

**Martin L. Nesbitt Discovery Academy
Introduction to Engineering & Design
2020-21 Course Syllabus**

Instructor: Mr. Adam Bachmeyer
Email: steven.bachmeyer@bcsemail.org
Phone: 828.271.4521



Course Description: Throughout the PLTW Engineering course, students engage in open-ended, industry-standard, engineering-based problem solving. They learn the engineering design process, and become proficient in the very same industry-leading technology and software used by the world’s top companies! Students dig deep as they apply the engineering design process, principles, and standards, developing their creativity and critical thinking skills along the way. They work both individually and in teams, using math and science concepts, to design solutions to a variety of real-world problems. Students will master graphic communication skills (such as concept sketching and 3D modeling), STEM research techniques, and how to effectively document and communicate their engineered solutions and ideas.

Course Access and Texts

I cannot express the importance of my ONLINE classroom in **Canvas**. **ALL** course Texts, Lessons, Assignments, Quizzes, Announcements and more will be found in the PLTW IED Canvas course. This website is to be used **DAILY** by students to access course material, and to submit assignments for grading.

I **HIGHLY** suggest that parents record their child’s login information in order to conveniently check-in on canvas to ensure their child is keeping pace with the course in order to excel. I have an introductory module on Canvas designed to include parent participation as to how to use the PLTW IED canvas course successfully. The first assignment of this course is for students and parents to electronically sign this syllabus and upload it to Canvas successfully.

PLTW IED Content and Learning Objectives:

Unit 1 Design & Problem Solving: design process; documenting in an Engineer’s Notebook; graphical design skills; computer modeling.

Unit 2 Assembly Design: Develop models and simulations to design and join parts together. Improving design materials and testing designs.

Unit 3 Thoughtful Product Design: life cycle analysis, systems thinking, and ethical considerations in design.

Unit 4 Making Things Move: reverse engineering, mechanisms, moving & functioning models

Course Materials Needed: See my staff website for an expanded description.

1. **Engineering Notebook:** A bound, graph paper-filled composition book. (even better an actual “Engineer’s Notebook via Amazon). This is a crucial, and mandatory component of the course!
2. **Plenty of Mechanical Pencils, Drawing Pencils (contain B & H leads), & Erasers.**
3. **Additional recommended design tools:** ink pens, SI/SAE Ruler, Compass, Protractor, Small Scissors, Glue Stick, clear tape, colored pencils.

Classroom Expectations: BE RESPECTFUL. BE RESPONSIBLE. BE READY

Attend scheduled class lessons and activities on time, whether they are remote or on campus, and be alert and prepared to learn; this means:

1. Have your 1-to-1 device charged and ready and be signed into the Canvas LMS.
2. Have your Engineering Notebook with you, complete and ready for the next entry.
3. Know what the objective for the day is and ensure you have completed the prior assignment.

Grading Policy

MLNDA follows a nine-week grading period. Parents may monitor student progress by accessing the Parent Portal in PowerSchool. Teachers will provide students and parents with progress reports midway in each nine-week grading period. Report cards will be printed and distributed to students within a week of the end of each grading period. Final grades are determined based on calculations from two nine-week grading periods and a final exam.

Grading Scale:

90– 100: A
80 – 89: B
70– 79: C
60 – 69: D
0 – 59: F

GRADED CATEGORIES

Engineer's Notebook: 30%
Projects and Activities: 30%
Tests & Quizzes 30%
Performance: 10%

Attendance Policy

Students are only allowed five (5) absences per each semester. To be counted present in a class, the student must be in class for 2/3 of the class period. Students are responsible for making up any days past the allotted 5 absences per semester. For information about excused and unexcused absences, please refer to the student handbook.

Make-up Policy

The following procedure will apply to all courses:

After any absence, it will be the student's responsibility to check with his/her teacher outside of class time for work missed and to schedule a time to make up all work including tests.

Projects and work assigned before absences should be turned in as soon as student returns to school.

If a student is absent for one (1) day, he/she will have two (2) days to make up homework, missed assignments and tests assigned during his/her absence.

If a student is absent two (2) or three (3) days, he/she will have four (4) days to make up homework, missed assignments and tests during his/her absence.

If a student is absent four (4) or more days, he/she will meet with each teacher for an individual arrangement for all make-up work. For more information on attendance make-up if absent for more than six (6) days, please refer to the student handbook.

Nesbitt Discovery Academy follows PBIS (Positive Behavioral Interventions & Supports) guidelines in accordance with the US Department of Education. All students are expected to:

Signatures

By signing below, I agree that I have read the course syllabus and classroom policies as outlined above:

Parents please initial here: _____ I have viewed the PLTW LMS and can login there to check my child's progress.

_____ I have viewed the supplied course outline and "Classroom Norms" section on Mr. Bachmeyer's website.

Print Student Name

Student Signature/Date

Print Parent/Guardian Name

Parent Signature/Date

Parent/Guardian email address

Parent/Guardian Cell Phone Number