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**Course Syllabus**

**Projects in Engineering**

**Spring 2025**

**Instructor:** Ms. Susie Cunningham

**Email:** scunningham@bsu.edu

**Office: Elliott 008-C**

**Classroom: BU115**

**Office Hours:**

**Mondays: 10:00 – 11:00 a.m. (in Elliott 008-C)**

 **Noon – 2:00 p.m. (in Elliott 008-C)**

 **4:00 – 5:00 p.m. (in BU115)**

**Wednesdays: 10:00 – 11:00 a.m. (in Elliott 008-C)**

 **Noon – 2:00 p.m. (in Elliott 008-C)**

**Fridays: 10:00 – 11:00 a.m. (in Elliott 008-C) Noon – 2:00 p.m. (in Elliott 008-C)**

**Other times for offices hours may be made by appointment. Also, can email me at scunningham@bsu.edu.**

**Description:**

Students will develop and work on engineering-related projects that have a strong community service component. The class will be divided into small groups and work on projects based upon common interest. All projects will be required to demonstrate development and application of engineering skills in addition to fulfilling an identified need in the community. As a project-based course, much of the activity will likely happen outside of the classroom. Project groups will meet with the instructor on a regular basis.

**Texts:**

 Web Pages

 Hand-outs

 Manuals

**Course Methodology:**

Course methodology will include **hands-on activities, lectures, outside readings, classroom discussion, guest speakers, field trips, and projects.** Students will be **creating** various hands-on projects.

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**Student Evaluation:**

There will be **15 discussion questions over engineering topics, 7 homework assignments,** and **4 major projects**.

**Method of Grading:**

Grades will be based on a point system.

 **Points**

 15 Discussion Questions 75

 7 Homework Assignments 60

 4 Major Projects (50 pts. Each) 200

 **Total Points 215**

 Accumulated totals are then distributed into letter grades as follows:

 **A (93% - 100%)**

 **A- (90% - 92.9%)**

 **B+ (88% - 89.9%)**

 **B (83% - 87.9%)**

 **B- (80% - 82.9%)**

 **C+ (78% - 79.9%)**

 **C (73% - 77.9%)**

 **C- (70% - 72.9%)**

 **D\* (69% and below)**

**Classroom Policies:**

**Homework Assignments:** **Homework assignments** must be **turned in by the due date**. Assignments may be turned in earlier than the due date. **Any late homework** will **result** in a **reduced** **grade.** **(25% off for each day late.) Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday all count as days. A timeframe for a day constitutes from 12:01 a.m. – Midnight.**

**Absence prior to due Date:** Missing class (excused or not) prior to a test, or other due dates for homework assignments does not exempt the student from preparing and taking the test and/or submitting the required homework assignment on the due date. Exceptions may be granted in advance of class time and must be discussed with the instructor.

**Tardiness:** If you arrive more than 5 minutes late to class, you will be marked tardy. After arriving 20+ minutes late, you will be marked absent. **A student sleeping in class will be counted as an absence.**

**Academic Dishonesty:** (Refer to the Indiana Academy Handbook.)

In the event, a student turns in a computer program for a homework assignment or test that was not

originally written by the student, the homework or test will fall under the category of plagiarism. This will be considered a **serious offense**. You will be allowed to ask for help from other students if they are

working on a preannounced group project or the student needs assistance finding a syntax error or minor errors.

If a student does use code in a programming homework assignment or project that was obtained from the Internet, another programming source, or writing code that is similar in nature, the student **must put in a comment in the computer program with the source of where the code was obtained, otherwise this will be considered under the category of plagiarism.**

Furthermore, if a student writes a computer program for another student, the student “knowingly permitting one’s work to be submitted by another person as if it were the submitter’s original work” will also be penalized.

You cannot use **AI** to write your programs for you! You can use **AI** to help debug your programs.

Penalties will be assessed in accordance to the Indiana Academy Handbook.

**Communication- Come See Me:**

The best way to communicate with me is through email at **scunningham@bsu.edu**. My phone dings when I receive an email, and I can answer back via email through my phone. Generally, I do answer back almost immediately during work hours (unless I am teaching a course or on my way to class). I will always respond within 24 hours. (This does include the weekends.) Generally, I am more available late at night. Office hours will be posted

**Diversity and Inclusion:**

Ball State University aspires to be a university that attracts and retains a diverse faculty, staff and student body. We are committed to ensuring that all members of the community are welcome through valuing the various experiences and worldviews represented at Ball State and among those we serve. We promote a culture of respect and civil discourse as expressed in our Beneficence Pledge. As a reflection of Ball State’s commitment to respect, civil discourse, and the Beneficence Pledge, Inclusive Excellence at the Indiana Academy emerges as one of the priorities of our living and learning community. We strive to exist together respectfully and compassionately, creating an environment where every member can thrive. Unfortunately, there might be occasions when something occurs that disrupts our progress toward meeting these objectives. In this case, we encourage any member of the Academy community to file a Campus Climate Report (CCR) https://bsu.qualtrics.com/jfe/form/SV\_6mbRbL5acAntUTI. All reports will be taken seriously, and appropriate responses will be carried out by the Academy administration.

**Accommodations:**

If you need course adaptations or accommodations because of a disability, please contact me as soon as possible.  Ball State’s Disability Services office coordinates services for students with disabilities; documentation of a disability needs to be on file in that office before any accommodation can be provided. Disability Services can be contacted at 765-285-5293 or dsd@bsu.edu.

