DDSN - Drafting Design

DDSN 101. CAD I-A. 2 Credits. (2 Lec) F,S
This course starts with basic software recognition and user interface concepts, introduces basic computer drafting principles and commands, and covers topics related to the business of the Design Drafting field. Students will learn blocks, fields, CAD tips and shortcuts, and learn basic principles of the business of Design Drafting. There is no prerequisite. Typically Taken 4th Semester (Spring).

DDSN 102. CAD I-B. 2 Credits. (2 Lec) F,S
PREREQUISITE: DDSN 101. This course is a follow-up to DDSN 101 CAD I-A: the two courses together, completed successfully, are equivalent to DDSN 118 CAD 1. In this course, students will focus on using AEC objects to create construction documents of designs created by others.

DDSN 112. Professional Practices. 3 Credits. (3 Lec) S
Students in this course will learn how to create a professional looking and effective résumé, understand their strengths and weaknesses, and learn how to properly seek employment in their chosen field. They will present themselves well in interviews and elevate their pitch, and know the basics of setting up their own business, understand the basic principles of the business of the Design Drafting field and learn how to continue to improve in all of these areas.

DDSN 113. Technical Drafting. 3 Credits. (3 Lec) F,S
This course is divided into two parts. The first half of the semester is devoted to hand sketching: orthographic, isometric, and perspective. The second half of the semester is hand drafting with an emphasis on learning the components of residential construction. Traditional drafting tools will be used such as T Squares, triangles, scales, easer shields, and mechanical pencils.

DDSN 114. Introduction to CAD. 3 Credits. (1 Lec, 2 Lab) S
Provides the learner with an understanding of two-dimensional computer-aided drafting. Students explore and create two-dimensional drawings with the aid of AutoCAD software (made by Auto desk). Drawings focus on architecture, mechanical, and civil engineering applications.

DDSN 118. CAD I. 4 Credits. (4 Lec) F,S
PREREQUISITE: DRFT 131 or instructor approval. This course starts with basic software recognition and user interface concepts, introduces basic Computer Drafting principles and commands, navigates CADs steep learning curve, and progresses to Intermediate concepts including 3D Visualization and Drafting, AEC Objects, and Document Publishing. Students will learn Blocks, Fields, CAD Tips and Shortcuts, and also create their own Template and Title Block. Featured software: AutoCAD Architect. There is no prerequisite. Typically Taken 1st Semester.

DDSN 124. Descriptive Geometry. 4 Credits. (4 Lec) S
PREREQUISITE: DRFT 131. Advanced theory and practices in descriptive geometry construction and pattern design are covered in this course in preparation for advanced courses in Design Drafting. Descriptive Geometry teaches 3D visualization and how to solve geometric problems by drawing them in CAD. Typically Taken – 2nd Semester (Spring).

DDSN 166. Revit I. 3 Credits. (3 Lec) S
PREREQUISITE: CSTD 173, equivalent work experience or equivalent instruction. Students will be introduced to Parametric Design and Building Information Modeling (BIM) that make up the base platform of this software as they work through a variety of drafting projects.

DDSN 186. CAD II. 3 Credits. (3 Lec) F,S
PREREQUISITE: DRFT 156. Explores advanced concepts, techniques, and customizability of AutoCAD. Create templates, set up and modify printers, generate shortcuts and subroutines, and increase drafting speed and efficiency. Transition from an AutoCAD user into a competent CAD manager. Typically Taken – 2nd Semester (Spring).

DDSN 246. GIS and Mapping. 3 Credits. (3 Lec) S
Fundamentals of reading, interpreting, analyzing and designing maps. Topics of emphasis include 1.) the nature of geographic information, 2.) how geographic information systems (GIS) facilitates data analysis, and 3.) how cartographic design principles can be used to create maps that excel at effective visual thinking and communication. Students will create design effective reference and thematic maps for specific users. Typically Taken – 4th Semester (Spring).

DDSN 245. Civil Drafting. 3 Credits. (3 Lec) S
Prerequisite: DDSN 118 or DDSN 101 or Program Director Approval. This course builds upon previous CAD experience and follows the skills to creating drawings specifically for the Civil Engineering industry. Instruction will be given relating to basic engineering principles like: survey data, acquisition, contour/break line creation, azimuth/bearing calculations, coordinate systems, latitude/longitude, and slope/grade calculations. Projects will primarily use AutoCAD Civil 3D software.

DDSN 255. Machine Drafting. 3 Credits. (3 Lec) F,S
PREREQUISITE: DDSN 118 (CAD 1) and DDSN 124 (Descriptive Geometry) or Program Director approval. This course is a study and application of standards used for producing working drawings, including the fundamentals of geometric dimensioning and tolerance. Both detail and assembly drawings will be produced. Typically Taken – 4th Semester (Spring).

DDSN 256. Machine Drafting II. 3 Credits. (3 Lec) S
PREREQUISITE: DDSN 255. This course presents the advanced use of new design techniques and capabilities of solid modeling using the SolidWorks software, including the integration of the advanced parametric modeling and drafting tools for SolidWorks.

DDSN 265. Architectural Drafting. 3 Credits. (3 Lec) F,S
Prerequisites: CSTD 173, DDSN 118, DDSN 124, and DDSN 186. The students in this course will create, from scratch, an entire two story home, and draw the plans in CAD to the level where it is ready to be submitted for permit to the City of Bozeman or other municipality. Plans will include: Site Plan, Four Exterior Elevations, Foundation Plan, Main Floor Plan, Second Floor Plan, Electrical Plans, Sections and Details as required. All drawings must follow current codes including: International Residential Code, International Mechanical Code, Fuel Gas Code, International Energy Conservation Code, Uniform Plumbing Code, and National Electrical Code. Historical US Home Styles and Space Planning Problems will also be explored.

DDSN 266. Revit II. 3 Credits. (3 Lec) S
Prerequisite: DDSN 166. Students will be introduced to Parametric Design and Building Information Modeling (BIM) that make up the base platform of this software as they work through a variety of drafting projects. Typically Taken 4th Semester (Spring).

DDSN 275. Computer Rendering. 3 Credits. (3 Lec) F,S
PREREQUISITE: DDSN 118. This course will introduce basic computer rendering concepts and explore the use of current popular software. 2D and 3D concepts will be explored. Featured software: Adobe Photoshop and Google Sketchup. Typically Taken - 1st Semester (Fall).

DDSN 276. Presentation & Animation. 3 Credits. (3 Lec) S
Excites the student through immersion into the topic of 3D computer graphics and animation. Digital environments are explored using the 3D Studio Max software. Interdisciplinary projects are created utilizing digital object construction, lighting, camera, kinetic and artistic techniques.

DDSN 298. Internship. 4 Credits. (4 Ind) F,S,Su
Prerequisite: Program Director approval only. Job experience within your chosen field. Typically Taken – 4th Semester (Spring).

DDSN 299. Capstone. 3 Credits. (3 Lec) S
Prerequisite: DDSN 112, DDSN 265, and DDSN 275. Concurrent enrollment in DDSN 276 is recommended. Organize and refine previously created work into a presentation/job application format. Course includes: in-class presentations, mock interviews, and a public presentation of the portfolio to be judged by local industry professionals. Portfolios will be featured at the Spring Showcase event. Students are expected to set up, take down, and attend that event. A capstone class where students will create a professional portfolio from the knowledge, skill, and experience that they have acquired over the previous two years. Students will learn how to find employment in the hidden job market, conduct informational interviews, and present themselves in a professional setting. They will acquire the tools to successfully find and keep employment presently and into the future. Typically Taken - 4th Semester (Spring).