More Info (<https://one.ufl.edu/soc/>)

Unless otherwise indicated in the course description, all courses at the University of Florida are taught in English, with the exception of specific foreign language courses.

Department Information

The Digital Worlds Institute is on the cutting edge of digital arts and sciences — both in research initiatives and innovative approach to education. The institute is a recognized leader in combining arts, communications, engineering and science, with a focus on advanced media systems.

Website (<https://digitalworlds.ufl.edu/>)

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Map (<http://campusmap.ufl.edu/#/index/0597>)

Curriculum

- Digital Arts and Sciences Minor
- Digital Arts and Sciences Minor UF Online
- Digital Arts and Sciences UF Online
- Digital Arts and Sciences | Bachelor of Arts

Courses

DIG 1627 AI & Art/Science/Fiction 3 Credits

Grading Scheme: Letter Grade

Artificial intelligence: What is it? What is it used for? What is at stake? How can investigating AI from the perspectives of art, science, and fiction help to uncover the history, present, future, and implications of AI? Each week we will explore AI core concepts from three perspectives: art, science, and fiction. By the end of this course, you will be able to separate the facts from the hype and learn how to leverage fiction to prototype the future. This class is open to any student regardless of technical or creative background. It has an interdisciplinary approach to the history and practice of AI, through an integrated humanities perspective. We look at prose, poetry, fine art, film, music, society, law, policy, and creative coding arts from the Western canon and beyond to understand the impact and innovation in the diverse fields of artificial intelligence. We will go over key concepts in AI and creative applications of machine learning technologies.

Attributes: Quest 1, General Education - Humanities, Satisfies 2000 Words of Writing Requirement

DIG 1814 Life Well-Played 3 Credits

Grading Scheme: Letter Grade

Students will explore the ethical, aesthetic, and political dimensions of life through the lens of play and games. It examines what it means to live well, using insights from philosophy, sociology, art history, and media studies, including discussions on video games.

Attributes: Quest 1, Satisfies 4000 Words of Writing Requirement

DIG 2005 Introduction to Digital Technologies 3 Credits

Grading Scheme: Letter Grade

Comprehensive introduction to fundamental digital technologies and computing concepts; covers history of computing, binary arithmetic, Boolean logic, file formats, computer architecture, databases, networking, security/privacy, and ethics.

DIG 2021 Foundations of Digital Culture 3 Credits

Grading Scheme: Letter Grade

Interdisciplinary overview of the technological and cultural developments that continue to shape the modern world. Student research covers topics including telecommunications, digital and analog technologies, video games, computer-generated entertainment and the rise of social media. (WR)

Attributes: Satisfies 4000 Words of Writing Requirement

DIG 2121 Principles of Digital Visualization 3 Credits

Grading Scheme: Letter Grade

Develops appreciation and basic fluency in the application of visual and design literacy into emergent forms of digital media. Historical and theoretical perspectives inform hands-on learning across topics including pre-visualization and storyboarding in static and time-based media, and the critical analysis of contemporary and iconic visual storytelling.

DIG 2430 Digital Storyboarding 3 Credits**Grading Scheme:** Letter Grade

Storyboards, essential to production pipelines in the digital media field, help visual storytellers plan out and organize the sequence of events in a story. Explore various methodologies and fundamental techniques for effectively translating a written script or screenplay to the digital screen via the storyboarding process.

DIG 2632 Introduction to Game Design & Development 3 Credits**Grading Scheme:** Letter Grade

Introduces designing video games with simple drag-and-drop programming and basic asset creation. Covers the essential principles of design and development needed to create effective arcade-style games. Provides a solid foundation in the technical skills needed to create multi-platform games.

DIG 2930 Special Topics: Foundations of Digital Culture 3 Credits**Grading Scheme:** Letter Grade

In-depth examination of the technological and cultural underpinnings that shape current electronic media including video games, the internet, computer-animated movies, and virtual reality.

DIG 2931C Special Topics in Digital Media 1-3 Credits**Grading Scheme:** Letter Grade

Special topics course to address contemporary digital arts and sciences issues. This flexible pedagogic mechanism provides DAS a dimension of vitality that compliments theory-based offerings with an up-to-the-minute examination of emergent cultural and technological events and developments.

Prerequisite: instructor permission.**DIG 3097 Entrepreneurship in New Media 3 Credits****Grading Scheme:** Letter Grade

Using an interdisciplinary approach, acquire fluency in techniques of idea generation, innovation, internet startups, video games, mobile applications, promotion and branding, company boot strapping, and business plan creation. Focuses on developing creative and business skills applicable to new media startups.

