**COLLEGE OF DUPAGE**

**MANUFACTURING TECHNOLOGY 1101-001**

# Industrial Design/CAD

**TEC 0014 Wednesday 8AM-11:50AM**

Credit Hours: 3 Lecture Hours: 2 Lab Hours: 2

## COURSE DESCRIPTION

Introduction to Computer Aided Drafting for design of Industrial Blueprints, Mechanical Diagrams and Electrical Schematics. The use of menus, layers, fonts and line weights will be demonstrated. Basic Dimensioning, Mechanical Tolerances and Notes will be added to drawings using different layers. Pictorial drawings and Orthographic Projections will be utilized to demonstrate understanding of view alignment and purpose of various line types.

## COURSE OBJECTIVES

Upon successful completion of the course the student should be able to do the following:

1. Create drawings of commercial accuracy of actual objects from drawings or through instructions and multiple orthographic, isometric or oblique projections. Convert drawings between multiple views.
2. Develop section views using appropriate conventions to indicate all detail from given parts and/or instructions, and demonstrate in Lab drawings.
3. Apply basic dimensions of location and size to specific objects completely and demonstrate in Lab drawings.
4. Construct complete working drawings of simple industrial components.
5. Identify Electrical Components and replicate symbols in CAD drawings.
6. Layout Electrical Circuit using proper standards and formatting.

**INSTRUCTOR**

Adam Beemer, beemera@cod.edu

**REQUIRED TEXT & SUPPLIES**

* Workbook: “Engineering Drawing & Design”, Standiford, 5th Ed., ISBN-10: 1-111-30958-2

**OPTIONAL TEXT & SUPPLIES**

* Text : “Engineering Drawing & Design”, Madsen, 5th Ed., ISBN-10: 1-111-30957-4

## Important Dates

* Midterm Review – 3/12/2014 (First Half of Class)
* Midterm Exam – 3/12/2014 (Second Half of Class)
* Spring Break – 3/30/14 – 4/5/14 No Classes
* Final Review – 5/7/2014 (Second Half of Class)
* Final Exam – 5/14/2014

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## ASSIGNMENTS, LABS & EXAMINATIONS

Weekly Assignments, homework, will be assigned after lectures and are typically due the following week. Most labs will be done in class during lab time and a due date for each lab will be preannounced. There will be a Mid-term and Final examination given on pre-announced dates.

## CLASS PREPERATION, ATTENDANCE, & TARDINESS POLICY

Class preparation and attendance are essential if students are to receive maximum benefit from this class. Class preparation includes completion of reading and assignments by the due dates. Class attendance is strongly encouraged but your course grades will not be affected by periodic absences or tardiness, provided that the required work is completed and submitted on or before the due dates. Tardy students may enter the room in a fashion that will not disrupt a class in progress.

## MAKE-UP POLICY

If you cannot attend class on the scheduled date for an exam, please let me know beforehand so that a make-up can be arranged. Failure to pre-arrange a make-up may result in the loss of points for the exam. Allowing a make-up exam is the sole discretion of the instructor. Assignments and Labs may be turned in late with points being deducted.

## GRADING

### (100%-90%=A, 89%-80%=B, 79%-70=C, 69%-60%=D, 59%-0%=F)

|  |  |
| --- | --- |
| Attendance & Participation | 10% |
| Mid-term Examination | 20% |
| Final Examination | 20% |
| Labs | 50% |
| Homework | Extra Credit up to 10% |
| COURSE GRADE | 100% |

## ACADEMIC INTEGRITY/DISHONESTY POLICY

Any violations of College of DuPage Board policies 5050 & 5715 regarding academic integrity and/or dishonesty will be referred automatically to the appropriate College authorities for disposition. See appropriate pages in the college catalog for definitions and regulations.

## WITHDRAWAL POLICIES

**Withdrawing from a course:** You may withdraw up until the “Last Day to Withdraw without Instructor Permit” (see the Registration Calendar) through myACCESS or in person at the Registration office, Student Resource Center (SRC), Room 2048.

After the “Last Day to Withdraw without Instructor Permit” date (see the Registration Calendar), you may withdraw only with your instructor’s written permission. The instructor’s permission to withdraw must be brought or faxed to the Registration office. The registration fax number is (630) 790-3785. You will NOT be automatically withdrawn.

