# Wireframe & Surfaces Course No. 41510 Credit: 0.5

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| --- | --- | --- | --- |
| **Student name:**  |  | **Graduation Date:** |  |

Pathways and CIP Codes:Aviation Productions (15.0000) - Design Strand

Course Description: An a**pplication level** course that teaches students wireframe and surfaces design geometry used to create complex contours. (CATIA 3)

Directions:The following competencies are required for full approval of this course. Check the appropriate number to indicate the level of competency reached for learner evaluation.

**RATING SCALE:**

4. Exemplary Achievement: Student possesses outstanding knowledge, skills or professional attitude.

3. Proficient Achievement:Student demonstrates good knowledge, skills or professional attitude. Requires limited supervision.

2. Limited Achievement:Student demonstrates fragmented knowledge, skills or professional attitude. Requires close supervision.

1. Inadequate Achievement:Student lacks knowledge, skills or professional attitude.

0. No Instruction/Training:Student has not received instruction or training in this area.

## Benchmark 1: Demonstrate basic concepts of the wireframe and surface structure

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Navigate the “product life." |  |
| 1.2 | Identify the wireframe and surface tools. |  |
| 1.3 | Review integration of wireframe and surface geometry to create solid objects. |  |
| 1.4 | Identify how wireframe and surface geometry is used throughout the environment. |  |

## Benchmark 2: Demonstrate how to effectively create wireframe geometry with the wireframe and surface tools

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 2.1 | Create points, lines, and planes. |  |
| 2.2 | Create circles and corners. |  |
| 2.3 | Create curves: splines, helixes, parallels, combines, projects, and intersects. |  |
| 2.4 | Work with 2D and 3D supports. |  |
| 2.5 | Modify wireframe geometry. |  |

## Benchmark 3: Demonstrate how to effectively create surfaces with the wireframe and surface tools

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 3.1 | Create basic surfaces: extrudes, revolves, spheres, cylinders. |  |
| 3.2 | Create offset surfaces. |  |
| 3.3 | Create swept surfaces. |  |
| 3.4 | Create fill surfaces. |  |
| 3.5 | Create multi-section and blend surfaces. |  |
| 3.6 | Work with geometrical laws. |  |

## Benchmark 4: Demonstrate how to effectively perform operations on geometry with the wireframe and surface tools

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 4.1 | Perform joins on wireframe and surfaces. |  |
| 4.2 | Perform heals on surfaces and smooth wireframe. |  |
| 4.3 | Perform splits, trims, and extracts on wireframe and surfaces. |  |
| 4.4 | Create fillets and chamfers on surfaces. |  |
| 4.5 | Create patterns, perform transformations and extrapolations on wireframe and surfaces. |  |

## Benchmark 5: Demonstrate how to effectively perform analysis on geometry with the wireframe and surface tools

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 5.1 | Perform connect checker analysis on wireframe and surfaces. |  |
| 5.2 | Perform draft and curvature analysis on surfaces. |  |
| 5.3 | Perform porcupine curvature analysis on wireframe. |  |

I certify that the student has received training in the areas indicated.

Instructor Signature:

For more information, contact:

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