**STEM 40303**

**Major Assignment: The Design Loop/Process**

After reading A Framework for STEM Problem Solving and conducting research on the various engineering design loops available, borrow the best ideas and develop your own Design Loop/process. Your design loop should illustrate the major steps in the design process and be designed in such a way as to be a quality learning tool for the students you will eventually teach. Your completed design loop should be designed and submitted as a PowerPoint electronic file and as a .pdf to ensure that your poster text and graphics display properly.

Use the provided template (PowerPoint – 24” X 18”) – located on the UASTEM website. If you decide not to design your project using PowerPoint (using Canva, CorelDRAW, Illustrator, etc.), please make sure that you assignments is the correct size (24” X 18”) and provide a written description of how you developed the project.

Develop your design loop/process poster on the first slide in a way that will attract the attention of elementary or secondary students.

* Use appropriate pictures and attractive graphics that are not pixelated and do not contain copyright watermarks.

Additional slides should include:

* Detailed notes about each of the steps of your design loop (directions, questions, and essential prompts for students) and
* A detailed description of how the design process is used in STEM education.

Submit your completed slides to Blackboard in both a PowerPoint and pdf. format using the following as an example: carter-vinson-designloop.pptx and carter-vinson-designloop.pdf

**B*e prepared to discuss and defend your design loop in front of the class.***

**Major Assignment 1: The Design Loop/Process Project Rubric**

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| **Category** | Up to 5 pts. | Up to 10 pts. | Up to 15 pts. | Up to 20 pts. | **Score** |
| **The Design Loop and Process****(20 pts.)** | The candidate does not present new information; does not follow recommended pattern; potential audience wouldn’t be able to grasp information/complete. | The candidate was clearly uncomfortable with the concept of the design process and only included rudimentary information and/or partially met requirements. | The candidate is at ease with the design process but fails to fully address all requirements of the assignment. | The candidate demonstrates full knowledge (more than required) and includes rich information that fully addresses the assigned task. Potential audience could easily use the design loop/process |  |
|  | Up to 5 pts. | Up to 10 pts. | Up to 15 pts. | Up to 20 pts. |  |
| **Design Loop Organization****(20 pts.)** | Potential audience would not understand because the product is not sequenced or organized adequately. The candidate not use the provided template or include a second slide/page with detailed notes about each of the steps of your design loop (directions, questions, and essential prompts for students) and a description of how the design process is used in STEM education. | Potential audience would have difficulty following and completing the design loop/process. Included a second slide/page with minimal notes about each of the steps of your design loop (directions, questions, and essential prompts for students) and a description of how the design process is used in STEM education. | The design loop/process is presented in logical sequence utilizing a recognized format and is tailored for the potential audience. Included a second slide/page with some notes about each of the steps of your design loop (directions, questions, and essential prompts for students) and a description of how the design process is used in STEM education. | The design loop/process is presented in a logical, interesting sequence using a recognized format which the potential audience can follow. Included a second slide/page with detailed notes about each of the steps of your design loop (directions, questions, and essential prompts for students) and a detailed description of how the design process is used in STEM education. |  |
|  | Up to 2.5 pts. | Up to 5 pts. | Up to 7.5 pts. | Up to 10 pts. |  |
| **Writing/****Mechanics****(10 pts.)** | Project has four or more spelling errors and/or grammatical errors. Organization was ill-conceived. Inappropriate graphics. Did not submit in both PowerPoint and .PDF formats | Project had three misspellings and/or grammatical errors. Organization was an issue. | Project has few misspellings and/or grammatical errors. Organization was adequate. | Project has no misspellings or grammatical errors, was organized well, and includes appropriate graphics. Is presented in an attractive manner.Submitted correctly in both PowerPoint and .PDF formats. |  |
| **Comments: Total Points:**  |