



**NEW JERSEY INSTITUTE OF TECHNOLOGY  
COLLEGE OF ARCHITECTURE AND DESIGN**

### ***SUSTAINABILITY STORY: DIGITAL DESIGN STUDIO***

**COURSES:** DD 464 – Digital Design Studio III (5 credits)  
**PROGRAM:** Digital Design/School of Art + Design  
**LOCATION:** fourth year/spring term (undergraduate)  
**INSTRUCTOR:** Andrzej Zarzycki

**DESCRIPTION:** The design course is a five-credit studio in the final semester of the four year undergraduate program and, as such, is intended to provide students an opportunity to concentrate on particular areas of interest prior to graduation. As a general program, students have been exposed to video and animation, gaming, interactive graphics, aspects of motion picture production, web design, and physical computing. Students are expected to propose their own projects in which they will individually create a narrative-based and/or interactive project focused around the central theme of resilient design and sustainability. Topics suitable for use include (but are not limited to) water management, energy efficiency, pollution, fire prevention and control, recycling, or constructed response to climate change.

**PROJECT:** Create a motion-based visual narrative or interactive project that focuses on resilient design and sustainability. Specific requirements vary based on the specific area of digital concentration. Students may work in the areas of 3D/2D animation, 3D illustration and environmental design, live-action production, branding/identity/print/marketing/advertising for public education, interactive gaming, or HCI/physical computing.

**REQUIREMENTS:** Students working on an animation will be expected to produce a 30 to 40 second HD movie with soundtrack and full post-production processing. Students working on 3D illustration or environment design are expected to create one high quality three-dimensional digital environment. Presentation will include a minimum of 8 high resolution images with at least two different lighting scenarios. All assets must be custom designed. Live action production must result in a 40 to 60 second HD movie with multiple compositing and camera tracking/matching layers. Students who are producing marketing materials must produce a multifaceted marketing campaign ranging from banner ads to be placed on websites, to print advertising, to a video for placement on social media. Projects in this category are most effectively realized via collaboration with a non-profit organization that has a product or service to distribute. Gaming students are expected to produce a fully functional working prototype of the game with basic game mechanics/play, and a number of original assets and textures. As part of the process, students will develop storyboards, game tree, define the target market, and produce a written description with game instruction and play manual. HCI/Physical Computing projects must include both digital and physical components. These may include projects in mobile/ubiquitous computing, augmented reality, and adaptive environments.

**OBJECTIVES:** (1) To formulate a conceptual and artistic position on topics of digital designs relevant to the student concentration area (entertainment, interactive graphics). (2) To understand the pipeline of the digital design production and demonstrate an ability to effectively use it. (3) To develop a sophisticated and complex project that integrates multiple formats of digital media such as modeling, rendering, video editing, interactivity, and graphic design. (4) To link artistic and creative endeavors to topics of broader social, cultural, or intellectual reach in order to use skills learned for the public good.

**REFERENCES:** (1) Online tutorials for Maya and Mudbox are available as are instructional books and manuals in the reference section of the Littman Architecture and Design Library. (2) Cabrera, Cheryl. *An Essential Introduction to Maya Character Rigging* (Focal Press, 2008). (3) Goldfinger, Elliott. *Animal Anatomy for Artists: The Elements of Form* (Oxford University Press, 20014). (4) Gray, Henry. *Anatomy of the Human Body* (Lea and Febiger, 1918). (5) Palamar, Todd. *Maya Studio Projects: Photo Realistic Characters* (Sybex, 2011) (6) Seegmiller, Don. *Digital Character Design and Painting* (Charles River Media Graphics, 2003).