

**MASCONOMET REGIONAL SCHOOL DISTRICT  
COURSE SYLLABUS**

**Course Name:** Innovative Product Design I (Industrial Design)  
**Course Number:**  
**Length of Course:** 6PPC for One Semester

**Department:** Art  
**Grade Level(s):** 10-12  
**Credits:** 5.0 (2.5 per semester)

**Course Description:**

Innovative Product Design is an elective course for students in grades 10-12. Industrial or product design combines art, style, and creativity with concerns of usability. Students will learn about the basic concepts of designing the products that they interact with on a daily basis such as cell phones, sneakers, and furniture. The principles of industrial design are introduced through studio exercises, slide lectures, and demonstrations. Students will study both current and historic examples of products. Projects are assigned with both form (aesthetic appeal) and function (the product's purpose) in mind. Students will progress from initial research and developmental drawings to the building of three-dimensional models, and prototypes. Sketching and perspective drawing will be covered as well as building with a variety of sculptural materials. This course will help students develop a better awareness of materials while gaining an in-depth understanding of scale, form and a product's relationship to its user. Students will be asked to observe carefully; think creatively and technically; and make decisions thoughtfully and reflectively.

**Central Objectives:**

The students will:

- develop an awareness of the history of industrial design
- develop an understanding of one, two and three point perspective drawing.
- understand and implement the process of design: define who the user is, research the subject, brainstorm, conceptualize and strategize, plan/sketch/refine ideas, and create/evaluate/adjust design
- translate two-dimensional design into three-dimensional form in space.
- formulate a portfolio of resolved, original designs at the conclusion of the semester.
- verbally articulate what they have created using the relevant elements of art and the principles of design.
- provide constructive criticism to their peers regarding the work that has been created in class during informal and formal critique sessions.
- continually reflect to effectively solve visual problems
- develop the ability to become more informed about how industrial design is created and its place in our history and culture.
- increase their awareness of our visual environment and become better observers by working from history, observation and the imagination.

**Major Activities:**

Each student will create a body of work in which the emphasis will be on a variety of materials and processes as associated with industrial design. All visual problems will address the specific guidelines within the Massachusetts Visual Art Curriculum Frameworks and the Masconomet Art Department's list of "Elements of Art and Principles of Design" (see Attachment 1). Major units in the following areas will be explored:

**Design:**

The students will:

- complete research on a product, amongst a focus group, to determine its user compatibility.
- brainstorm concepts and sketch many solutions
- develop a concept by exploring fresh approaches and thinking beyond the familiar; plan; and evaluate the quality of ideas.
- experiment with ways to organize and balance interior and exterior components while also considering ergonomics.
- create three dimensional sketch models using a variety of materials that consider form and function.
- build finished prototypes of resolved designs for presentation.

**Vocabulary:** Composition, positive space, negative space, balance, symmetry, asymmetry, rhythm, variety, pattern, unity, proportion, scale, form, function, interior, exterior, ergonomics, geometric, organic, volume, cubic, cylindrical, circular, program, context, public, private, cantilever, aesthetics, brainstorm, presentation, critique, execution

**Drawing:**

The students will:

- create ideation sketches that evolve into designs.
- develop observational skills to more accurately evaluate and render the way our eyes see the built objects we interact with daily.
- explore one, two and three point perspective drawings from both imagination and observation.
- develop the understanding and the technical skills necessary to duplicate and create original orthographic drawings (plan, elevation, section and isometric).

**Vocabulary:** *two-dimensional, three-dimensional, perspective, horizon line, vanishing point, sighting, parallel, line, contour, overlapping, proportion, mark making, shadow, artistic license, outline, texture, contrast, figure-ground, ebony pencil, gum eraser, value, t-square, 45°/90° triangle, 30°/60°/90° triangle, perpendicular orthographic, plan, elevation, section, isometric.* Note: All students and teachers will reference Masconomet's "Observational Drawing Rules for Full-Value Drawings" when completing an observational drawing assignment (see Attachment 2).

