



**Design and Drawing for Production
(DDP)**
Mr. Gray

Fall 2009 / Spring 2010
(1 Credit)
Room B-2

Course Outline

Prerequisites: NONE, Open to all 9-12th grade students

Scope: Design & Drawing for Production is a 1 credit 40-week course, which will provide students with basic knowledge about mechanical drawing. The topics covered will enable students to comprehend the need for technical drawings and their importance in today's technological world. Through "hands-on" learning activities, students will gain useful experience in mechanical drafting techniques, and practices. This course will develop proficiency in technical drawing by exposing them to advanced drawing techniques, equipment and software. The first 5-weeks of the course will focus on hand drawing techniques. The last 35-weeks of the course will explore the uses of AutoCAD LT2008 and Solidworks 2007 as tools for drawing and designing. AutoCAD is 2-dimensional drafting software, used by professionals in the engineering and architectural fields. Solidworks™ is state-of-the-art solid modeling software, used world wide as a tool for design and engineering professionals. These software applications will allow students to design, draw and analyze components and assemblies on the computer in a virtual-reality environment. The forth focus of this course, CAM will create these parts by using our new CNC milling machine. This class will be used as a stepping-stone for future courses.

Textbook: Mechanical Drawing: Principles and Practices

Career Possibilities: Architect / Civil Engineer / Mechanical Engineer / Draftsman

Course Content: Topics to be covered will include:

- Drawing practices
- Tools & Equipment
- Materials & Software
- Sketches & Concept Drawings
- AutoCAD LT2008
- Pictorial Drawings
- 2-dimensional drawings
- 3-dimensional drawings
- Multi-view drawings
- Solidworks Parts
- Solidworks Assemblies
- Animator
- Photoworks
- M&G Code Programming
- CNC Programming
- CNC Machining
- Prototyping
- Career Exploration

Supplies: Each student must come to class prepared each day with the following:
(2) #2 Pencils with erasers, (2) Ball Point Pens, (1) Spiral Notebook, (1) 3-ring binder

Classwork: Because this is a hands-on class, homework will not be given on a regular basis, but each student will be required to complete at least (2) projects a week. A project calendar will be handed out for each quarter, and students will have appropriate time to complete their projects. We will strictly adhere to the project calendar, and all assigned work will be due one week before the end of the marking period. The projects will consist of hand drawings, AutoCAD and Solidworks drawings. Students will also be required to produce design prototypes using the CNC machine at the end of the semester.

Notebooks: It is required that students keep a daily spiral notebook. This notebook will be used for daily notes and assignments. It must be secured in a three-ring style binder, for 3-hole punched handouts.

(continued on back)

Design and Drawing for Production Course Outline Continued

Testing: Students will be quizzed weekly using the SyconEyes software installed on each of their computers. The quizzes will be used as an enforcement of topics discussed earlier in the week. There will be one major test per quarter which will outline the progress that the student has made during that quarter.

Technopalooza 2010: "Our Tenth Anniversary" - The MCS Technology department is very proud of their students work throughout the year. Technopalooza is an annual event, which is both a fundraiser for the Technology Department and a fun night of classic cars and technology exhibits. As a showcase of student work, The Middleburgh Central School Technology Department proudly announces Technopalooza 2010 on Friday, June 11th 2010, from 5-9PM. Students will be required to attend and present their work to the community. Their attendance and participation will equate to 50% of their Final Exam grade. If for some reason the student cannot attend the event, arrangements must be made 2-weeks prior to the event with the instructor.

Portfolio's: The students will engage in a number of detailed projects and drawings throughout the year. Often these projects just get discarded, and only the memory of them remains. Each student will create a 3-ring style portfolio at the end of the year. This portfolio will include all of the drawings that they completed as well as hand-outs and notes that they obtained. The portfolio must have tabs for each component within and will have a professional cover page. This portfolio will equate to the remaining 50% of their Final Exam Grade, which will be an accurate representation of their progress throughout the year. The Design and Drawing for Production portfolio is due no later than June 10th 2010.

Attendance: It is very important that students are in class every day. If a student misses a class, it is their responsibility to make up the work and adhere to the project calendar. Attendance will be taken at the beginning of class. Students who show up later then 20 minutes to class will be marked absent for that day. If a student will miss a class because of a lesson or a field trip, they must inform the instructor PRIOR to missing the class, and must get the notes and assignments they missed when they return.

Grading: A grading rubric will be completed for each project turned in. Grading criteria will be discussed for each project, and additional criteria will be assigned for larger projects. General drawing projects will carry a 100pt total, while larger projects may carry a 300pt total. Students may complete projects ahead of time as assigned on the project calendar, but no credit will be given until the due date of the project. There will be a 5-week progress report generated based on the instructor's view of students' standing, half way through the quarter. All project work is due (1) week before the end of the marking period, and must be successfully completed for full credit. Students whom have completed all of the assigned projects may complete a bonus assignment for that quarter, which can only improve their grade point average. The grading outline is described below:

<u>Quarterly Grades</u>		<u>Course Grade</u>	
Projects	2500 pts	1 st Quarter Ave	=20%
Quizzes	100 pts	2 nd Quarter Ave	=20%
Test	300 pts	3 rd Quarter Ave	=20%
Behavior	50 pts	4 th Quarter Ave	=20%
Participation	50 pts	Technopalooza	=10%
Total Pts./Qtr.	3000 pts	Portfolio	=10%

I _____ have read the above course outline and have shared the information listed above with my Parent / Guardian. I will come to class prepared each day and will do my best to satisfy the requirements as stated above. I will also keep my school computer access in good standing, so I may continue to be enrolled in this course, and utilize the school's drafting software.

Student Signature

Date

Parent / Guardian Signature

Date