Three-Dimensional Design Courses (Art and Art History) (TDSN)

This is a list of all 3-D design courses. For more information, see Art and Art History.

**TDSN:2210 Introduction to 3D Design** 3 s.h.
Materials, their formal and structural possibilities.
Prerequisites: ARTS:1510 and ARTS:1520. GE: Engineering Be Creative.

**TDSN:2240 Digital Drafting with AutoCAD** 3 s.h.
Basic principles of 2D and 3D computer-aided drafting; use of AutoCAD software to draw plans, elevations, and sections for objects and interior spaces. Prerequisites: CERM:2010 or SCPL:2810 or TDSN:2210 or MTL5:2910. Same as CEE:2240.

**TDSN:2250 Digital Prototyping** 3 s.h.
Basic knowledge and practical technical skills using 3ds Max studio software; experience creating and manipulating basic forms and working with texture, background, light, and camera viewpoints; basic animation. Corequisites: ANIM:2125 or CERM:2010 or DSGN:2500 or DRAW:2310 or INTM:2710 or MTL5:2910 or PHGC:2600 or PNTG:2610 or SCLP:2810 or TDSN:2240.

**TDSN:3200 Product Design** 4 s.h.
How objects are designed and structured; modeling, graphic skills necessary for basic project development. Corequisites: TDSN:2250.

**TDSN:3205 Advanced Robotics** 3 s.h.
Advanced peripheral integration and control, including stepper motors, solar power, audio playback, and live data manipulation through physical sensors; advanced fabrication (e.g., printed circuit boards and wiring harness design); for students with previous experience in robotics and electronics. Prerequisites: SCPL:3840.

**TDSN:3220 Interior Design** 4 s.h.
Relationship of interior space to its architecture, environment, human element; color, materials, furnishings, lighting; projects. Prerequisites: TDSN:2250.

**TDSN:3230 Color for Interior Design** 4 s.h.
Use of color for interior spaces; principles of color theory reviewed and applied to 3D environments; color as a compositional element and psychological tool. Prerequisites: TDSN:2250.

**TDSN:3240 3D Computer-Aided Design** arr.
Three-dimensional computer-aided drafting; use of AutoCAD software. Prerequisites: MTL5:2910 or SCPL:2810 or CERM:2010 or TDSN:2210.

**TDSN:3250 Bicycle Design** 4 s.h.
Drafting software, bicycle design, and history of bicycle from velocipede to mountain bikes; development of bicycle design as new materials, fabrication techniques, and ergonomics were applied; use of BikeCad, a parametric software, to design bicycles and bicycle components. Prerequisites: ARTS:1510 and ARTS:1520. GE: Engineering Be Creative.

**TDSN:3260 Design for Production** 4 s.h.

**TDSN:3280 Forms and Textiles** 4 s.h.
Products and seating design with soft materials; students experiment with diverse soft materials and textile construction techniques to design and make unique functional forms. Prerequisites: TDSN:2210. Corequisites: TDSN:2240 and TDSN:2250.

**TDSN:3285 Fabrication and Design: Hand-Built Bicycle** 4 s.h.
Building a bicycle frame by hand; use of CAD modeling and development of fabrication skills to create a modern-day work of art. Prerequisites: TDSN:2240.

**TDSN:4010 Furniture Design I** 4 s.h.

**TDSN:4020 Furniture Design II** 4 s.h.
Continuation of TDSN:4010; design of virtual environments. Prerequisites: TDSN:4010.

**TDSN:4050 Site Specific Design** 1 s.h.
Art of planning, building, and presenting at real professional design venues; students plan, design, and build an environment to display selected 3D design work at one or two professional design venues. Prerequisites: TDSN:2250. Corequisites: TDSN:3200 or TDSN:3220 or TDSN:3230 or TDSN:3260 or TDSN:3280.

**TDSN:4210 Digital Animation and Visual Art** 3 s.h.
Assimilation of digital animation into realm of traditional fine art mediums; exploration of fundamental skills (storyboarding, rotoscoping, stop motion, motion graphics, 3D animation); Adobe Photoshop, After Effects, and 3ds Max techniques and software that are industry standards in the careers of animators, storyboard artists, roto artists, digital compositors, and motion graphic artists; production of a show reel of student work for group showing and final critique. Prerequisites: ARTS:1510 and ARTS:1520.

**TDSN:4255 Hand-Built Bicycles in the Rockies** 1 s.h.
Building a titanium hand-built bike; use of hand-built fabrication techniques and tools; translation of CAD design into first full-suspension titanium fat bike; aspects of metal technology, concept development; fabrication geometry and design, metal properties and selection, tool selection; brazing and TIG welding, jig setup and use, and mitering; travel to Fort Collins, Colorado to work for one week at Black Sheep Bikes (two-time winner of the North American Hand Built Bike Show). Prerequisites: ARTS:1510 and ARTS:1520.

**TDSN:4260 3D Computer Graphic Art** 3 s.h.
Three-dimensional modeling; emphasis on movement in form and function; advanced modeling techniques in polygonal and NURBS modeling to generate fundamentally sound models used for rapid prototyping, visualization, and animation; Box modeling, NURBS modeling, rigging, materials, bump maps, normal maps, and rendering; fundamental skills of computer graphic artists working in the fields of animation, architectural visualization, video game modeling, industrial design, and engineering design. Prerequisites: TDSN:2250.

**TDSN:4270 Problems in 3D Design: Locative Art Practice** 4 s.h.
How our relationship to Earth has changed with new forms of locating place in it; new forms of representation used to express exploration of that relationship; designing a locative research project; exploration of four major course concepts (geo-annotation, locative inscription, GPS drawing, alternative cartography) using portable, networked, and location-aware computing for mapping relationships. Prerequisites: ARTS:1520 and ARTS:1510.
TDSN:4299 Undergraduate Individual Instruction  
Individual instruction in 3D design for advanced students.

TDSN:6299 Individual Instruction in 3D Design  
Individual instruction in 3D design for advanced students.