Course Name: Honors Digital Electronics　　**Teacher: Eugene Chou (she, her, hers)**
Learning Platform: Canvas, Google Drive　　**Grades can be found on: Canvas**
Textbook name: Digital Electronics
Teacher email: choueugene@dublinusd.org　　*Please allow 48 hours (2 school days) for response.*

I. Introduction

It is a great privilege to be teaching you and I am looking forward to an exciting year! Please read all the information attached to this syllabus and feel free to reach out to me with any questions.

Digital Electronics (DE) is a high school level honors course that exposes students to some of the foundations in circuit design. Digital electronics is the study of electronic circuits that are used to process and control digital signals. In contrast to analog electronics, where information is represented by a continuously varying voltage, digital signals are represented by two discrete or logic levels. This distinction allows greater signal speed and storage capabilities and has revolutionized the world of electronics.

DE will help students develop skills and understanding of course concepts through activity-, project-, and problem-based (APPB) learning. APPB learning challenges students to continually hone their interpersonal skills, creative abilities, and problem solving skills. It also allows students to develop strategies to enable and direct their own learning, which is the ultimate goal of education.

As this class is project-based with hands-on learning, you will be using many tools, equipment, and supplies in the classroom. Please understand that we will review safety information before each use, but you will be working with equipment that may cause injury. Throughout the year, we may also host guest speakers or industry judges that you will interact with. If you choose to connect with these industry professionals to thank them or ask followup questions via email, please be sure to discuss this with your parents. You will also be required to use the internet to submit & access assignments, create an online portfolio of your work, and navigate online resources, so it is important that you have a good understanding of digital citizenship and keep personal matters separate from academic affairs.

II. Materials

Website: All students and parents will have access to course materials via the learning management system, Canvas. All course documents will all be available in **Canvas** and **Google Drive**. Please contact your teacher for access. Grades will be updated approximately biweekly.

Required Materials: Students will need the following material for success in this course.
- Engineering notebook for taking notes, doing practice problems, and making sketches
- Pens & color highlighters
- Your assigned DE Toolbox with all inventoried contents
- Cell phone to take detail pictures of circuits during projects
- Scientific calculator

Recommended Materials: In addition to the above items, it is encouraged that students have access to the following items at home to be able to complete their work with ease.
- Computer or laptop with internet access
- Cell phone to record video and audio

III. Behavior Expectations

Every Gael CARES…We are:

- **Considerate** - Creating a classroom environment that will allow all students to learn properly is very important to me. A learning environment is a place for us to accept challenges, take risks, and learn from mistakes made. You will be expected to be respectful to all peers, adults, and teachers by keeping words and action positive and productive.
- **Accountable** - Showing up for yourself and your peers is the best way to demonstrate your commitment to accountability. You will be expected to be prepared to learn and do your best to be present for each task. This can include putting away cell phones, not wearing earbuds or sunglasses, and prioritizing class time in order to be able to fully contribute to each task.
- **Responsible** - You will be using a lot of equipment throughout the year, some which you may not have used before. Only use materials and equipment when instructed to, and follow instructions for safe handling to ensure your safety and the safety of others. Understand the great responsibility you have in utilizing and taking care of the equipment that you have been given to use.
- **Ethical** - You should value your work and the work of others. Being honest about your academic work demonstrates respect for yourself, your teachers, and your peers. Use the resources available to you to ensure learning instead of just making a grade.
- **Safe** - Following teacher instructions and being aware of your impact on your surroundings will help to keep yourself and everyone around you safe. Keep food and drinks away from electronic equipment, and check that your peers are also following safety protocols.

Behavioral Consequences

Failure to be a respectful, active part of our class may result in any of the following:

1. Verbal warnings
2. Email or call home, parent meetings, and referrals to the assistant principals
3. Financial responsibility for materials/equipment damaged
4. Administrative consequences when applicable
5. Removal from classroom

IV. Code of Conduct

Dublin High School values personal integrity. We rely on academic honesty and responsibility to support intellectual growth and create a fair learning environment. We recognize that the pressure to obtain good grades can lead students to panic...and cheat. We firmly believe that cheating denies the value of education, damages the ethical character of the individual student, and undermines the integrity of our school community. We expect students to display academic integrity and honesty in all work. All incidents of academic dishonesty will be reported to DHS administration: please see the Gael Force Guide for consequences. In addition, note the following clarification on collaboration and academic dishonesty below.

