North Monterey County High School / 2021-2022

Design Concepts – Math 2

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Prep Period: 2



Course Description:

Design Concepts, DC, is the introductory course in the Physics and Engineering Pathway. It is a requirement for the Robotics Capstone course. Students must earn a 'C' or above to advance to a Concentrator.

Design Concepts for Industry is the second course in an integrated series of math courses at a school where every student is engaged in either an advanced manufacturing or commercial construction pathway. This course is designed to investigate and use patterns, modeling, and conjectures for building student understanding and competency in mathematics. In the context of algebra and functions, the course develops the ability to recognize, represent, and solve problems involving relations among variables. A wide variety of numerically generated graphs, as well as the specific algebraic details of exponential and quadratic functions will be studied.

Geometrically we develop visual thinking and the ability to construct, reason with, interpret, and apply mathematical models of pattern in visual and physical contexts. Recognition and measure of variation along with visualization and interpretation of distributions will be the focus. Students are expected to learn through collaboration, collection of data, experimentation, and conjectures; developing skills required for all eight of the Common Core Standards of Math Practice and making consistent connections with scientific and career technical topics through the lens of literacy and communication.

Students will utilize investigations found within the CPM Core Connections College Preparatory Math II materials. They will participate in cross-curricular as well as school-wide projects. These will utilize a variety of technologies and equipment, involve participation in a rich array of small and large group discussions, and require problem-solving with rigorous mathematics set in real-life scenarios.

Course Expectations:

This is a Career Technical Education Pathway course. Appropriate behavior, effort, and work are required at all times. It is designed to get students ready for other classes in the pathway. Students can expect to be treated as young adult learners and given considerable autonomy and flexibility. Therefore, students need to act maturely, responsibly, and safely and be proactive in their learning.

This class is a privilege, not a right. Since it is not a graduation requirement, students can be removed from the class for inappropriate behavior, lack of work, or safety violations.

Prerequisite courses/skills needed for this course:

✓ Math 1

Materials needed for this course:

- ✓ binder with tabs for student handouts
- ✓ graph paper lab book
- ✓ pencils
- ✓ ruler
- ✓ scientific calculator

Class Grading Policy: Standards Based Categories	Grading Scale A > 3.5 B 3.0-3.4
Physics Concepts (20) 0-4 Lab Skills 0-4 Coding Ability 0-4 Design/Engineering Skills 0-4 Problem Solving 0-4 Team Work 0-4 Professionalism 0-4 *Highest score for the term is accepted.	C 2.5-2.9 D 2.0-2.4 F < 2.0 4 – Thorough Understanding 3 – Adequate Understanding 2 – Partial Understanding 1 – Minimal Understanding 0 – No Understanding Evident

Lab-book:

- > Students are required to keep a neat up-to-date journal of all notes, labs, and projects.
- ➤ Each section should be organized and labeled and all assignments clearly marked (see lab-book handout for further details).
- ➤ All assignments should be neat, complete, and meet the assignment requirements.
- > Drawings, tables, and graphs need to be created using a ruler or computer program.
- > All calculations need to be shown with formulas.
- > Sloppy lab-books will not be graded.
- Lab-books are generally collected every 2-3 weeks.

Late Work:

- ➤ Late work is <u>not accepted</u>.
- ➤ If you cannot finish an assignment on time, you need to communicate with the teacher.

Projects:

You will be expected to work by yourself, with a partner, and in groups on various projects.

- ➤ The projects require you use the knowledge and skills you learned in labs and lectures.
- Proper behavior, participation, and effort are expected at all times.
- > Failure to act appropriately will result in removal from the project, a zero grade given, and a remedial lesson required.

Make-up Work Policy:

- > If you are absent, Check Google Classroom first for missing work, notes, or instructions and then ask the teacher if you cannot find it.
- ➤ If you need help you are expected to approach the teacher <u>outside of class time</u> for makeup work and instructions the day you come back from your absence.
- ➤ It is your responsibility to get missing work, not the teacher's.

Instructional Procedures:

- ✓ Be in your seat <u>before</u> the tardy bell rings.
- ✓ Put away your cell phone.
- ✓ Read the screen for the day's instructions and objectives.
- ✓ When the teacher is delivering instruction you are expected to **SLANT**: <u>Sit up</u>, <u>Listen</u>, <u>Activate your thinking</u>, <u>Notice what is going on around you, and <u>Track</u> the speaker.</u>
- ✓ Throughout the period you are expected to work to the best of your ability.
- ✓ Always practice safety in the lab.
- ✓ Clean you area and neatly put away all equipment and supplies.
- ✓ The teacher dismisses the class not the bell.

Bathroom:

- > Only one student at a time may leave.
- > You must get teacher approval first.
- You need to use the sign in/out sheet.
- Take the pass.
- > You may not go during the first and last 10 minutes of class or during instructions.

Condor PRIDE in the Classroom and NMCHS Expectations of Students:

Participate: In class activities by being prepared and ready to engage in learning.

Respect: Use appropriate language and volume. Purposely listen to others.

Integrity: Be accountable for your actions and words.

Determined: Show improvement and build your critical thinking skills.

Empowered: Organize time well on class activities & home practice. Make good choices.

Personal Electronic Devices (PEDs) Policy:

During instructional time, cell phones will not be permitted without teacher's direct approval. If cell phones, headphones or electronic devices are visible without teacher approval they will be confiscated and turned into the office. Please see student handbook for NMCHS policy.

Classroom Norms and Expectations:

Positive Norms in Science Class:

- 1. Everyone has the ability to learn science to the highest level.
- 2. Mistakes are valuable.
- 3. Questions are really important.
- 4. Depth is much more important than speed.
- 5. Science is a way of thinking.

Classroom Rules:

- 1. Follow instructions.
- 2. Be on Time and Prepared.
- 3. No Teasing, Harassing, Bullying, Put Downs, or Using Inappropriate Language.
- 4. Keep Hands, Feet, and all Objects to Yourself.
- 5. No Electronics, Makeup, Food, Drink, or Gum.

Consequences for Minor Behavior Problems:

- 1st: Warning.
- 2nd: Removal from the situation
- 3rd: Parent contact.
- 4th: Referral to administration.
- **➤** These consequences do not necessarily follow this order.
- > Severe or repetitive behavior problems will be directly referred to administration.

Academic Policy:

Cheating, lying, and plagiarizing are not acceptable.

- *Plagiarism* is the practice of copying words, sentences, images, or ideas for use in written or oral assignments without giving proper credit to the source.
- Lying is not telling the truth or whole truth for the purpose of evasion.
- *Cheating* is defined as the giving or receiving of prohibited help on anything that has been determined by the teacher to be an individual effort.
- First Violation You will receive a zero for the assignment.
- ➤ **Second Violation** You will receive an F grade for the course