**STEM 4033**

**Major Assignment: The Design Loop**

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

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 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 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. |  |
| **Curriculum****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:**  |