Collaboration and Academic Dishonesty Examples

The nature of all projects-based classrooms is a strong focus on teamwork and collaboration. Even when not explicitly working with a team, you are encouraged to check in with your peers and provide help if you are able. Below are common examples of appropriate and inappropriate ways to collaborate.

Appropriate Ways to Collaborate & Get Help/Info	Situations Considered Academic Dishonesty
For questions that I am not sure the answer to, I search online and ask my peers for help. I read through additional content as needed and cite my sources properly, even if the source is an "interview" with a classmate.	Since I am unsure of my understanding of the material, I ask a classmate to send me their solutions by sharing a document, emailing me their confirmation, texting me a photo, etc. I read through their answers and then write my answers based on theirs.
For team projects, the group agrees to break responsibilities into various parts and **each** person is assigned a **fair** portion to complete in order to complete the project as a whole.	One or two people on a team make all the decisions and complete everything on their own, either because the other team members are not competent to get it done or too lazy to contribute.
For circuit demos, I build my simulation and breadboard but have trouble finding my errors so I ask to meet with a peer online. During the call, I share my screen so that we can discuss what areas I think might be an issue. I use their verbal prompts to help me troubleshoot my circuit.	I can't get my circuit demo to work so my classmate offers to send me their Multisim file to view. I open their circuit file on my computer and use it as a guide to re-build my circuit. I hand over my breadboard to my classmate and they fix my mistake for me.
For practice problems that I need help with, I review them and write down next to them any notes/equations that I think would be used. Then I ask to meet with a classmate to explain **using words** or **another example** on how to complete the problem on my own. My classmate offers to listen as I explain how I did the problem on my own and gives me feedback.	For practice problems that I need help with, I ask my classmate to see their assignment so I can work backwards from their correct answer. They take a picture of their work and send it to me. I write my own version down and submit it.
For FRQs, I am sure to have any resources that I may need ready to use and paraphrase all content into my own words. Then, I carefully cite all sources that I have gathered information from or referenced in any way.	I ask ChatGPT the question, then copy and paste whatever I need to into my answers.
I know a test is coming up, so I ask a few classmates to form a study group. Together, we create a shared document to build as a study guide and we meet before the exam to review any questions we have.	I had a huge project for another class so I stayed at home to study for the test. I call my classmate later that day to ask for help and they review all the topics on the test with me based on what they saw on the test that day.

V. Essential Standards

Digital Electronics is one of the specialization courses in the Project Lead the Way high school engineering pathway and an elective course for students in the Engineering and Design Academy. Students should have completed POE and be concurrently enrolled in college preparatory mathematics. The course applies and concurrently develops secondary level knowledge and skills in mathematics, science, and technology. To be successful in DE, it is important for students to **actively participate in class**. Our class time is precious as students have easy access to peers and teachers for support. Being engaged in assigned tasks and asking clarifying questions will help students solidify their understanding for improved performance on projects and assessments. Students will employ engineering skills and scientific concepts when creating the solutions of engineering design problems. Students will also develop their technical writing and communication skills through the documentation of their work and discussion with their peers or adults. By the end of this course, students will be able to:

- Understand the basics of **Electricity and Energy** in the design of electronics
- Complete a basic **Circuit Design** from a given set of constraints
- Use **AOI Combinational** Logic in Circuit Design
- Apply basic **Sequential Logic** to Circuit Design
- Understand the basic steps involved in **Electronics Fabrication**
- Implement a **State Machine**

VI. Academic Support

Ms. Chou is available by appointment during lunch on Mondays, Wednesdays, and Fridays. If you need additional help beyond what I can provide, please use this link to access the [Academic Resource Center (ARC)](#). Please note that we will do our best to reply to email within 48 hours, but emails received on Fridays/weekends may not be returned until the following Tuesday. We value our weekends and want you to do the same.

VII. AI Use Expectations:

In alignment with Dublin Unified School District's Board Policy and Administrative Regulation on Artificial Intelligence (AI), this course promotes the ethical, responsible, and effective use of AI tools. All of our PLTW courses may require students to use generative AI to support brainstorming and initial research, assist in content review and exploration of topics, and foster critical thinking through AI interaction. For example, CS students may use Copilot to create specific sections of code, compare coding syntax, or debug code that is not working as intended. ***It is important to remember that AI is a tool that can enhance learning and should NOT replace student learning, creativity, and comprehension.*** AI must not be used to write entire documents, write entire programs, or directly solve assignments. **By DUSD Board Policy, AI-generated content must not exceed 15% of any student submission.**

Expectations for citation practices will be reviewed in class, but usage of direct wording generated by AI in their writing, creation of media (i.e. slideshows, videos, etc.), or paraphrasing of ideas or content should be identified with quotation marks and correctly cited in APA citation format.

