**CHAMP Course Map**

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| **Course Name:** MAC 245 – CAD/CAM 3D | |
| **Instructor Name:** | **Date:** |
| **Institution:** Front Range Community College | |
| **Course Competencies:**   1. Demonstrate effective file management. 2. Demonstrate 3D construction management techniques. 3. Produce 3D wireframe geometry. 4. Produce 3d solids utilizing the extrude, revolve, sweep, and loft commands. 5. Produce 3D surfaces utilizing the loft, coons, ruled, revolve, and sweep commands. 6. Perform manipulations and maneuvering of 3D geometry within 3D space. | |

**Course Materials (Text, Edition and any other publisher items)**

**Textbooks and/or Resources:**

1. Mastercam X8 Training Tutorial – Mill Level 1

In-House Solutions

Mariana Lendel

ISBN: 1-77146-045-8

1. Mastercam X8 Training Tutorial – Mill Level 3

In-House Solutions

Mariana Lendel

ISBN: 1-77146-046-6

1. Mastercam X8 Training Tutorial – Mill Level 3

In-House Solutions

Mariana Lendel

ISBN: 1-77146-047-4

| **Module # and Title** | **CCNS Competencies** | **Content, Activities or Challenges**  **(Learner Interaction**  **& Engagement)** | **Assessments, Rubrics (Feedback)** | **Publish to OER** |
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| **Module 1:** | I. | 1. View "File Management" presentation. 2. Complete Quiz 1. | 1. Quiz 1 |  |
| **Module 2:** | II. | 1. View "3D Construction Management" presentation. 2. Complete practice exercise: 3D\_Construction.mcx-8 3. Complete Quiz 2. | 1. Quiz 2 2. Practice exercises |  |
| **Module 3:** | III. | 1. View "Wire Frame Construction" presentation. 2. Complete Quiz 3. | 1. Quiz 3 |  |
| **Module 4:** | IV.  VI. | 1. View "Solids" presentation. 2. Complete practice exercises:    1. Solids\_Boolean.mcx-8    2. Solids\_Chamfer.mcx-8    3. Solids\_Extrude.mcx-8    4. Solids\_Fillet.mcx-8    5. Solids\_Loft.mcx-8    6. Solids\_Revolve.mcx-8    7. Solids\_Sweep.mcx-8 3. Complete Quiz 4. | 1. Quiz 4 2. Practice exercises |  |
| **Module 5:** | V.  VI. | 1. View "Surfaces" presentation. 2. Complete practice exercises:    1. Surfaces\_Fence.mcx-8    2. Surfaces\_Filler.mcx-8    3. Surfaces\_Net.mcx-8    4. Surfaces\_Offset.mcx-8    5. Surfaces\_Revolved.mcx-8    6. Surfaces\_Ruled-Lofted.mcx-8    7. Surfaces\_Swept.mcx-8    8. Surfaces\_Trim.mcx-8 3. Complete Quiz 5. | 1. Quiz 5 2. Practice exercises |  |