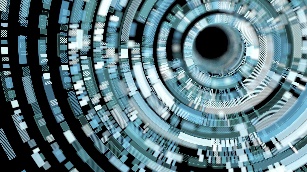
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**Course Syllabus**

**Projects in Engineering**

**Spring 2023**

**Instructor:** Ms. Susie Cunningham

**Email:** [scunningham@bsu.edu](mailto:scunningham@bsu.edu)

**Office: Elliott 007**

**Classroom: BU219**

**Office Hours:**

**Mondays: Noon – 1:50 p.m. (in Elliott 008-C)**

**5:00 – 5:30 p.m. (in BU219)**

**Tuesdays: Noon – 1:00 p.m. (in Elliott 008-C)**

**3:00 – 4:30 p.m. (in Elliott 008-C)**

**Wednesdays: Noon – 1:50 p.m. (in Elliott 008-C)**

**5:00 – 5:30 p.m. (in BU219)**

**Fridays: Noon – 1:50 p.m. (in Elliott 008-C) 5:00 – 5:30 p.m. (in BU219)**

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

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**Description:**

This course will provide students with an introduction to engineering as a profession through case studies and hands-on projects in several areas of engineering, including robotics. Students will work in teams, applying engineering principles, to build and test simple robots. Students will have the opportunity to participate in a robotics competition.

**Texts:**

Web Pages

Hand-outs

Manuals

**Course Methodology:**

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

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**Student Evaluation:**

There will be **10 discussion questions over engineering topics, 7 homework assignments,** and **1 major final project**.

**Method of Grading:**

Grades will be based on a point system.

**Points**

10 Discussion Questions 50

7 Homework Assignments 70

Major Final Project 100

**Total Points 220**

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:** Students arriving more than 5 minutes late to class are marked tardy. Students arriving 20+ minutes late 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**. Students will be allowed to ask for help from other students if they are

working on a preannounce 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.

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

**Communication:**

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 back 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 and through university resources found at <http://cms.bsu.edu/campuslife/multiculturalcenter>.

**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 accommodations can be provided. Disability Services can be contacted at 765-285-5293 or [dsd@bsu.edu](mailto: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).

## Class Participation: Unless instructed otherwise, students need to be working on items relating to the classroom homework/topic during the class time.

**Indiana Academy Unexcused Absence Policy**

It is the policy of the Indiana Academy that any absence from class is unexcused, except for illness, death in the family, college or school-related activities, and extenuating circumstances. When a student is absent from a class, the instructor reports the student absence to the Faculty Attendance Coordinator in the Office of Academic Affairs. Unless the absence is excused by a school official, it is considered unexcused. The decision as to whether an absence is excused is not determined by the instructor.

The student is expected to attend every class. The student is allowed one unexcused absence without penalty. Each additional unexcused absence will be penalized as follows: Unexcused absence (1) = 1-point subtraction from final grade. Unexcused absence (2) = 3-point subtraction from final grade. Unexcused absence (3) = 5-point subtraction from final grade. (For example, if you have an 89 final average with (3) unexcused absences your final grade will be 84). Four (4) or more unexcused absences will lead to academic and residential consequences beyond the scope of this class determined by the Office of Academic Affairs (i.e., residential groundings, parent/principal conference, and/or detention).

Any minor assignment/test/project/presentation missed due to an unexcused absence will be handled according to the late work policy of this class. A student will be given an opportunity to retake any missed assignment/test/project/presentation worth more than 20% of the final grade but will be docked a full letter grade as a result.

## Blue circuit board

## Tentative Class Activity and Assignments

**Projects in Engineering**

**Select a Project to Work on for the Semester**

**Week of January 3, 2023:**

**HW #1 will be due on January 11, 2023 (5 pts.) – Find a problem to solve.**

**Learning About Project Design**

**Week of January 9, 2023:**

List items needed for project.

Start doing research on the topic.

**HW #2 will be due on January 13, 2023 (5 pts.) – List of items needed. Is the project doable?**

**Discussion Question #1 (5 pts.)**

**Creating a Prototype**

**Week of January 16, 2023:**

**Monday: Martin Luther King, Jr. Day (No class.)**

**HW #2 will be due on January 20, 2023 (5 pts.) –** Submit prototype

**Discussion Question #2 (5 pts.)**

**Begin Work on Project**

**Week of January 23, 2023:**

**HW #3 will be due on January 27, 2023 (5 pts.) -** Show evidence project was started.

Students will work on actual project.

**Discussion Question #3 (5 pts.)**

**Week of January 30, 2023:**

Students will work on actual project.

**HW #4 will be due on September 20, 2023. (10 pts.) –** Show evidence of project.

**Discussion Question #4 (5 pts.)**

**Project Work**

**Week of February 6, 2023:**

Monday – Extended Weekend (No class.)

Students will continue working on projects.

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

**Project Work**

**Weeks of February 13, 20, 27, 2023:**

Students will continue working on projects.

**HW #5 will be due on March 2, 2023. (10 pts.) –** Project should show evidence of being ½ completed.

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

**Spring Break**

**Week of March 6, 2023:**

Spring Break!

**Project Work**

**Weeks of March 13, 20, and 27, 2023:**

Students will continue working on projects.

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

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

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

**Final Work on Projects**

**Week of April 3, 2023:**

Students will work on final write-up for project.

**HW #6 will be due on April 7, 2023. (10 pts.) –** Write-up for project.

**Sneak Preview of Project**

**Week of April 10, 2023:**

Extended Weekend – No class on Monday

Students will show class demonstration of projects.

**HW #7 will be due on April 11, 2023. (10 pts.) – Final Check Point**

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

**Weeks of April 17 and 24, 2023:**

Students will make final revisions to their major projects.

**Week of May 1, 2023:**

Students will present their final major projects.

**ALL FINAL PROJECTS will be due on May 1, 2023! (100 pts.)**