Prerequisite: Digital Arts and Sciences BA major.**DIG 3124 Principles of Interaction & Usability 3 Credits****Grading Scheme:** Letter Grade

Introduces the principles of interaction and usability for digital interfaces and systems. Focuses on identifying end users' needs and providing tailored solutions through interaction design, cognitive and emotional aspects of digital interfaces, visual aesthetics, data gathering, prototyping, and evaluation.

Prerequisite: Digital Arts and Sciences major.**DIG 3305C 3D Digital Animation Techniques 3 Credits****Grading Scheme:** Letter Grade

Introduces the foundations of creating 3D digital environments and animations; implement industry-standard animation principles and practices, including reference-centric animation and polygonal modeling.

Prerequisite: DAR major and DIG 3313C with minimum grade of C..**DIG 3313C 2D Digital Animation Techniques 3 Credits****Grading Scheme:** Letter Grade

Introduces foundational knowledge of animation in a 2D space; learn how to design and implement character, abstract, and shape animation.

Prerequisite: Digital Arts and Sciences BA major.**DIG 3329 3D Modeling and Texturing 3 Credits****Grading Scheme:** Letter Grade

This course covers industry-standard polygon and curve-based modeling tools for creating efficient 3D models and stylistic textures. Additionally, students will master key concepts and become fluent in terminology essential to 3D modeling.

Prerequisite: Digital Arts and Sciences major and DIG 3305C with minimum grade of C.**DIG 3433 Digital Storytelling 3 Credits****Grading Scheme:** Letter Grade

Develops a framework for integrating participation and storytelling as the foundation of interactivity. Explores how story is incorporated into contemporary interactive platforms such as games and other digital media, including virtual worlds, video blogs and social networks.

Prerequisite: Digital Arts and Sciences BA major with junior standing or higher.**DIG 3521 Project Methodologies 3 Credits****Grading Scheme:** Letter Grade

Introduces skills for successfully planning and managing digital projects. Focuses on the production of digital games, animation, and digital audio/video to learn about management life cycle, project parameters, matrix management challenges, effective project management tools and techniques, interpersonal skills, and the role of a project manager.

Prerequisite: Digital Arts and Sciences major.

DIG 3525C DAS Design and Production Studio 1 3 Credits**Grading Scheme:** Letter Grade

Provides digital imaging and design foundations in visualization. Also offers an introduction to the foundation of interface tools in industry standard digital imaging software.

Prerequisite: Digital Arts and Sciences BA major.**DIG 3526C DAS Design and Production Studio 2 3 Credits****Grading Scheme:** Letter Grade

Working within an interdisciplinary digital arts and sciences (DAS) design and production studio environment, students will focus on network and Internet-based technologies, delivery systems and content generation. Students will participate in the creation of two major collaborative group projects or one major semester-long project.

Prerequisite: Digital Arts and Sciences BA major and DIG 3525C with minimum grade of C.**DIG 3588C Digital Portfolio 1-3 Credits****Grading Scheme:** Letter Grade

Provides technical and design skills for the creation of a digital portfolio with interactive media suitable for distribution, including DVD and a portfolio website. Also covers techniques for using and linking social media, digital branding and personal marketing.

Prerequisite: Digital Arts and Sciences BA major of junior standing or higher.**DIG 3623 Playable Patterns: Science Storytelling with AI & Games 3 Credits****Grading Scheme:** Letter Grade

From random number generators to flocking algorithms, designing the automated parts of a game involves finding elegant, concise, and believable ways of modeling the real world. A look to nature and the history of computational poetics to learn to design machine intelligence that inspires audiences interacting with new stories.

Prerequisite: DAR major.**DIG 3691 Blockchain Innovation in Digital Arts and Sciences 3 Credits****Grading Scheme:** Letter Grade

Comprehensive survey of relevant topics in blockchain and its impact on digital arts and sciences; provides an overview of the technology behind blockchain and explores current and potential real-world applications in arts, digital entrepreneurship, and creativity.

Prerequisite: Digital Arts and Sciences BA major with junior standing or higher.**DIG 3713 Game Content Production 1 3 Credits****Grading Scheme:** Letter Grade

Provides both theoretical and practical knowledge and essential technical skills for the conceptualization and digital visualization of video game assets. Covers the principles and practical applications of industry-standard software suites. Emphasizes developing strong foundational skills, compelling conceptual ideas, and self-motivated problem solving.

Prerequisite: Digital Arts and Sciences BA major.**DIG 3715 Game Content Production 2 3 Credits****Grading Scheme:** Letter Grade

Elaborates on concepts, processes, and technical practices introduced in DIG 3713C; use game design fundamentals to craft effective digital games. Detailed examination of conceptual techniques in game design and their use in DAS design practice; comparative introduction of frameworks for game design; technical components of 2D and 3D game design.

