**CHAMP Course Map**

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| **Course Name:** **EGT 160** Intro to Industrial Drafting & Design | |
| **Instructor Name:** Rick Glesner | September 2016 |
| **Course Competencies:** | |
| Introduces the drafting principles that are expected to be understood by drafters in the mechanical discipline.   1. Learn how to draw a threaded fastener. (I)    1. Define and label the parts of a screw thread.    2. Identify various screw thread forms.    3. Draw detailed, schematic, and simplified threads in section and elevation.    4. Define typical thread specifications.    5. Identify various fasteners and describe their use.    6. Draw various screw head types. 2. Learn how to draw a spring. (II)    1. Learn how draw compression springs, torsion spring, Belleville springs, and helical springs    2. Understanding and using dimension figures correctly.    3. Single and dual dimensioning.    4. Proper dimensioning of angles.    5. Contour dimensioning. 3. Learn about the use of welding symbols. (III)    1. Learn the American Welding Society Standard Welding symbols and processes and their appropriate uses in production drawings. | |

**Course Materials:**

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| REQUIRED TEXTBOOK/MATERIALS:   1. Engineering Drawing & Design - David Madsen - ISBN 13:978-1-111-30957-2 2. USB Flash drive 2.0, in which to store your information |

| **Module # and Title** | **CCNS Competencies** | **Content, Activities or Challenges (Learner Interaction & Engagement)** | **Assessments, Rubrics (Feedback)** | **Publish to OER** |
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| **Module 1: Metal and Fasteners Task 1: Metals** | 1 | 1. Lecture: How metals affect threaded fasteners. |  |  | |
| **Task 2: Threaded Fasteners** | 1 | 1. Lecture: The threaded fastener/bolt & nut 2. View Threaded Fastener PowerPoint |  | Threaded Fastener PPP | |
| **Task 3: Drawing Threaded Fasteners** | 1 | 1. Lecture: How to label parts of fasteners 2. View Drawing Threaded Fastener PowerPoint |  | Drawing Threaded Fasteners PPP | |
| **Task 4: Defining Threaded Fastener Specifications** | 1 | 1. Lecture: Defining threaded fastener specification 2. View Drawing Threaded Fastener PowerPoint |  |  | |
| **Task 5: Screw Thread Forms** | 1 | 1. Lecture: Identify various screw thread forms. 2. View Drawing Threaded Fastener PowerPoint |  |  | |
| **Task 6: Fasteners** | 1 | 1. Identify various fasteners and describe their use 2. Assignment Worksheet #1: Measure and Identify Threaded Fasteners | In class use of equipment to measure and identify threaded fasteners | Work Sheet #1 | |
| **Task 7: Spring Types** | 2 | 1. Lecture on spring types and how to draw them 2. View Springs PowerPoint 3. Read Springs Handout |  | Springs PPP  Springs Handout | |
| **Module 2: Drawing Springs** | 1,2,3 | 1. Lecture: Learn scope of working/production drawings produced in 2D AutoCAD 2. Review Working Drawings PowerPoint |  | Parts Drawing Examples | |
| **Task 1** | 1,2,3 | 1. Drawing Assignment 1: Draw detailed views of all parts of the vice in AutoCAD orthographic & isometric | Drawing Assignment 1: Draw detailed views of all parts of the vice in AutoCAD orthographic & isometric |  | |
| **Task 2** | 1,2,3 | 1. Drawing Assignment 2: Draw Isometric Assembly and Isometric Exploded Assembly | Drawing Assignment 2: Draw Isometric Assembly and Isometric Exploded Assembly |  | |
| **Task 3** | 1,2,3 | 1. Drawing Assignment 3: Draw/dimension/annotate entire vice in paperspace also showing assembled and exploded views with BOM (Bill of Materials) | Drawing Assignment 3: Draw/dimension/annotate entire vice in paperspace also showing assembled and exploded views with BOM (Bill of Materials)  **Turn in all drawings to instructor: Grade Working Drawing Package** |  | |
| **Module 3: Welding Symbols** | 3 | 1. Lecture on welding call out 2. View Welding Handout |  | Welding Handout | |