**Canvas Accessibility:**

Canvas provides a user experience that is easy, simple, and intuitive. Special attention has been paid to making Canvas screen-readable. The Rich Content Editor encourages users to create accessible content pages (i.e. text formatting is accomplished using styles). Canvas is designed to allow limited customization of colors and schemes to be accessible for all users. The National Federation of the Blind granted Canvas the Gold Level Web Certification in 2010.

Find more information by visiting the [Canvas Voluntary Product Accessibility Template (VPAT)](https://www.canvaslms.com/accessibility). <https://community.canvaslms.com/t5/Accessibility/Accessibility-within-Canvas/ba-p/261501>

**Indiana Academy Mask Policy:**

The Indiana Academy will follow [Ball State University’s mask policy](https://www.bsu.edu/-/media/www/departmentalcontent/emergencypreparedness/covid19/recovery%20plans/student%20return%20to%20campus%20plan_11-16-2020_full.pdf?la=en&hash=C46E28697410544B454D667609AA24BE6C7BAA9F) (see Section IV). This may change throughout the year.

## Class Participation:

## Unless instructed otherwise, you will need to be working on items relating to the classroom homework/topic during the class time.

## Indiana Academy Wireless Device Policy:

Pursuant to Indiana Code 20-26-5-40.7, The Indiana Academy for Science, Mathematics and Humanities prohibits student use of wireless communication devices for non-instructional purposes in the classroom. As such, any and all portable wireless devices, that have the capability to provide voice, messaging, or other data communication between two or more parties, must only be used for academic purposes directly tied to the classroom activity or related educational task. Exceptions to this wireless device policy are eligible through academic accommodations, individualized education programs, or with instructor approval permitting the use of a wireless device for justification related to health, safety, and/or well-being. The improper use of a wireless device in an active classroom setting is subject to disciplinary action including but not limited to; a verbal warning, temporary seizure of said device by a school official, an unexcused absence for the class in question, written communication to parent/guardian, among other elevated consequences for repeated improper use.

**No game-playing, movie-watching, e-mail, or IM’ing will be allowed in class -- doing so will result in a recorded absence for that day.**

## Blue circuit board

## Tentative Class Activity and Assignments

**Projects in Engineering**

**Select a Project to Work on**

**Weeks of January 6, 2025:**

**HW #1 will be due on January 9, 2025 (10 pts.) – List a problem to solve. Select a project. Do your research.**

**Discussion Question #1 (5 pts.) – Due on January 10, 2025**

**Learning About Project Design and Creating a Prototype**

**Week of January 13 and 20, 2025:**

**Monday: Martin Luther King, Jr. Day – January 20th (No class.)**

List items needed for project.

**HW #2 will be due on January 16, 2025 (5 pts.) – List of items needed. Is the project doable? Cost?**

**Steps involved.**

**HW #3 will be due on January 22, 2025 (5 pts.) – Submit research and data**.

**Discussion Question #2 (5 pts.) – Due on January 16, 2025**

**Discussion Question #3 (5 pts.) – Due on January 23, 2025**

**Working on a Prototype to Finished Product**

**Week of January 27, 2025:**

Finalize your prototype(s).

**HW #4 will be due on January 31, 2025 (10 pts.) –** Submit prototype and show evidence project was started.

**Discussion Question #4 (5 pts.) – Due on January 30, 2025**

**Finish Work on Project #1**

**Week of February 3, 2025:**

(Monday is an extended weekend.)

**Students will finish project #1 and make presentation to class.** **Due on February 7, 2025. (50 pts.)**

**Discussion Question #5 (5 pts.)**

**Project #2**

**Week of February 10, 2025:**

**HW #5 will be due on February 13, 2025. (10 pts.) – List the problem to solve, items needed, cost, and research.**

**Discussion Question #6 (5 pts.)**

**Project #2 Work**

**Weeks of February 17 and 24, 2025:**

Students will begin work on Project #2.

**Discussion Question #7 (5 pts.)**

**Discussion Question #8 (5 pts.)**

**Spring Break**

**Week of March 3, 2025:**

Spring Break!

**Project #2 Finished Work**

**Week of March 10, 2025:**

Students will finish work on Project #2.

**Students will finish project #2 and make presentation to class.** **Due on February 13, 2025. (50 pts.)**

**Discussion Question #9 (5 pts.)**

**Project #3 Work**

**Weeks of March 17, 24, 31, and April 4th, 2025:**

Students will work on Project #3.

**HW #6 will be due on March 17, 2025. (10 pts.) – List the problem to solve, items needed, cost, and research.**

**Students will finish project #3.** **Due on April 4, 2025. (50 pts.)**

**Discussion Question #10 (5 pts.)**

**Discussion Question #11 (5 pts.)**

**Discussion Question #12 (5 pts.)**

**Project #4 Work**

**Weeks of April 7, 14, 21, and 29th, 2025:**

(Monday, April 21st is an extended weekend.)

Students will work on Project #4.

**HW #7 will be due on April 10, 2025. (10 pts.) – List the problem to solve, items needed, cost, and research.**

**Students will finish project #4.** **Due on May 1, 2025. (50 pts.)**

**Discussion Question #13 (5 pts.)**

**Discussion Question #14 (5 pts.)**

**Discussion Question #15 (5 pts.)**