Prerequisite: Digital Arts and Sciences major and DIG 3713 with minimum grade of C.**DIG 3873 Game Systems Development 1 3 Credits****Grading Scheme:** Letter Grade

This course will introduce the fundamental principles of game development and programming language. Students will become familiar with input output, variables, arithmetic operations, if-else conditional statement and their use in game development. Students will also learn about the basic understanding of object-oriented programming (OOP) within the industry.

Prerequisite: Digital Arts and Sciences BA major.**DIG 3878 Game Systems Development 2 3 Credits****Grading Scheme:** Letter Grade

This course will cover fundamental principles of game engine programming such as basic collision detection, input detection, instantiate, destroy game object, and others. The student will also learn how to use game engines to develop various applications such as personal computer (PC) and mobile games, augmented/virtual reality projects, and others.

Prerequisite: DIG 3873 with minimum grade of C.**DIG 4154 Writing for Interactive Media 3 Credits****Grading Scheme:** Letter Grade

Provides in-depth analysis and opportunity to hone writing skills needed in the creation and development of interactive digital media. Students will investigate approaches for generating high-quality writing and the blend between development, planning, technical and creative writing through writing the documents to support a digital media project's development and production.

Prerequisite: Digital Arts and Sciences BA major of senior standing.

DIG 4171C Digital Tools for Arts and Humanities 3 Credits**Grading Scheme:** Letter Grade

Study of digital applications, games, tools, and social networks to enhance research in the arts and humanities; examines and expands on current theoretical discussions, applications, and methodologies. An interdisciplinary group project embraces collaborative research and offers hands-on experience with digital tools.

Prerequisite: Junior level or higher**DIG 4184C Motion Design 3 Credits****Grading Scheme:** Letter Grade

Introduces motion graphics fundamentals, design principles, and techniques, including visual rhythm, kinetic typography, multiplanar effects, and established and emerging industry techniques. Also explores the use of motion graphics in live-action video, including but not limited to commercial, broadcast, corporate, training, tradeshow, main title, and social media content.

Prerequisite: DIG3526C and DIG3305C with minimum grades of C and a Digital Arts and Sciences major.**DIG 4185 Experience Design for Social Engagement 3 Credits****Grading Scheme:** Letter Grade

Explore user experience (UX) design and user engagement, and address social challenges (e.g. sustainability, accessibility, minority concerns) in individual and group projects. Identify target user needs, develop solutions, create a prototype application, and undertake user testing by applying UX theories, experience design history, and user-centered design principles.

Prerequisite: DIG 3124 with a minimum grade of C or better a Digital Arts and Sciences major.**DIG 4255C Audio Design for Digital Production 3 Credits****Grading Scheme:** Letter Grade

Professional techniques for the creation of audio content for variety of applications in the digital arts and sciences. Software tools for conversion, storing, processing and retrieval of sound in a variety of digital formats. Fundamentals of loop-based audio design, sampling and work with an industry standard software with linear and interactive digital media.

Prerequisite: Digital Arts and Sciences BA major of senior standing.**DIG 4283 Music and Sound Design for Digital Media 3 Credits****Grading Scheme:** Letter Grade

Investigates techniques, tools and current research in music and sound design for digital media for DAR and DAS non-music majors.

DIG 4306C Advanced Digital Animation Techniques 3 Credits**Grading Scheme:** Letter Grade

Practical principles and techniques of 3D software environments for animation. Includes triangular mesh design and editing, splines (NURBS), shading techniques and lighting, different camera projection models, rendering techniques, and efficient use of GPU for photo realistic real-time 3D animation.

Prerequisite: (Digital Arts and Sciences BA major and DIG 3305C with minimum grade of C) or instructor permission.**DIG 4354 3D Character Animation 3 Credits****Grading Scheme:** Letter Grade

Techniques for 3D character animations. Practice character development, pipeline management, procedural framework simulation, and basic rigging alongside studies of motion picture animation. Master industry-standard tools to animate basic 3D objects, 3D bipedal motion, and key-framing.

Prerequisite: DAR major and DIG 4306C with minimum grade of C.**DIG 4361C Advanced 2D Digital Animation Techniques 3 Credits****Grading Scheme:** Letter Grade

Develop advanced industry-standard practices in digital 2D animation. Within a collaborative environment, create a 30 second film in order to learn the production pipeline, time management, and task allocation while demonstrating advanced animation techniques.

Prerequisite: DIG 3313C with minimum grade of C and Digital Arts and Sciences B.A. major.**DIG 4527C Game Design and Production 3 Credits****Grading Scheme:** Letter Grade

Interdisciplinary approach to game design and production. Emphasizes rapid prototyping, agile design, collaboration, and project management in a relatively short development cycle. Work on idea pitches, write concept proposals, and work to develop a video game.