**Medical Withdrawals:** Requests for medical withdrawals should be made to the office of the Director of Admissions, Registration and Records, SRC 2048B, (630) 942-4284. Requests should be made in writing and accompanied by documentation from a physician or medical institution to verify the medical condition, date of onset and estimated length of treatment. Request forms for medical withdrawals are reviewed individually. Refunds are issued when appropriate within the guidelines of the College of DuPage refund policy. You will receive written notification of the decision within two (2) weeks from the office of the Director of Admissions, Registration and Records.

## INCOMPLETE GRADE POLICY

The instructor of record may give an incomplete or “I” grade when a student has been unable to complete the course within the prescribed time due to unforeseen circumstances. The student is responsible for contacting the instructor of record or, when the instructor of record is no longer employed at the college, the appropriate dean regarding course completion. Course work must be completed within the time limits prescribed by the instructor of record but not to exceed twelve (12) months from the end of the term in which the “I” grade was assigned. The “I” grade may be changed within the time limit prescribed by the instructor of record. If the “I” has not been changed by the instructor of record at the end of the twelve (12) month period, the “I” will automatically change to an “F.” During the time the “I” is on the student’s record, it will not be calculated into the grade point average.

## CLASSROOM POLICIES/STUDENT CONDUCT

In order to achieve the course objectives, it is essential that you enjoy the class in addition to complying with the above requirements and the rules and policies of College of DuPage contained in the catalog and other College material. If you are having course/College related problems, please feel free to talk to me so that we can resolve them to your satisfaction and benefit. All class work is done individually, but students may assist fellow classmates.

**WEEKLY ASSIGNMENTS\***

# Chapters Covered and Labs

**Week**

|  |  |  |  |
| --- | --- | --- | --- |
| **1** |  |  | **Wed 1/15** |
|  |  |  | **Syllabus Introduction, Basic Drafting Introduction** |
| **2** |  |  | **Wed 1/22** |
|  |  |  | **Drawing Layers & CADD & Manufacturing Processes** |
| **3** |  |  | **Wed 1/29** |
|  |  |  | **Sketching & Lines and Lettering** |
| **4** |  |  | **Wed 2/5** |
|  |  |  | **Drafting Geometry & Multiviews** |
| **5** |  |  | **Wed 2/12** |
|  |  |  | **Auxiliary Views & Dimensioning and Tolerancing** |
| **6** |  |  | **Wed 2/19** |
|  |  |  | **Fasteners and Springs & Sections and Breaks** |
| **7** |  |  | **Wed 2/26** |
|  |  |  | **Geometric Dimensioning & Pictorial Drawings** |
| **8** |  |  | **Wed 3/5** |
|  |  |  | **Working Drawings & Midterm Review** |
| **9** |  |  | **Wed 3/12** |
|  |  |  | **Midterm Exam & Catch-Up Day** |
| **10** |  |  | **Wed 3/19** |
|  |  |  | **Mechanisms & Belt and Chain Drives** |
| **11** |  |  | **Wed 3/26** |
|  |  |  | **Welding Processes & Sheet Metal** |
|  |  |  | **Wed 4/2** |
|  |  |  | **SPRING BREAK** |
| **12** |  |  | **Wed 4/9** |
|  |  |  | **Electrical Circuits & Industrial Piping** |
| **13** |  |  | **Wed 4/16** |
|  |  |  | **Structural Drafting** |
| **14** |  |  | **Wed 4/23** |
|  |  |  | **HVAC & Civil Drafting** |
| **15** |  |  | **Wed 4/30** |
|  |  |  | **Engineering Process Design** |
| **16** |  |  | **Wed 5/7** |
|  |  |  | **Catch-Up Day** |

## Wed 5/14

**Final Exam**

**\*** Weekly Progress subject to change based on the student understanding and advancement.

From the grant agreement’s Part IV Special Conditions, Item 15, Intellectual Property Rights, the following needs to be on all products developed in whole or in part with grant funds:

“This workforce solution was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timelines, usefulness, adequacy, continued availability, or ownership. This solution is copyrighted by the institution that created it. Internal use, by an organization and/or personal use by an individual for non-commercial purposes, is permissible. All other uses require the prior authorization of the copyright holder.”