

D203 Profile of A Learner

Profile of a Learner guides our efforts in creating educational experiences that are relevant, engaging, and impactful and outlines the key competencies and descriptors our community has identified as essential for our students: Adaptability, Communication, Critical Thinking, Learner's Mindset, Global Citizen.

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

This two semester course covers essential concepts in electronic circuit theory and application. The course is designed for those students who have an interest in technology and engineering. The course begins with an introduction to electrical properties, electrical quantities, and electronic component behavior - components such as resistors, switches, capacitors, diodes, LEDs, transistors, and the 555 timer will be studied. Next, circuit analysis and design are studied through Ohm's Law and Watt's Law with application to series, parallel, and combination circuits. Follow-on topics include the study of magnetism, electromagnetism and related AC circuit behavior. Lastly, students study the design and operation of diodes, transistors, digital electronics, and microcontrollers (Arduino) and their applications in more complex semiconductor and digital circuits. Throughout the year, students will learn to use various types of electronic laboratory equipment and processes including power supplies, digital multimeters, function generators, oscilloscopes, breadboarding, prototyping, and soldering while performing laboratory experiments and engineering challenges that accompany the studied topics. Students will also experience the engineering design process which includes circuit design, modeling/simulations, fabrication, and troubleshooting. For many students, this will be their first exposure to engineering, design, and troubleshooting. The course will challenge your tenacity, your ability to think complexly, and your ability to solve engineering challenges - all in a collaborative, nurturing, and supportive environment.

Course Textbook & Resources

All resources are available through Daily Agenda and Canvas
 Software for the course is available on student computers in the lab. Students are encouraged to use the versions on those computers instead of installing the software on personal computers.

Course Standards & Weights

Safety:

I can identify, interpret and perform necessary safety precautions when using tools and materials.

- Equipment and Materials. I can identify, interpret, and perform essential working processes for tools, and materials.
- Disciplinary Literacy: I can effectively communicate using Electricity, Electronics, and Engineering specific content knowledge.

I can use the correct Electricity, Electronics, and Engineering vocabulary to effectively communicate ideas, concepts, and knowledge.

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I can read and draw Electricity and Electronics specific diagrams. I can measure and interpret electrical quantities.

The Engineering Design Process: I can effectively apply the Engineering Design Process to design, fabricate, problem solve, troubleshoot, and persevere.

Units of Study:

Safety

Unit 1: Introduction to Electricity and Electrical Quantities

Unit 2: Engineering Notation, Resistor Color Codes, and Digital Multimeters

Unit 3: Ohm's Law, Watt's Law, Breadboards, and Power Supplies

Unit 4: Electronic Components

Unit 5: Soldering

Engineering Challenge #1

Unit 6: Multiload Circuits and Circuit Analysis

Engineering Challenge #2

Unit 8: Magnetism and Electromagnetism

Unit 9: Alternating Current

Unit 10: Semiconductors - Diodes

Engineering Challenge #3

Unit 11: Semiconductors - Transistors

Digital Electronics

Engineering Challenge #4

Unit 12: Arduino

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. In this course, specific examples include: Engineering Challenges.
- **Practice:** Tasks that are connected to course standards and learning targets that promote the development of 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. In this course, specific examples include:

Grading Disbursement

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 (will not exceed 10%) = 10%
- Final Exam = 15%
 - *Final Exam Format:* Test

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 85% 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 within 5 school days after the original due date.
 - Practice Work is not accepted for credit after the due date.
- Other:
 - No extra credit will be issued.

D203 AI Belief Statement

At Naperville North High School, we strive to build a learner's mindset in all students, developing qualities such as adaptability, communication, critical thinking, and global citizenship. Generative Artificial Intelligence (AI), offers new opportunities to engage with important technology relevant to the future that also raises significant educational considerations. AI tools provide unique ways to engage students in the learning process, hence we encourage our staff to guide students in using AI responsibly. Teachers have the authority to establish guidelines for AI use in their classrooms, setting clear expectations for how AI can be used on learning tasks. Concurrently, we recognize that reliance on AI risks replacing genuine student engagement and original thought, undermining the attributes we aim to cultivate. Striking a balance between leveraging AI tools effectively and maintaining educational standards is crucial to the learning experience of each student.

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.

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Technology Expectations

Academic integrity violations include cheating, plagiarism, self-plagiarism or copy infringement, obtaining or providing an unfair advantage, using a writing service and/or AI in place of original work unless specifically authorized by staff, 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.

Please refer to the NNHS Handbook for more information.

- **Cell phones:** Students will be expected to store their cell phones in a phone holder or designated classroom location throughout each class period as communicated by each teacher. Cell phones should not be seen or heard in the classroom setting. Appropriate use of cell phones is allowed during passing periods, during study halls, at lunch, before and after school. Please note that cell phone use is strictly prohibited in locker rooms and restrooms at all times.
- **Ear buds and headphones:** The use of ear buds and headphones is strictly prohibited in the classroom unless permission has been granted by the teacher. Ear buds and headphones should not be seen or heard in the classroom setting. For safety reasons, students should also be able to hear announcements, alerts, etc. at all times and, therefore, students are permitted to use one ear bud or headphone during passing periods, at lunch, before and after school.
- **District issued Chromebooks:** Students are required to use their District issued Chromebook and will not be permitted to use personal laptops or devices in the classroom setting. Student personal devices are not protected by district systems and put student safety and the safety of our network at risk. Additionally, student personal devices are not enabled with applications and programs necessary for administration of state and AP assessments.

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 85%.

- Practice work is not eligible for reassessment.
- Evidence of Learning work may be eligible for reassessment. Refer to the chart below for eligibility:

☐ The assessment included multiple opportunities for feedback and improvement in the process for the final product OR formative assessments are aligned to standards, allow students to practice in the same assessment format, and gain feedback for improvement before the summative assessment.	☐ There was timely and consistent completion of practice work and formative assessments. ☐ A one-time performance on an assessment does not reflect the student's level of proficiency leading up to the assessment. ☐ Summative assessment score is below 85%.
Not eligible for reassessment	Eligible for reassessment if all three statements above are true.

Reassessment Parameters:

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Student Communication

- The reassessment opportunity will require designated learning experiences that demonstrate readiness as assigned by the teacher.
- Reassessments MUST be completed within 5 school days of the student receiving feedback unless otherwise determined by the instructor. The reassessment deadline should be communicated in an IC comment.
- The final reassessment score will be capped at 85%.

Additional Resources for Support

- Students are encouraged to communicate with teachers 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 utilize WIN or make an appointment with your teacher should you need additional instruction or support in learning material.
- You can attend peer tutoring in the Lit Center during lunch periods to receive extra support or to work on assignments.
- 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.