



COURSE SYLLABUS

Manufacturing and Design Pathway 10th, 11th and 12th
John F. Kennedy High School
Fall 2016

- Instructor:** **Robert Greene**
E-mail: Robert-Greene@scusd.edu
- Location:** Room E-1
- Instructor Office Hours:** Mon-Fri 3:30 – 5:00 pm Room E-1
- Prerequisite:** Enrollment in the Manufacturing and Design Academy.
- Course Description:** This is an advanced course that presents theoretical and practical training for entry-level manufacturing engineering. This course will prepare a student for apprenticeship in a manufacturing environment and entry to a college of engineering. This is an advanced course where students will build on prior knowledge and explore computer assisted manufacturing as well as conventional machining.
- Required text:** Machinery's Handbook 28th edition
Book provided and stored on shop computers
- Required Materials:** Safety Glasses/Goggles (**Z87 Rated**) (one set will be provided)
Enclosed Shoes (Oil Resistant Preferred) (**NO OPEN TOES**)
Paper & Pencils – Pens and three ring binder

Course Overview:

To prepare students for entry-level employment in a manufacturing engineering environment and successful undergraduate studies in an engineering discipline. Students are trained in CAD/CAM software and Haas CNC controls.

Course Objectives:

Upon completion of this course, the student will be able to:

- Demonstrate safe use of tools and equipment.
- Know common machine tooling and fixtures.
- Demonstrate accurate measurement techniques.
- Use an engineering design process to solve problems and manage projects.
- Achieve intermediate ability to draw 3D parts in Solidworks.

- Utilize computer assisted manufacturing with multiple types of professional software.
- Perform basic and advanced CNC operations and problem-solving techniques.
- Design and manufacture parts and products utilizing multiple processes.
- Use computer assisted engineering to stress test parts and select proper materials for a project.

Shop and Classroom Procedures:

Every class session will begin and end in the classroom. The student will be expected to be seated in his/her assigned seat ready to work when the class bell rings. Students will be seated in alphabetic order. Students who are not present in their seat at the end of class will be marked as absent. The daily lecture or shop tasks will be announced shortly after attendance is taken. All rules and regulations found in the Kennedy High School student handbook will be enforced.

Attendance:

Student attendance will be critical to the success of this course. Students needing to make up missed lab activities or classroom tests will need to schedule with the instructor for a make-up. Only excused absences, cleared within three days will be eligible for a make-up. The student is 100% responsible for contacting the instructor for coursework make-up.

- Tardiness will be handled according to school policy.
- Truancies will be followed-up with a parent/ legal guardian contact.

Participation:

Student participation is needed to obtain a passing grade in the course. Not attending class is not participating in the course. Participation points will be assigned with a deduction for every day a student does not participate in the course.

Behavioral Expectations:

The manufacturing lab is an industrial environment and requires a higher level of maturity. If used improperly; tools and equipment can cause bodily harm. No hazardous actions will be tolerated. Students will not be permitted to disrupt the class or the learning of others. The instructor will resolve behavioral issues based upon the severity of the misbehavior. Students who have serious or continuous behavioral problems will be referred to the school administration for resolution. The rules in the shop are firm, to protect students from harm and enhance the learning opportunities and better good of the class.

Constructive Participation in the Learning Process:

- Have respect for others
- Be on time and prepared to learn with the appropriate materials
- Be alert and actively participate
- Follow directions
- Be respectful during instruction

- Respect property of the shop and that of others
- Do not bring inappropriate objects to class
- Abstain from food, drinks and gum
- Grades will be earned not given

Clothing and Eye Protection:

Proper safe clothing and eye protection will be strictly enforced. No unsecured jewelry or hair will be allowed as a safety precaution.

Safety Test:

Students are required to pass the shop safety test. Students who do not complete the online safety test will be placed in another course.

Required Text:

Course text will be provided for in class use and will be loaded on to the shop computers.

Electronics Policy: No personal electronics will be allowed or used in the classroom. Stolen, lost or damaged personal electronics will not be investigated....keep your personal electronics at home. These devices create a distraction in the learning process and a safety hazard. See the electronics policy in the student handbook. Shop computers will not have any student software or applications downloaded. School computer and electronics policy will be strictly enforced.

Grading:

In class participation, quizzes, tests, shop assignments and shop clean up will be compiled to define grades. Grades below 80% will not receive college credit for the course.

Grading scale:

90% to 100% for an A

80% to 89% for a B

70% to 79% for a C

60% to 69% for a D