

DESIGN TECHNOLOGY EDUCATION

The mission of Design Technology Education is to educate our students to become technologically literate through the study of human design in an ever-changing technological society. Design Technology education provides application and relevance to concepts of science, technology, engineering, art, and math (STEAM). Students will develop safe and appropriate skills in a wide range of traditional and contemporary technologies; while using the engineering design cycle to problem solve. Through various course offerings students will develop an appreciation for the relationships among individuals, technology, and society.

GRADE	COURSES
9-12 Electives	Principles of Engineering I/II Digital Photography/Imaging Fundamentals of Graphic Design STEAM Competitions Yearbook I, II, III Design Tech Independent Study

52540 Principles of Engineering I

0.5 Credit

Grades 9-11

In this semester course, students will explore the four areas of technology education; communications, construction, manufacturing, and transportation and power technologies. During this activity-driven course, students will use the engineering design cycle to create solutions to a variety of STEAM assignments. All design challenges will help develop the students' ability to analyze, use logical reasoning, and problem solve. Concepts of power, force, velocity, acceleration, and speed will be covered. Recent class projects have included building rockets, catapults, aerodynamic dragsters, simple machines and balsa bridges and creating promotional graphics, claymation videos. Class will involve note taking, researching, quizzes and tests, but will focus heavily on hands-on projects with a strong emphasis of the importance of safety in the shop. *Primary Graduate Expectations:* Critical Thinking & Problem Solving; Curiosity & Creativity.

52541 Principles of Engineering II

52543 Advanced Principles of Engineering II

1.0 Credit

Grades 10-12

Students will continue to investigate the four areas of technology education with a more in-depth physics emphasis. Students will research, design, and construct projects. Recent design challenges have included constructing parachutes, planes, maglev vehicles, electric terrain vehicles, boats, cutting boards, wooden pens and designing single color screen printing, promotional brochures, architectural layouts, and exploring alternative energy sources (wind, solar, hydro). Class will involve note taking, research, quizzes and tests, but will focus heavily on hands-on projects. *Primary Graduate Expectations:* Critical Thinking and Problem Solving; Curiosity and Creativity. *Advanced Principles of Engineering II is for highly motivated students who are ready and willing to work at a faster pace. Prerequisite:* C or higher in Principles of Engineering I. This course is eligible for 1.0 Science credit. *Primary Graduate Expectations:* Critical Thinking & Problem Solving; Curiosity & Creativity.

52546 Digital Photography/Imaging

0.5 Credit

Grades 10-12

During this fast-paced course, students will learn digital single lens reflex (D-SLR) camera operation, composition, a general history of photography, and photo manipulation through the use of Adobe Photoshop. Projects which teach correct exposure, control of movement, depth of field, photographic perception and the understanding of photographic selection and 'framing' will be assigned. This course will involve lectures, demonstrations, critiques and discussions with a heavy focus on hands-on projects. This course is eligible for 0.5 Art credit. *Primary Graduate Expectations:* Curiosity & Creativity.

52542 Fundamentals of Graphic Design

0.5 Credit

Grades 10-12

During this fast-paced course, students will explore the graphic design world creating 2-D and 3-D projects. This course will discuss the visual principles and elements of design. Basic typography, hierarchy of information, and using grid systems for layouts will also be covered. Software training will focus on Adobe Illustrator and Adobe InDesign. Students will also learn the process of silk screen process printing. Students will participate in class critiques, demonstrations, and projects. Class will involve notes, quizzes/tests, and critiques with heavy focus on hands-on projects. Knowledge of Adobe Photoshop is recommended, but not required. *Primary Graduate Expectations:* Curiosity and Creativity; Effective Communication. This course is eligible for 0.5 Art Credit.

526251 Yearbook I

1.0 Credit

Grades 10-12

This course is for the highly motivated student wishing to obtain marketable experience in print media publishing. Students will identify and report news-making events; incorporate journalistic forms, create eye-catching layouts, and use photography to document a year in the history of Burlington High School and our community in the annual publication of our yearbook, *OREAD*. Students must be able to accept responsibility and work independently to meet deadlines. Documentation of events will require that staff members work after school and on weekends. Upon completion of the course students will be able to:

1. apply the basic principles of page design and layout
2. operate Adobe InDesign software
3. write copy for captions and text
4. shoot, select, and crop photographs for layout
5. work collaboratively to create a unified theme

Students who wish to enroll in Yearbook must submit a one-page writing sample to Ms. Skoglund answering the following question: *What is the role of the yearbook in a school community? What skills or strengths will you bring to the team?* *Primary Graduate Expectations:* Effective Communication; Civic Engagement & Cross-Cultural Understanding.

526261 Yearbook II

526271 Yearbook III

1.0 Credit

Grades 11-12

Students in Yearbook II and III will build on the skills learned in Yearbook I. Students will also learn to edit copy, lead a team to produce articles in a timely fashion, generate new story ideas and feature articles, create slide shows for school events, create marketing campaigns to continue funding the publication's development, and assume responsibility and leadership for a certain component of the yearbook and publications. *Expectations:* Curiosity and Creativity; Civic Engagement/Cross-Cultural Understanding; Effective Communication. *Prerequisite:* Approval by Ms. Skoglund. Co-listed with Business. *Primary Graduate Expectations:* Effective Communication; Civic Engagement & Cross-Cultural Understanding.

52547 Design Technology Independent Study

0.25-0.5 Credit (spring only)

Grades 11-12

Have you taken a design technology course and desire to expand on this learning? Do you have an idea or concept you would like to bring to life? This course is ideal for highly motivated students interested in self-directed learning in the area of design technology and STEAM. Students may choose to study a topic of their choice for a quarter or semester long independent study under the guidance of the design technology teacher. Areas of study may include, but are not limited to: photography, graphic design, architectural design (CAD), silk screen printing, 3-D printing, laser technologies, and robotics. *Prerequisite:* Permission of the instructor. *Primary Expectations:* Curiosity & Creativity; Critical Thinking & Problem Solving.