

**Purpose:** It is the intention of this Administrative-Master Syllabus to provide a general description of the course, outline the required elements of the course and to lay the foundation for course assessment for the improvement of student learning, as specified by the faculty of Wharton County Junior College, regardless of who teaches the course, the timeframe by which it is instructed, or the instructional method by which the course is delivered. It is not intended to restrict the manner by which an individual faculty member teaches the course but to be an administrative tool to aid in the improvement of instruction.

**Course Title** – Electrical Drafting  
**Course Prefix and Number** – DFTG2407

**Department** – Engineering Design

**Division** – Technology & Business

**Course Type:** (check one)

- Academic General Education Course (from ACGM – but not in WCJC Core)
- Academic WCJC Core Course

WECM course (This course is a Special Topics or Unique Needs Course: Y  or N )

**Semester Credit Hours # : Lecture hours# : Lab/other hours #**      4:3:3

**Equated Pay hours for course** –  $(3 + (3 * .5)) = 4.5$

**Course Catalog Description** - A study of area lighting, control systems and power layouts, electrical and safety codes, load factors and distribution requirements.

|                          |
|--------------------------|
| List Lab/<br>Other Hours |
| Lab Hours<br>3           |
| Clinical Hours           |
| Practicum Hours          |
| Other (list)             |

**Prerequisites/Co-requisites** - DFTG1410 & DFTG2419

*Approvals – the contents of this document have been reviewed and are found to be accurate.*

|  |                                    |                  |
|--|------------------------------------|------------------|
| Prepared by Jo Ann Lurker                        | Signature<br><i>Jo Ann Lurker</i>  | Date<br>09-25-09 |
| Department Head Jo Ann Lurker                    | Signature<br><i>Jo Ann Lurker</i>  | Date<br>09-25-09 |
| Division Chair Stephanie Dees                    | Signature<br><i>Stephanie Dees</i> | Date 10-5-2009   |
| Dean of Vocational Instruction Leigh Ann Collins | Signature<br><i>LAC</i>            | Date<br>10-20-09 |



**I. Topical Outline** – Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, clinical or other non lecture instruction):

- Drawing Conventions
- Basic Electricity and Magnetism Concepts (AC & DC)
- Common Electrical Equipment
- Simple Connection Diagrams
- One Line Diagrams
- Introduction to the NEC
- Basic Motor Controls
- Sizing Conductors and Conduits
- Riser Diagrams
- Equipment Grounding and Lightening Protection
- Circuit Protection Devices
- Study of Classified Hazardous Areas

**II. Course Learning Outcomes**

| <b>Course Learning Outcome</b>   | <b>Method of Assessment</b>  |
|--|--|
| <p>Create electrical details and diagrams; and utilize current standards to size conductors, conduit, controllers and calculate load factors and distribution requirements.</p> <p>Create fundamental electrical drawings, using standardized symbology:</p> <ul style="list-style-type: none"> <li>One-Line Diagrams</li> <li>Riser Diagrams</li> <li>Ladder Diagrams</li> <li>Raceway Layouts</li> </ul> <p>Demonstrates the ability to use the National Electrical Code to properly select or calculate appropriate electrical specifications for working drawings.</p> | <p>A semester project will be assessed using the rubric attached to this document.</p> <p>Eighty percent of the students will earn a minimum of 70% of the points defined by the rubric.</p> |

**III. Required Text(s), Optional Text(s) and/or Materials to be Supplied by Student.**

A text covering the technical material for the course. An example would be Electrical Drafting & Design, by Snow

- A flash drive is required for achieving data files
- Textbook: Electrical Drafting and Design Package
- Author: Snow
- Publisher: Xanadu

#### IV. Suggested Course Maximum - 20

V. List any specific spatial or physical requirements beyond a typical classroom required to teach the course.  
Computer workstations, plotters/printers, data projection system and appropriate software

VI. Course Requirements/Grading System – Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course

|             |     |
|-------------|-----|
| 90% to 100% | = A |
| 80% to 89%  | = B |
| 70% to 79%  | = C |
| 60% to 69%  | = D |
| Below 60%   | = F |

The grade is based on the average of : written examinations, drawing projects and an attendance grade. Each of these components are weighted equally.

#### VII. Curriculum Checklist

- **Academic General Education Course** (from ACGM – but not in WCJC Core)  
No additional documentation needed

- **Academic WCJC Core Course**  
Attach the Core Curriculum Checklist, including the following:

- Basic Intellectual Competencies
- Perspectives
- Exemplary Educational Objectives

- **WECM Courses**  
Attach the following:

- Program SCANS Matrix
- Course SCANS Competencies Checklist

**\* See *Engineering Design Assessment Plan for Program Goals (Student Learning Outcomes), Curriculum Map, SCANS Matrices and SCANS Assessments***

## Engineering Design Project Rubric

| Item  | 3 | 2 | 1 | 0 | N/A |
|---|---|---|---|---|-----|
| Project Completion (Projects completed fully)                               |   |   |   |   |     |
| Adherence to Project Deadlines  |   |   |   |   |     |
| Project Solution  |   |   |   |   |     |
| Appropriate View Selections   |   |   |   |   |     |
| Appropriate Specifications Annotated  |   |   |   |   |     |
| Mathematical Accuracy   |   |   |   |   |     |
| Geometric Accuracy  |   |   |   |   |     |
| Dimensioning: Applied necessary dimensions and notes in the proper views    |   |   |   |   |     |
| View Correctness (Views project correctly and adhere to drafting standards) |   |   |   |   |     |
| Followed Written Instructions   |   |   |   |   |     |
| Followed Verbal Instructions  |   |   |   |   |     |
|   |   |   |   |   |     |
|   |   |   |   |   |     |
|   |   |   |   |   |     |
|   |   |   |   |   |     |

**Assessment Scale:**

- 0 = Total noncompliance
- 1 = Minimal compliance (Acceptable)
- 2 = Average compliance
- 3 = Above average compliance