

Intro to Engineering Design (IED)

Syllabus

Bob Jones High School
650 Hughes Road
Madison, AL 35758



Teacher: J. Gaines
Email: jggaines@madisoncity.k12.al.us
Phone: 256-772-2547

I. Course Description:

Engineers make a world of difference!

Students are introduced to the engineering design process, applying math, science, and engineering standards to identify and design solutions to a variety of real problems. They work both individually and in collaborative teams to develop and document design solutions using engineering notebooks and 3D modeling software.

Are you ready to design the future?

II. Course Objectives:

Introduction to Engineering Design (IED) is a high school level foundation course in the BJHS Engineering Academy. In IED students are introduced to the engineering profession and a common approach to the solution of engineering problems, an engineering design process. Utilizing the activity-project-problem-based (APB) teaching and learning pedagogy, students will progress from completing structured activities to solving open-ended projects and problems that require them to develop planning, documentation, communication, and other professional skills.

Through both individual and collaborative team activities, projects, and problems, students will problem solve as they practice common engineering design and development protocols such as project management and peer review. Students will develop skill in technical representation and documentation of design solutions according to accepted technical standards, and they will use current 3D design and modeling software to represent and communicate solutions. In addition the development of computational methods that are commonly used in engineering problem-solving, including statistical analysis and mathematical modeling, are emphasized. Ethical issues related to professional practice and product development are also presented.

III. Classroom Expectations:

- Be in your assigned seat BEFORE the tardy bell rings
- Be prepared – bring all needed materials to class
- Be attentive – participate in class discussion, take notes
- Be productive – using class time well to complete projects
- Behave in a manner conducive to learning for all
- Follow all rules listed in the BJHS student handbook and the Madison City Schools Code of Conduct
- **Be involved** – in your own learning and in your group assignments

IV. BJ Grading Policy:

Grades will be calculated according to BJHS policy:	90%-100%=A
	80%-89%=B
Major tests/Projects will be 70%	70%-79%=C
Lab/Daily work/Homework/Quizzes will be 30%	65%-69%=D
	64% and below=F

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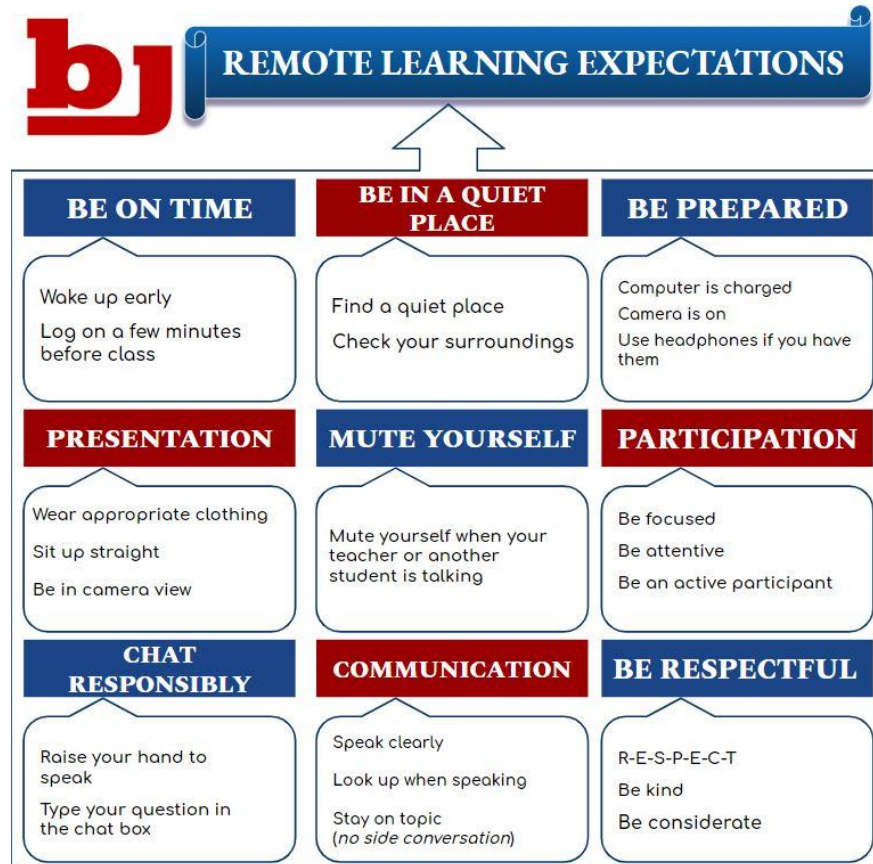
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VI. **Virtual Learning Expectations**

The graphic below states expectations for the remote learning environment. These are not necessarily strict policy, but are considered best practices and will be used as general guidelines for this class until we return to the classroom. Failure to adhere to the expectations may result in missed material or instructions that could negatively affect a student's grades. If there are any issues, please contact me. I understand the remote learning environment presents unforeseen challenges and conflicts. ***I am will to work with any student who will communicate with me about any conflicts or barriers to success.***



V. **BJ Make-up Test Policy:**

Make-up tests are only allowed for excused absences. You will have two weeks to schedule a make-up test before or after school or during patriot path science make up tests. Students are responsible scheduling the make-up test with the teacher.

VI. **Text and Other Required Reading:**

Reading will be provided by teacher either online or as a hard copy.

VII. **Materials and Supplies Needed:**

- Pens
- Pencils
- Scientific Calculator
- 3-Ring Binder (or other organization system)

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18 – WEEK PLAN	
Week 1	Unit 1- Design Process/Design Skills
Week 2	Unit 1- Design Process/Design Skills
Week 3	Unit 1- Design Process/Design Skills
Week 4	Unit 1- Design Process/Design Skills
Week 5	Unit 1- Design Process/Design Skills
Week 6	Unit 2- Assembly Design
Week 7	Unit 2- Assembly Design
Week 8	Unit 2- Assembly Design
Week 9	Unit 2- Assembly Design
Week 10	Unit 3- Thoughtful Production Design
Week 11	Unit 3- Thoughtful Production Design
Week 12	Unit 3- Thoughtful Production Design
Week 13	Unit 3- Thoughtful Production Design
Week 14	Unit 4- Making things Move/Final Project
Week 15	Unit 4- Making things Move/Final Project
Week 16	Unit 4- Making things Move/Final Project
Week 17	Unit 4- Making things Move/Final Project
Week 18	Unit 4- Making things Move/Final Project

- Dates subject to change.