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| Macintosh HD:Users:mikelindstrom:Desktop:Screen Shot 2015-11-03 at 9.49.05 PM.png | Anoka-Hennepin  CTE Course Syllabus |  |

**Course Name: Design and Fabrication II**

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| **Program of Study:** Manufacturing  **Subcategory**: Manufacturing Technology Occupations  **Teacher: Mr. Paddock**  **Email:** [**david.paddock@ahschools.us**](mailto:david.paddock@ahschools.us)  **Phone: 506-8480** | **Anoka-Hennepin Number:** (Design and Fabrication II)  **State Prog. Cod**e: 171710 **- Course Code: 2**  **Number Days:** 58 **Approx. Hrs.:** 65 **- Term:** 1 Tri  **Number of Credits:** .5 |

**Prerequisites:** Design and Fabrication I

**Brief Description:** Elective open to grades 9, 10, 11, and 12.

**Course Outcomes:** The following topics will be addressed:

1. **Safety** 
   * + 1. Understand and demonstrate proper safety procedures in the area of dress, eye hazard, behavior, and accident procedures
       2. Understand and demonstrate safe operation of equipment and tools.
       3. Understand safe handling and disposal of hazardous materials.
       4. Understand and demonstrate safe storage and handling of flammable materials.
       5. Understand and demonstrate proper shop maintenance and organization.
     1. **Design and Manufacturing**
        1. Students will be able to demonstrate basic engineering design skills using CAD software.
        2. Students will demonstrate understanding of the four career pathways and explore one pathway in depth by designing and fabricating a product in that pathway. As the second course in the sequence, the products in this course will allow for greater complexity and personalization in focus.
        3. Students will demonstrate understanding of the materials (properties and selection) and processes used in product fabrication.
        4. Students will demonstrate the ability to correctly program/code CNC and 3D printing equipment.
        5. Students will demonstrate the safety attitudes and procedures required in the use of fabrication materials and equipment.
        6. Students will experience and be able to articulate the critical attributes of manufacturing careers needed to be successful in MN businesses and industries.

**Methods:** This course will include required reading that relates to the instructional units listed, lectures, discussions, demonstrations, and self-paced work. Although this is a hands-on course, it will be necessary for students to become familiar with new terms, concepts and processes before practicing new skills. All lectures and demonstrations are followed by activities that allow students to more fully understand the presented material.

* This course will focus instruction on students developing and then applying their knowledge and skills in the design and fabrication of a product. Students will be allowed to choose the career pathway of focus.
* Students will also be expected to integrate STEM and other content knowledge into their product design and fabrication.
* This is an “application-based course” with students demonstrating real-world application of knowledge and skills in the use of high-tech cutting-edge equipment, software and materials.

**Evaluation:** The grade for this course will be based on the following:

* A – 100% - 90%
* B – 89% - 80%
* C – 79% - 70%
* D – 69% - 60%
* F – 59% or below
  1. Projects and assignments (approx. 90%) - Formative Assessments
  2. Final Test (approx. 10%)- Summative Assessment

**Attend. & Conduct:** Attendance and class participation are critical to the student's success in understanding and gaining familiarity with CTE concepts. Please notify the instructor if you will be missing any classes. Students are expected to submit their own work for this course. Academic dishonesty will NOT be tolerated. This includes copying the work of other students during examinations; unauthorized collaboration on homework and project assignments; unauthorized use of the internet to obtain homework and/or test answers; representing work done by others as your own.

**College Credit or Professional Certification:** Articulated College Credit

**# Coll Cr (if any):** 4 **School(s) Accepting Credit:** Hennepin Technical College

**# Hrs Toward Prof. Cert. (if any):** 0 **Qualification Method:** Course compl. w/specified grade. “A” or “B”