

Chapter 126. Texas Essential Knowledge and Skills for Technology Applications

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Chapter 126. Texas Essential Knowledge and Skills for Technology Applications

Subchapter A. Elementary

Statutory Authority: The provisions of this Subchapter A issued under the Texas Education Code, §28.002, unless otherwise noted.

§126.1. Implementation of Texas Essential Knowledge and Skills for Technology Applications, Elementary.

The provisions of this subchapter shall be effective September 1, 1998.

Source: The provisions of this §126.1 adopted to be effective September 1, 1998, 22 TexReg 5203.

§126.2. Technology Applications, Kindergarten-Grade 2.

- (a) 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.

(b) 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) use technology terminology appropriate to the task;
- (B) start and exit programs as well as create, name, and save files; and
- (C) use networking terminology such as on-line, network, or password and access remote equipment on a network such as a printer.

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

The student is expected to:

- (A) use a variety of input devices such as mouse, keyboard, disk drive, modem, voice/sound recorder, scanner, digital video, CD-ROM, or touch screen;
- (B) use proper keyboarding techniques such as correct hand and body positions and smooth and rhythmic keystroke patterns as grade-level appropriate;
- (C) demonstrate touch keyboarding techniques for operating the alphabetic, numeric, punctuation, and symbol keys as grade-level appropriate;
- (D) produce documents at the keyboard, proofread, and correct errors; and
- (E) use language skills including capitalization, punctuation, spelling, word division, and use of numbers and symbols as grade-level appropriate.

- (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) follow acceptable use policies when using computers; and
- (B) model respect of intellectual property by not illegally copying software or another individual's electronic work.

- (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) apply keyword searches to acquire information; and
 - (B) select appropriate strategies to navigate and access information for research and resource sharing.
- (5) **Information acquisition.** The student acquires electronic information in a variety of formats, with appropriate supervision.
- The student is expected to:
- (A) acquire information including text, audio, video, and graphics; and
 - (B) use on-line help.
- (6) **Information acquisition.** The student evaluates the acquired electronic information.
- The student is expected to:
- (A) determine the success of strategies used to acquire electronic information; and
 - (B) determine the usefulness and appropriateness of digital information.
- (7) **Solving problems.** The student uses appropriate computer-based productivity tools to create and modify solutions to problems.
- The student is expected to:
- (A) use software programs with audio, video, and graphics to enhance learning experiences; and
 - (B) use appropriate software, including the use of word processing and multimedia, to express ideas and solve problems.
- (8) **Solving problems.** The student uses research skills and electronic communication, with appropriate supervision, to create new knowledge.
- The student is expected to:
- (A) use communication tools to participate in group projects; and
 - (B) use electronic tools and research skills to build a knowledge base regarding a topic, task, or assignment.
- (9) **Solving problems.** The student uses technology applications to facilitate evaluation of work, both process and product.
- The student is expected to:
- (A) use software features, such as on-line help, to evaluate work progress; and
 - (B) use software features, such as slide show previews, to evaluate final product.
- (10) **Communication.** The student formats digital information for
- The student is expected to:

appropriate and effective communication.

- (A) use font attributes, color, white space, and graphics to ensure that products are appropriate for the defined audience; and
- (B) use font attributes, color, white space, and graphics to ensure that products are appropriate for the communication media including multimedia screen displays and printed materials.

- (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 media including, but not limited to, printed copy or monitor display; and
- (B) publish information in a variety of media including, but not limited to, stored files or video.

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

The student is expected to:

- (A) select representative products to be collected and stored in an electronic evaluation tool; and
- (B) evaluate the product for relevance to the assignment or task.

Source: The provisions of this §126.2 adopted to be effective September 1, 1998, 22 TexReg 5203.

§126.3. Technology Applications, Grades 3-5.

(a) 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.

(b) 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) use technology terminology appropriate to the task;
- (B) save and delete files, uses menu options

and commands, and work with more than one software application;

- (C) identify and describe the characteristics of digital input, processing, and output;
- (D) delineate and make necessary adjustments regarding compatibility issues including, but not limited to, digital file formats and cross platform connectivity; and
- (E) access remote equipment on a network such as a printer or other peripherals.

