

SUBJECTS AND COURSES

COURSE DESCRIPTIONS - ADVANCED MANUFACTURING (ADM)

ADM 102 Computer Aid Design

This course provides an introduction to basic Computer Aided Drafting and Design (CADD) functions and techniques, using ?hands-on? applications. Topics include terminology, hardware, basic CADD and operating system functions, file manipulation, and basic CADD software applications in producing softcopy and hardcopy. This is a CORE course. This course supports CIP code 15.0613. **5 Credit Hours**

ADM 108 Intro to 3D Modeling

This course introduces the fundamentals of 3D parametric CAD software for the creation of parts, assemblies and drawings. Students will use SolidWorks software to sketch, create, edit, and constrain 3D solid models, as well as create and dimension 2D drawings per ASME standards from these models. The course focuses not only on the individual tools available in the software, but also on the best approach to the use of these tools, so that the design progresses in a logical manner, producing an effective and efficient design process. The elements of global collaboration are introduced along with printing concepts. A hands-on approach is used in this class to build a foundation for the continued training and application. **5 Credit Hours**

ADM 116 Intro to CATIA

PREREQUISITE: As required by college. Introduction to parametric, three-dimensional modeling using CATIA (v5 or 6). Focus on how to navigate within this software, how to create three-dimensional solid models using industry best practices, and then how to create and manipulate assemblies made from these parts. Learn the process of designing models with CATIA from conceptual sketching, through to solid modeling, assembly design, and drawing production. Upon completion of this course you will have acquired the skills to confidently work with CATIA. Gain an understanding of the parametric design philosophy of CATIA in this extensive hands-on course. It is expected that all new users of CATIA will require this course. **3 Credit Hours**

ADM 118 Intro to 3D Studio Max

PREREQUISITE: As required by college. Students will explore and implement the principles of modeling and animation through projects that emphasize analyzing real-world movement, adapting movement for the animation medium, and creating the illusion of life while applying animation principles. **5 Credit Hours**

ADM 255 Application of Design Capstone

This is a project- or research-oriented course that emphasizes synthesis through collaborative learning. Students integrate and apply previous knowledge, skills, and experiences they learned in their major and other academic courses to complete individual & team-based projects. Students will perform an individual new concept project and a group, industry-based live project to demonstrate they know the skills learned in the program of study. At the end of the semester, students will be required to present their group project to an industry. The course emphasizes communication skills, critical thinking, problem solving, computer literacy and teaming skills. **NOTE:** This course is usually taken during the last two (2) semesters of the program of study.

6 Credit Hours

ADM 261 Reverse Engineering

This course emphasizes reverse engineering techniques and quality control inspection of parts employing 3D printing, scanning, and Coordinate Measuring Machine (CMM technologies). The emphasis is on using applicable software to convert scanned images from point cloud data into 3D models. The process will allow using software to clean up point cloud data, create airtight 3D models, run a comparison analysis of collected data to solid, improve or reproduce a scanned part, print the part and then perform an inspection using CMM probe for additional analysis and comparison. **5 Credit Hours**