Prerequisite: Digital Arts and Sciences major and (DIG 3715 and DIG 3878 with minimum grades of C).**DIG 4540C Production of Immersive Environments 3 Credits****Grading Scheme:** Letter Grade

Projects cover the foundational knowledge of immersive technologies such as AR and VR; provides hands-on experience developing a fully functioning immersive experience prototype.

Prerequisite: DIG 3305C and DIG 3878 with minimum grades of C and Digital Arts and Sciences B.A. major with junior standing or higher.**DIG 4552 Advanced Design & Production Studio 3 Credits****Grading Scheme:** Letter Grade

Course provides students with both conceptual understanding and practical applications of the evolving ecosystem of time-based digital media creation and production tools and techniques. Work incorporates both physical and virtual studio environments.

Prerequisite: Digital Arts and Sciences major and DIG 3526C with minimum grade of C

DIG 4634 Wearable and Mobile App Development 3 Credits**Grading Scheme:** Letter Grade

Examines software development protocols for wearable and mobile electronics such as head-mounted displays, watches, and cellphones. Studies several embedded input/output interfaces, including position and orientation sensors, hand trackers, holographic, and stereoscopic displays. Materials are practiced by developing prototype software applications for such devices.

Prerequisite: DIG 3878 with minimum grade of C.**DIG 4841 Senior Project Research 3 Credits****Grading Scheme:** Letter Grade

Focuses on identifying effective pre-production research techniques, as well as goal-setting and problem-solving strategies, and integrating them into a coherent project-management practice. Apply understanding of these principles to formulate an appropriate and successful DAS senior project proposal.

Prerequisite: DAR major and senior standing.**DIG 4905 Independent Study 1-4 Credits****Grading Scheme:** Letter Grade

Independent study of special or individual DIG projects and issues, under faculty supervision.

Prerequisite: consent of faculty member supervising the study.**DIG 4917 Undergraduate Research in DAS 0-3 Credits****Grading Scheme:** S/U

Provides research experience at the intersection of digital arts and sciences. Research assistants work directly with faculty to explore and produce various research in interactive tools and technologies. Accelerate professional development as both a researcher and digital artist.

Prerequisite: Junior level or higher.**DIG 4930 Special Topics in DAS 1-4 Credits****Grading Scheme:** Letter Grade

Special Topics provides upper-level DAS students with a comprehensive study of current/significant topics in the digital arts and sciences. Special Topics allows faculty to offer courses in emergent technologies, theories, and methodologies not already included in the curriculum, and provide students with the knowledge and skills necessary in these areas.

Prerequisite: Digital Arts and Sciences major.**DIG 4932 Colloquium in Digital Arts and Sciences 1 Credit****Grading Scheme:** S/U

Seminars explores current affairs in the field of digital arts and sciences. Research, communicate, and analyze the contemporary trends in digital arts and sciences.

Prerequisite: DAR major and senior standing.**DIG 4940 Internship 1-3 Credits****Grading Scheme:** S/U

Internship encourages reflection on position, company, industry, and experience. After completing the assignments, students should be able to articulate the role internship had in their career development.

Prerequisite: DAR major.**DIG 4942 Undergraduate Course Assistant 0-3 Credits****Grading Scheme:** S/U

Provides hands-on experience teaching digital arts and sciences at the college level. Under the supervision of a faculty member, lab assistants help prepare and discuss course materials, work with students during office hours, and play a critical role in facilitating learning.

Prerequisite: DAR major and junior or higher standing.**DIG 4944C Production Practicum 0-3 Credits****Grading Scheme:** S/U

Production Practicum will provide DAS students hands-on experience producing and executing real-world digital media projects. Students will participate in many production roles, collaborating with peers and clients in a professional studio environment. In the process, students will accelerate their professional development as a producer within the digital arts and sciences.

Prerequisite: Junior level or higher.**DIG 4970 Senior Project in DAS 2-3 Credits****Grading Scheme:** Letter Grade

Successful completion of this capstone experience demonstrates mastery of requisite knowledge, technical acumen, and problem solving skills in the digital arts and sciences. May be either an individual or team-based project.

Prerequisite: senior status enrolled in the BA in DAS program.**HUM 2832C Algorithmic Creativity 3 Credits****Grading Scheme:** Letter Grade

Computational creativity is the application of computer technologies to emulate, study, stimulate and enhance human creativity. Algorithmic creativity is the application of AI methods such as machine learning, natural language processing, computer vision, or generative adversarial networks to produce creative outputs. These outputs can range from text, images, music, or video to complex systems, architectures, or inventions.

HUM 2833 Topics and Perspectives - AI, Art, and Society 3 Credits

Grading Scheme: Letter Grade

Students examine the promises and perils of artificial intelligence through the lens of media studies and critical theory as well as case studies of artists who offer a shadow discourse, subversively using AI and other emerging technology.