Our AI interactions are also designed to comply with our educational standards and privacy policies. Students shall not provide information to AI such as student name, birthdate, email, or other identifiable or sensitive student information, so please have a conversation with your student about the use of any AI tools at home and their use of data.

VII. Grading Criteria

a. At DHS, we use grades, comments, and conferences to give you feedback about your performance in this class. We expect you to use the feedback to celebrate areas of success and analyze areas that need improvement. The teachers of this course believe that grades should be accurate, bias-resistant, motivational, and skills-based. Grades are assigned using the DUSD grading scale.

b. Following the APPB method, students will have multiple attempts to demonstrate mastery of content starting with discovery based activities, labs, and conclusion questions before summative tests and projects. As such, no test retakes or assignment redos are assigned or accepted.

c. No extra credit or bonus points will be offered (AR 5121).

d. Work will be weighted by the categories listed below with no single project or assignment worth more than 30% of a student's overall grade. (AR 5121).

e. All assignments or assessments reasonably attempted receive a minimum of 50%. Work completed **dishonestly** (plagiarized, copied, cheated, etc.), **missing** assignments, and assignments **not given a reasonable attempt** will be posted as an "M" in the gradebook and calculated as a **zero**.

Grading Categories

Projects (35%)

● Projects will usually consist of design problems in which you will be able to use what you have learned to solve an engineering problem.

● You may be expected to work with groups to successfully complete an assignment and are expected to be able to work with **anyone assigned to you**. Collaboration and in-class productivity in projects will be a portion of each project score.

● All projects are scored against a provided rubric and assessed based on proper documentation as well as problem solution. Successful projects are ones that correctly apply and communicate the design process with well-organized, complete documentation *regardless of solution performance*.

● Project work may be done in class and outside of class spanning across a few days to weeks.

Activities & Practice Problems (25%)

● Individual activities which demonstrate your understanding will be required in each major topic area.

● Practice problems will be assigned to practice the mathematical application of concepts taught in class.

● Successful completion of projects and high performance on assessments are directly impacted by the accurate and high quality completion of activities and practice problems. These assignments are expected to be *self-produced, done thoroughly for understanding, and neatly written* for review.

Engineering Notebook (5%)

● You are expected to keep a proper engineering notebook, which will be checked at the end of each unit of study and graded on completeness and neatness.

● Expectations for your notebook will be reviewed briefly in class. Students that are not familiar with notebook guidelines from prerequisite courses should seek the instructor for additional help.

Online Portfolio (15%)

● You will create/update your own portfolio online highlighting your work and skills learned throughout the year. In addition, career exploration such as guest talks and field trips will also be logged.

● *As these portfolios may be used after your time at DHS they should be created using your own personal accounts.*

● Portfolios will be graded on completeness, organization, and overall appeal.

Assessments (20%)

● One to two assessments may be given during each section varying in point value and length. These assessments may include written responses, online questions, and practical demonstrations.

● One midterm exam will be given at the end of semester 1 covering all the material from semester 1.

● One final exam will be given at the end of semester 2 covering all material from both semesters 1 & 2.

IX. Homework:

Purpose and Type - There is rarely explicitly assigned homework, and instead homework consists of self-guided work based on what is not completed in class. This may include solving practice problems, note-taking/studying, building circuits, or completing documentation for projects & activities. Students will be expected to practice and demonstrate the lesson concepts on their own and in teams.

Expected time for completion - Work at home should average to about 20 minutes each day (100 minutes per week). Depending on how productive class time is used and how much progress is made, times can vary greatly day to day. Note that during projects extended times may be needed depending on what you design and/or what roles team members have.

Where is work listed - All assignments will be posted in Canvas and Google Drive. All students will have access to this within the first week of school.

If homework is <u>regularly</u> taking longer than 20 minutes, students should seek help from the instructor for how to complete more in class.

X. Late Work & Absent Work Policies:

Late Work Policy - Timely completion of activities and practice is essential to the understanding of the concepts.
If students are not able to keep up with the work, they should contact their teacher by email or in-person immediately for help and attend direct intervention sessions.
Late work will be accepted within **two weeks** of the required deadline for **half credit**.

