Canvas Course Curriculum:

SolidWorks Surface Modeling

1) Surface modeling introduction using SolidWorks

2) Creating classic surface model shapes using SolidWorks.

3) SolidWorks Aircraft Surface Model SolidWorks Part 1: Sketching

4) Part 2: Lofting the Fuselage.

5) Part 3: Creating the Canopy

6) Part 4: Creating the wings and stabilizers

7) Part 5: Creating the Air Intake

8) Part 6: Surface Trimming, Mirroring, and Conversion to Solid

9) Part 7: Creating a Base and Mounting Points.

10) Part 8: Splitting The Model For Printing

11) Part 9: 3D Printing Your Model

12) Part 10: Post Processing Your 3D Print

***Competency****: What are the key critical pieces that I think my students should have as a result of the* ***process*** *they’ve been engaged in? → these are the things that would become badges*

***Benchmarks****: The steps within each competency*

***Evidence****: Student demonstration of the competency*

# Competency-Based Assessment Tool

# Intro to SolidWorks

| **Competency** | **Benchmarks** | **Evidence**  *Portfolio, Project-Based, Evaluation, Summative, Formative, Observation* | **Rating**  0-*Not Yet Demonstrated*  *1 - Emerging*  *2 - Competent*  *3 -Highly Competent* | **Narrative Feedback for Student**  *Faculty, Mentor, Peer, Self* |
| --- | --- | --- | --- | --- |
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# Competency-Based Assessment Tool

# SAMPLE: SIPP Summer Curriculum

| **Competency** | **Benchmarks** | **Evidence**  *Portfolio, Project-Based, Evaluation, Summative, Formative, Observation* | **Rating**  0-*Not Yet Demonstrated*  *1 - Emerging*  *2 - Competent*  *3 -Highly Competent* | **Narrative Feedback for Student**  *Faculty, Mentor, Peer, Self* |
| --- | --- | --- | --- | --- |
| *Fluency using CAD software to develop working prototypes of assigned projects* | *Develop CAD models of moderate complexity using a variety of sketch and modeling tools in novel ways*  *Develop assemblies and sub-assembly using to defined tolerance*  *Develop engineering drawings to workplace standard*  *Refine model, integrating feedback from multiple sources.* | *Student Work from Week 1 Project* |  |  |
| *Demonstrate ability to program microcontrollers to interact with the physical world* | *Attain fundamental concepts of programming: syntax,, language, conditional statements, variables,*    *Develop strategies for Debugging and troubleshooting* | *Series of projects completed using*  *CPX*  *and*  *Arduino* |  | *Checklist /rubric* |
| *Demonstrate ability to build working prototypes in conjunction with physical computing devices* | *Devise plans*  *Use tools and materials for construction*  *Test*  *Iterate on design / troubleshoot* | *Series of projects completed using*  *CPX*  *and*  *Arduino* |  |  |
| *Consistently demonstrating a growth mindset during assigned projects and activities* | *Embrace challenges*  *Persist through setbacks*  *View failures as opportunity for growth*  *Maintain effort & strong work ethic*  *Learn when to ask for help*  *Take inspiration from the setbacks of others* | *Week 1: end of week check-in, reflection*  *Continually evaluated at end of week check-ins* |  | *Checklist/rubric* |
| *Successfully communicates and collaborates with others* | *-Communicates needs, wants, information, negotiates, resolves conflict, and asks for help when needed*  *-Understands giving and receiving feedback and constructive criticism*  *-Develops positive relationships with supportive peers and adults*  *-Participates in group/team activities using teamwork and* [*collaborative problem-solving*](https://www.mediate.com/articles/BernsteinS1.cfm) | *Week 6: end of week check-in*  *Continually evaluated during any group/team activities* |  |  |