

Teacher: Jason Ryan (Science), Henry Gleamza (CTE), Rebecca Diorio (CTE)

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Office: 630-420-6530 Department Chair: Melissa Oskroba

## District Mission

To educate students to be self-directed learners, collaborative workers, complex thinkers, quality producers, and community contributors.

## Department Mission

In partnership with the community, Career and Technical Education (CTE) provides students with real-world experiences. Students will discover and explore their passions which will lead to career opportunities and the development of life skills.

## Course Description

Research and Design is a course for the student who wants to explore engineering as a career. This course uses STEM (Science, Technology, Engineering, Mathematics) project based assignments. The student will learn the physics of how simple machines work through a series of hands-on activities and projects. Problem solving is utilized to overcome problems of design, development, production, and the testing of a product. Topics covered are from both applied technology and science, which could include but not limited to; robotics, pneumatics, hydraulics, CAD (computer aided drafting), optics (including lasers), mechanical, electricity and magnetism. Students will work in design teams and present their achievements to the class in various competitions. May be used for Science credit, or split between Science and CTE. – 2 Science credits – Co requisite: Algebra 2

## Course Textbook & Resources

Research and Design Canvas course, project module folder.

## Course Standards & Weights

Essential Understandings

- Students understand how to design and create with inventor (Fusion 360)
- Students understand the design loop with emphasis on multiple prototypes
- Students are cognizant of due dates and timelines

## Units of Study:

Semester 1

- 3D Design (Autodesk Inventor)
- Shop safety (machine tools)
- Thin Lens equation (Pinhole Camera)
- Buoyancy (Cardboard Boats)
- Lift and Drag (semester final project)

Semester 2

- Projectile Motion (Launchers)
- Remote Control (Semester final)

## Grade Calculation Definitions

Students will be provided with multiple and varied opportunities to demonstrate mastery of learning standards. Although varied in content, all courses will include examples of practice and evidence of learning:

- **Evidence of Learning:** Tasks or assessments where feedback is provided to the student and considered evidence of a student's level of proficiency on a given standard or skill. This may include, but is not limited to formative tasks that provide insights on areas for growth as well as summative tests, projects and/or performances.

**Practice:** Tasks that are connected to course standards and learning targets that promote the development of

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## Grading Disbursement

skills and/or knowledge that will be assessed, but where feedback is not provided. This may include, but is not limited to daily readings, note taking, practice exercises and tasks essential to the learning process.

Semester grades for all classes (prior to the final exam) will be calculated by a weighted average. As part of the calculation for the overall semester grade, final exams/projects will not exceed 15% of the semester grade.

A = 100-90%, B = 89-80%, C = 79-70%, D = 69-60%, F = 59-0%

Semester Grade:

- Coursework = 85% (Evidence of Learning = 90%, Practice = 10%)
- Final Exam = 15% *Final Exam Format:* Final Project (Remote Control)

## Grading Practices

Grades communicate each student's progress toward mastery of goals/standards for the course.

- Infinite Campus Symbols/Comments:
  - A score of "Missing" (M) will indicate an assessment has not been turned in and the comments section will include a specific date by which students can still submit. After that date, a zero (0) will be recorded.
  - Any score may also have a comment indicating the due date, turned in, late, reassessment eligibility including the timeline and/or reassessment final scores.
  - A zero indicates that no attempt was made by the student. If a legitimate attempt is made on an assessment and practice work has been completed in a consistent and timely manner (*completing 80% of practice listed in Infinite Campus.*), a score of 50% will be the lowest possible grade.
- Late Work:
  - Evidence of Learning work submitted after the original due date cannot be penalized more than a total of 10% and can be submitted for credit up to 5 days after the original due date.
  - Practice Work is not accepted for credit after the due date.
- Other:
  - No extra credit will be issued.

## Academic Integrity Code

District 203 students are challenged to address the academic process enthusiastically, diligently, and most importantly, honestly. It is the responsibility of our students, teachers, and administration to uphold the fundamental academic values of honesty, responsibility, fairness, respect, and trust. The integrity of our district's academic programs is built upon these principles.

Academic integrity violations include cheating; plagiarism, self-plagiarism or copy infringement; obtaining or providing an unfair advantage; falsification of documents; unauthorized access to records; and inappropriate collaboration, whether intentional or unintentional. The classroom teacher and administration will collaborate and exercise professional judgment in determining academic integrity violations.

## Reassessment Policy

The purpose of reassessment is to allow students to demonstrate mastery of course standards in which they remain deficient. Higher reassessment grades will replace the original assessment score, but will not exceed 80%.

- Practice work is not eligible for reassessment.

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## Student Communication

- Evidence of Learning work with a score below 80% is eligible for reassessment if students have:
  - Demonstrated readiness through timely and consistent completion of practice work. *This means completing 80% of practice listed in Infinite Campus.*
  - Completed designated learning experiences as assigned by the teacher.
- Timeline: Reassessments must be completed 5 school days after the student receives feedback (unless otherwise determined by the instructor).
- Project-Based Assessments that include multiple opportunities for feedback and improvement in the assessment process will represent multiple attempts and be considered a reassessment

## Additional Resources for Support

- You are encouraged to communicate with their teacher regarding questions.
- Teachers make every effort to respond to emails and phone calls within 24 hours during the workweek.
- The best way to communicate with teachers is through email; however, if you haven't received a response within 48 hours, please resend the email or call their voicemail. Your email may have been filtered.
- You can make an appointment with your teacher should you need additional instruction or support in learning material.
- Extra time is allotted throughout the year after school depending on students needs.
- WIN sessions are available for extra time.
- You can drop in to work with a peer tutor during lunch periods or before school in the Literacy Center.

## Parents or Guardians Partnership

Naperville North believes in a collective partnership with parents/guardians which provides students the best opportunities for success.

Some ways parents/guardians can support their student's learning are:

- Actively check Infinite Campus for their student's grades.
  - Infinite Campus is a tool to progress monitor student work until the final course grade is posted.
  - Monthly progress grades are posted and represent the current grade of a student in the course at that moment in time.
- Discuss missing assignments, reiterate due dates, help organize folders, materials, assignment notebooks, and review upcoming projects and assessments.