Absent Work Policy - If students are absent, they should contact the teacher by email immediately to arrange submission of absent work.
Students that are absent the day an assignment is due must submit the assignment the day they return for full credit. Students that are absent for work days may extend their deadline by the same number of days absent for full credit. Below are some examples to help, assuming we are following a standard MWF block schedule.
- An assignment is due on Monday, but the student is absent on Monday means that the assignment is now due on Wednesday. (absent on due date, due the day of return)
- An assignment that is due on Friday was started on Monday, but the student was absent on Monday means that the assignment is now due on the following Monday. (absent on one work day, due one day later)

Absent Test Policy - If students are absent for a test, they should contact the teacher by email to schedule a make-up.
- If students know that they will be absent for a test because of an appointment, travel, or sporting event, they should arrange for the test to be taken prior to the absence.
- If the absence is unplanned, the student will have 48 hours upon their return to school to take the exam either during their Gael period or after school, depending on what they arrange with the teacher.
- If a student has more than one unplanned absence on a test day within the school year, the teacher will email the parent and notify counselors/administration of the pattern for monitoring.

XI. Statement on Observation of Religious Holidays

As a diverse community we recognize that our students come from a variety of traditions and that there may be occasions when observation of a holiday conflicts with school. Consistent with our value of respecting and celebrating all our community, we are committed to working with students to extend or reschedule work. In order to receive accommodations, students must inform their teacher in writing, in a timely manner, preferably at the beginning of the quarter.

XII: PLTW Engineering Courses - Technology Use Agreement & Guidelines

Our engineering and computer science classrooms have specialized laptops and equipment in order to provide students with high-level curriculum. Because of the need created in updating and utilizing certain software programs, student accounts have been given a higher level of administrative rights on the computers in our classes compared to other student-use computers on campus.

In order to maintain equipment in working order, we will expect students to be aware of these additional guidelines and consequences for technology abuse. These guidelines apply to all classroom equipment.

Technology & Equipment Use Rules and Guidelines
- Students should **report any damage** or unnecessary changes to the instructor **within the first few minutes of class** or as soon as it is discovered. Otherwise, they may be held responsible for damages.
- Each student should be using their own login and saving work to their hard drive and **backing up to their network drive during each class**.
- Students should not alter any software (including downloading new programs, images, files, etc.) or use the programs on the laptop in any way that does not specifically support the class curriculum. This includes but is not limited to interfering with the school/district network, hacking of any form, utilizing the network to access other computers, and accessing/altering files not belonging to them.
- Students should be careful **not to damage the physical laptop when moving or using**. This includes but is not limited to removing/swapping of keys, setting of heavy objects on it, drawing or defacing any part of the machine & peripheral items.
- Students should not touch or use any equipment that they have not been specifically given permission to use. This includes but is not limited to touching other students' projects, playing with or using equipment set out for other classes, removing or borrowing equipment without permission from the teacher.
- Students are expected to put their laptops & mice in the designated cart location and plug it in to charge after each class. At no time should the laptop be taken out of the classroom, except with explicit permission from the teacher.

Consequences for Abuses & Damage - Parent contact and referral to admin for incidences of abuse & damage.
Students who willfully abuse or damage classroom technology or equipment are subject to progressive disciplinary action. This may include parent contact, administrative referral, financial responsibility for repairs or replacement, detention, and suspension from class. The cost of repair or replacement will be determined by the classroom teacher, administrative staff, and the IT department. All disciplinary decisions will be made by school staff and are considered final. We understand that financial circumstances vary, and we are willing to work with families experiencing financial hardship to accommodate any resulting liability.

The most important thing to remember is that the use of technology and equipment in our classrooms or issued for home use is a privilege that can be taken away if we cannot trust students to act properly. Students should respect the privilege that they have been given and use all materials respectfully.

Please acknowledge that you have read and understood this technology use agreement electronically with the Syllabus Acknowledgement. Thank You!

Dublin Unified School District
Grades 6-12 COURSE SYLLABUS
Education that inspires lifelong learning

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Please allow 48 hours (2 school days) for response.

XIII: Student and Parent Acknowledgement - Please Sign Electronically!

Please use the following links to acknowledge that you have read and understand the expectations for this course.

Students - Click HERE! to sign the Student Agreement	Parents - Click HERE! to sign the Parent Agreement