

§126.25. Digital Graphics/Animation (One Credit)

(a) **General requirements.** The prerequisite is proficiency in basic tech 8). This course is recommended for students in Grades 9-12.

(b) **Introduction.**

(1) **The technology applications curriculum has four strands: foundations, information acquisition, work in solving problems, and communication.**

(2) **Through the study of technology applications foundations, including technology-related terms, concepts, and data input strategies, students learn to make informed decisions about technologies and their applications. The efficient acquisition of information includes the identification of task requirements; the plan for using search strategies; and the use of technology to access, analyze, and evaluate the acquired information. By using technology as a tool that supports the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create a solution, and evaluate the results. Students communicate information in different formats and to diverse audiences. A variety of technologies will be used. Students will analyze and evaluate the results.**

(c) **Knowledge and skills.**

(1) **Foundations.** The student demonstrates knowledge and appropriate use of hardware components, software programs, and their connections. The student is expected to:

- (A) demonstrate knowledge and appropriate use of operating systems, software applications, and communication and networking components;
- (B) compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices;
- (C) make decisions regarding the selection, acquisition, and use of software taking under consideration its quality, appropriateness, effectiveness, and efficiency;
- (D) delineate and make necessary adjustments regarding compatibility issues including, but not limited to, digital file formats and cross platform connectivity;
- (E) use the vocabulary as it relates to digital graphics and animation software;
- (F) distinguish between and correctly use process color (RGB and CYMK), spot color, and black/white;
- (G) identify color mixing theories and apply these theories to the creation of new colors in the digital format;
- (H) compare, contrast, and integrate the basic sound editing principles including the addition of effects and manipulation of wave forms;
- (I) distinguish between and use the components of animation software programs including cast, score, stage, and the animation control panel;
- (J) select and connect task appropriate peripherals such as a printer, CD-ROM, digital camera, scanner, or graphics tablet; and
- (K) distinguish and use the different animation techniques of path and cell animation.

(2) **Foundations.** The student uses data input skills appropriate to the task. The student is expected to:

- (A) demonstrate proficiency in the use and graphical integration of a variety of input devices such as keyboard, scanner, mouse, graphic tablet with pen, or digital camera; and
- (B) compare and contrast digital input devices.

(3) **Foundations.** The student complies with the laws and examines the issues regarding the use of technology in society.

The student is expected to:

- (A) discuss copyright laws/issues and model ethical acquisition and use of digital information, citing sources using established methods;

- (B) model respect of intellectual property when manipulating, morphing, and editing graphics, video, text, and sound;
- (C) demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet; and
- (D) research the impact of digital graphics in society and as an art form.

(4) Information acquisition. The student uses a variety of strategies to acquire information from electronic resources, with appropriate supervision. The student is expected to:

- (A) use strategies to access research information from different resources, including local area networks (LANs), wide area networks (WANs), the Internet, and intranet; and
- (B) obtain print and digital information from a variety of resources including, but not limited to, encyclopedias, databases, and libraries of images.

(5) Information acquisition. The student acquires electronic information in a variety of formats, with appropriate supervision.

The student is expected to:

- (A) use the Internet and retrieve information in electronic formats including text, audio, video, and graphics, citing the source;
- (B) demonstrate the appropriate use of digital imaging, video integration, and sound in documents; and
- (C) import sounds from a variety of sources including, but not limited to, audio CD, tape, and microphone.

(6) Information acquisition. The student evaluates the acquired electronic information. The student is expected to:

- (A) compare and contrast the rules of composition such as rule of thirds or the golden section/rectangle with respect to harmony and balance as well as discord and drama;
- (B) evaluate the fundamental concepts of a graphic design including composition and lighting;
- (C) analyze the designs to decide the point of interest and the attributes that determine prominence and support of the subject; and
- (D) distinguish among the categories of typefaces while recognizing and resolving conflicts

(7) Solving problems. The student uses appropriate computerbased productivity tools to create and modify solutions to problems. The student is expected to:

- (A) combine graphics, images, and sound for foundation or enrichment curricular projects;
- (B) integrate the productivity tools including, but not limited to, word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs into the digital graphics;
- (C) use perspective including backgrounds, light, shades/shadows, and scale to capture a focal point and create depth;
- (D) use the basic principles of proportion, balance, variety, emphasis, harmony, symmetry, and unity in type, color, size, line thickness, shape, and space;
- (E) use repetition of color, shape, texture, spatial relationships, line thickness, and size to develop organization and strengthen the unity of a product;
- (F) create three-dimensional effects using foreground, middle distance, and background images;
- (G) apply a variety of color schemes to digital designs including monochromatic, analogous, complementary, primary/secondary triads, cool/warm colors, and split complements;
- (H) use the basic concepts of color and design theory to work in a bitmapped mode, creating backgrounds, characters, and other case members as needed for the animation;
- (I) use the appropriate scripting language to create an animation or movie;
- (J) read, use, and develop technical documentation;

- (K) edit files using appropriate digital editing tools and established design principles including consistency, repetition, alignment, proximity, ratio of text to white space, image file size, color use, font size, type, and style; and
- (L) use a variety of techniques to edit, manipulate, and change sound.

(8) **Solving problems.** The student uses research skills and electronic communication, with appropriate supervision, to create new knowledge. The student is expected to:

- (A) demonstrate the use of technology to participate in self directed, meaningful activities in the larger community and society;
- (B) demonstrate proficiency in, appropriate use of, and navigation of LANs, WANs, the Internet, and intranet for research and for sharing of resources; and
- (C) participate with electronic communities as a learner, initiator, contributor, and teacher/mentor.

(9) **Solving problems.** The student uses technology applications to facilitate evaluation of work, both process and product. The student is expected to:

- (A) create technology specifications for tasks and rubrics for the evaluation of products and product quality against established criteria;
- (B) design and implement procedures to track trends, set timelines, and review/evaluate progress for continual improvement in process and product;
- (C) evaluate data by using criteria appropriate for the purpose;
- (D) resolve information conflicts and validate information through accessing, researching, and comparing data; and
- (E) seek and respond to advice from peers in delineating technological tasks.

(10) **Communication.** The student formats digital information for appropriate and effective communication. The student is expected to:

- (A) identify pictorial qualities in a design such as shape and form, space and depth, or pattern and texture to create visual unity and desired effects in designs;
- (B) use a variety of lighting techniques including shadows and shading to create an effect;
- (C) define the design attributes and requirements of products created for a variety of purposes including posters, billboards, business cards, stationery, book jackets, folders, booklets, pamphlets, brochures, and magazines; and
- (D) use proximity and alignment to create a visual connection with other elements.

(11) **Communication.** The student delivers the product electronically in a variety of media, with appropriate supervision.

The student is expected to:

- (A) publish information in a variety of ways including, but not limited to, printed copy or monitor display; and
- (B) publish information in saved files, Internet documents, CDROM discs, or video.

(12) **Communication.** The student uses technology applications to facilitate evaluation of communication, both process and product. The student is expected to:

- (A) determine and employ technology specifications to evaluate projects for design, content delivery, purpose, and audience; and
- (B) seek and respond to advice from peers in evaluating the