### **Behavioral Expectations:**

The students will:

- be on time to class.
- be expected to put forth their best effort.
- respect that the art room is a shared, cooperative space. You will be expected to show an ability to use, control, and clean up all tools and materials properly and safely.
- assume responsibility to make up work missed due to absence.
- come to class prepared to work.
- receive a conduct grade that is reflective of their level of cooperation, behavior, attentiveness, alertness, interest and level of consistent participation in all classroom activities.

### **Student Evaluation:**

Teachers will use the aforementioned criteria in combination with rubrics and/or performance checklists to arrive at a letter grade for each student—pluses and minuses will also be awarded. Grades in Drawing are as follows:

- A The student mastered all of the course objectives with an outstanding level of proficiency.
- B The student mastered all of the course objectives with a commendable level of proficiency.
- C The student mastered a sufficient number of the course objectives with a reasonable level of proficiency.
- D The student mastered the minimum number of course objectives.
- F The student failed to accomplish the minimum required course objectives.

### **Text and Materials:**

Relevant handouts and visual presentations will be provided as appropriate.

### **Methodology:**

- **Investigations:** Students will be exposed to a variety of methods, materials and processes which will be used to uniquely solve visual problems
- **Lectures and Demonstrations:** Lectures and demonstrations will be used to safely introduce new methods, materials and approaches. Introduction to specific artists and artistic styles will also be presented in this format.
- **Discussions:** Individual and group discussions (critiques) of work in progress will be held on a regular basis. Students will be expected to take part in these critiques and to use proper art vocabulary terms. Students will also be expected to reflect upon their work and make adjustments to it as needed.
- **Visual aides:** Charts, samples, books, photos, websites, CDs, slides etc., will be used to motivate students and to strengthen their understanding of art elements, techniques, concepts, etc.

**Elements of Art and Principles of Design**  
**Masconomet Regional School District Art Department**

**Elements of Art:**

**Line:** The path of a moving point ("a dot going for a walk").

**Color:** Color is the light reflected from a surface.

Color has three distinct qualities:

- Hue/Color—the identity of the color
- Value—lightness to darkness of a color
- Intensity—brightness to dullness of a color

**Value/Tone:** The lightness or darkness of a color.

**Texture:** The actual or implied surface of an object.

**Shape:** A two-dimensional area enclosed by an outline.

**Form:** A three-dimensional shape containing height, width, and depth.

**Space:** Organizes elements in a composition while also referring to the distance or area between, around, or within a shape or form.

**Principles of Design:**

**Unity:** This refers to the sense of wholeness, harmony and order in a work of art.

**Variety:** The differences among and between the elements in a composition.

**Balance:** The weighted relationship between elements in a composition.

**Emphasis:** Emphasis can be applied to one or more of the elements to create dominance.

**Rhythm:** The repeated use of an element to achieve visual movement in a composition.

**Repetition:** The use of an element or elements more than once in a composition.

**Proportion:** The size relationship of all parts, to each other and to the whole, in a composition.

**Attachment 1**

**OBSERVATIONAL DRAWING RULES  
FOR FULL-VALUE DRAWINGS  
Masconomet Regional School District Art Department**

- There is no such thing as an outline.
- Keep it light until it's right.
- A shadow is simply a darker value of what is already there.
- Always use the point of your pencil.
- An eraser is a drawing tool.
- Don't smudge.
- Short multi-directional marks will create even values.
- Make sure that your mark making follows the direction of the objects you are drawing—curved marks for curved objects, etc.
- Breaking edges makes for more interesting compositions.
- Make sure that a figure-ground relationship is established by including connecting cast shadows below the objects.
- The negative space is often as important as the positive space in a drawing.
- Make sure that there is a change in value whenever one object meets another (even if it is negative space)—this is an **edge** not an outline.
- Always hang your work up, stand back and then assess it from a distance. It will always appear lighter.
- Make sure that every drawing has a full range of values—from the lightest lights to the darkest darks and a range of grays in between.
- Remember that each of you has an artistic license that can be used in order to make adjustments in what you are observing to provide artistic punch.
- If you don't understand how light is falling on objects that you are drawing then you will not be able to draw them accurately. Periodically, you will need to put down your pencils...really observe the relationship between the objects and the light falling on them. Only after reestablishing this connection/observation should you pick up the pencil and begin drawing again.