

JCC OFFICIAL COURSE OUTLINE

Course number, title and credits; total time allocation

Course Letter/Number	CAD 251	Credits	4	Title	Advanced CAD/Design		
Lecture/Discussion	30	hrs/semester		Lab	60	hrs/semester	Clinical
						er	hrs/semester

Catalog Description and Pre- and Co-requisites (Same as taxonomy and catalog)

This is a second level CAD based design course that will expand the student's knowledge of 3D CAD modeling, 3D assemblies, and more complex CAD based designs. 3D Stereolithographic printers and other prototyping equipment will be used to construct design projects.

Pre-requisites : MFG 105, CAD 151

Knowledge, Skills and Abilities Students Acquire from this Course (Educational Objectives)

After completing this course students will be able to:

- Create CAD drawings of various manufacturing based parts to high detail and accuracy
- Utilize 3D modeling to create full Cad models appropriate for rapid prototyping
- Utilize proper dimensioning standards and view placements and GDT where required
- Certify designs by using rapid prototyping equipment
- Gain experience for AutoDesk Certified User Examination.

Associate Degree Outcomes Addressed in this Course (These must appear in course syllabus.)

The ADOs and course objectives addressed in this class include the following:

ADO 7 – Think Critically

Students will demonstrate this skill by creating various blueprints and utilizing ANSI standards in a CAD based environment at a professional level.

Units/topics of Instruction

Topics of instruction will include proper 3D modeling techniques, standard shapes, extrusions, and revolutions. Special consideration for manufacturability will occur in all design projects. Final projects will be produced using rapid prototyping equipment to verify design and modeling accuracy.

Instructional Techniques and Procedures

2 hours of lecture and demonstration will be used to help transfer the foundation skills to the students. The remaining lab time of 4 hours/week will be utilized for students to complete their assignments and projects in the CAD lab on campus.

Instructional Use of Computer or Other Technology

Computers and 3D prototyping equipment will be utilized throughout the course. (AutoCad and supporting software for the prototyping equipment.

Instructional Materials and Costs to Students

A course fee of \$125.00 will be required to cover the cost of consumables in the rapid prototyping portion of the course. Polymer injection material and supporting gel materials will be consumables for each project.

Skills and abilities students should bring to the course

Able to read	<input checked="" type="checkbox"/> a limited amount of material <input type="checkbox"/> an average amount of material <input type="checkbox"/> an above average amount of material	Able to compute	<input checked="" type="checkbox"/> basic, pre-algebraic problems <input type="checkbox"/> simple algebraic problems <input type="checkbox"/> higher order mathematical problems
Able to read	<input checked="" type="checkbox"/> relatively easy material <input type="checkbox"/> moderately difficult material <input type="checkbox"/> technical or sophisticated material	Able to write	<input checked="" type="checkbox"/> short compositions <input type="checkbox"/> medium length compositions <input type="checkbox"/> lengthy compositions
Able to use technology	<input checked="" type="checkbox"/> keyboard skills/familiar with computer <input checked="" type="checkbox"/> computer application (AutoCad) <input type="checkbox"/> web navigation	Other necessary abilities	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

The course is usually scheduled

Day: Fall Winter Spring

Evening: Fall Winter Spring

Prepared by David Matthew Higgins

Date 6/1/2013

Approved by Dept. _____

Date _____

Approved by Dean [Signature]

Date [Signature]

Approved by Curr. Comm. _____

Date _____

(Last names, please)

Form Revised 12/4/00

Occupational Education

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