**Bio-inspired Design Concept Generation Assignment**

**TASKS:**

***Individual 1*)** Use the bio-inspired design approach taught in class to create a bio-inspired solution for the propulsion sub-system of the human powered vehicle taking inspiration from the northern leopard frog. Show your work using the C-K mapping template. Only sketching the sub-system is required.

***Individual 2*)** Use the bio-inspired design approach taught in class to create a second bio-inspired solution for a single sub-system (your choice) of the human powered vehicle. When searching for biological inspiration for your chosen sub-system, to reduce the burden of searching all of the biological space consider one of the following biological systems: Tree, bird, beetle, snake, octopus. Show your work using the C-K mapping template. Only sketching the sub-system is required.

*\*\*Copying the example from class and turning it in as your own work would be plagiarism and will result in a zero for the assignment and an honors council violation.\*\**

***Individual 3*)** Sketch one full human powered vehicle concept following the concept sketch template. The sketch should include the bio-inspired sub-systems from tasks 1 and 2. All other sub-system solutions should come from the team morphological matrix. The sketch should clearly show how the sub-systems would function and integrate. Write a paragraph describing the sketch.

***Individual 4)*** Answer the following questions about bio-inspired design:

* What did I learn about the content (biology)?
* How did I learn the content?
* What am I going to do with the content?
* What did I learn about the process (bio-inspired design)?
* How did I learn the process?
* What am I going to do with the process?

**DELIVERABLE FORMAT:**

**1 & 2. Individual Concept Generation:**

Top of Page – Team Member Name, Section, Team Name

Body of Document – Use the Concept-Knowledge mapping template posted to the course Canvas site. Use one mapping template for each concept.

***Use landscape orientation.***

**3. Individual Sketch:**

Top of Page – Team Member Name, Section, Team Name

Body of Document – Sketch of bio-inspired concept followed by paragraph describing concept. Use the template posted to the course Canvas site. Description of concept should be typed, while concept sketch should be hand drawn.

*Advice: Draw concept on a blank sheet of paper. Scan in sketch and place it in the box as an image. Type description. Print assignment.*

***Use portrait orientation.***

**4. Individual Questions:**

Top of Page – Team Member Name, Section, Team Name

Body of Document – Type-written answers to the six reflections questions, and numerical answers to the seven survey questions.

***Use portrait orientation.***