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

The student is expected to:

- (A) use a variety of input devices such as mouse, keyboard, disk drive, modem, voice/sound recorder, scanner, digital video, CD-ROM, or touch screen;
- (B) use proper keyboarding techniques such as correct hand and body positions and smooth and rhythmic keystroke patterns;
- (C) demonstrate touch keyboarding techniques for operating the alphabetic, numeric, punctuation, and symbol keys as grade-level appropriate;
- (D) produce documents at the keyboard, proofread, and correct errors;
- (E) use language skills including capitalization, punctuation, spelling, word division, and use of numbers and symbols as grade-level appropriate; and
- (F) demonstrate an appropriate speed on short timed exercises depending upon the grade level and hours of instruction.

- (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) follow acceptable use policies when using computers; and
- (B) model respect of intellectual property by not illegally copying software or another individual's electronic work.

- (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) apply appropriate electronic search strategies in the acquisition of information including keyword and Boolean search strategies; and
- (B) select appropriate strategies to navigate

and access information on local area networks (LANs) and wide area networks (WANs), including the Internet and intranet, for research and resource sharing.

- (5) **Information acquisition.** The student acquires electronic information in a variety of formats, with appropriate supervision.
- The student is expected to:
- (A) acquire information including text, audio, video, and graphics; and
 - (B) use on-line help and documentation.
- (6) **Information acquisition.** The student evaluates the acquired electronic information.
- The student is expected to:
- (A) apply critical analysis to resolve information conflicts and validate information;
 - (B) determine the success of strategies used to acquire electronic information; and
 - (C) determine the usefulness and appropriateness of digital information.
- (7) **Solving problems.** The student uses appropriate computer-based productivity tools to create and modify solutions to problems.
- The student is expected to:
- (A) use software programs with audio, video, and graphics to enhance learning experiences;
 - (B) use appropriate software to express ideas and solve problems including the use of word processing, graphics, databases, spreadsheets, simulations, and multimedia; and
 - (C) use a variety of data types including text, graphics, digital audio, and video.
- (8) **Solving problems.** The student uses research skills and electronic communication, with appropriate supervision, to create new knowledge.
- The student is expected to:
- (A) use communication tools to participate in group projects;
 - (B) use interactive technology environments, such as simulations, electronic science or mathematics laboratories, virtual museum field trips, or on-line interactive lessons, to manipulate information; and
 - (C) participate with electronic communities as a learner, initiator, contributor, or mentor.
- (9) **Solving problems.** The student uses technology applications to
- The student is expected to:
- (A) use software features, such as on-line help,

facilitate evaluation of work, both process and product.

to evaluate work progress; and

- (B) use software features, such as slide show previews, to evaluate final product.

- (10) **Communication.** The student formats digital information for appropriate and effective communication.

The student is expected to:

- (A) use font attributes, color, white space, and graphics to ensure that products are appropriate for the defined audience;
- (B) use font attributes, color, white space, and graphics to ensure that products are appropriate for the communication media including multimedia screen displays, Internet documents, and printed materials; and
- (C) use appropriate applications including, but not limited to, spreadsheets and databases to develop charts and graphs by using data from various sources.

- (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 media including, but not limited to, printed copy, monitor display, Internet documents, and video; and
- (B) use presentation software to communicate with specific audiences.

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

The student is expected to:

- (A) select representative products to be collected and stored in an electronic evaluation tool;
- (B) evaluate the product for relevance to the assignment or task; and
- (C) create technology assessment tools to monitor progress of project such as checklists, timelines, or rubrics.

Source: The provisions of this §126.3 adopted to be effective September 1, 1998, 22 TexReg 5203.

Chapter 126. Texas Essential Knowledge and Skills for Technology Applications

Subchapter B. Middle School

Statutory Authority: The provisions of this Subchapter B issued under the Texas Education Code, §28.002, unless otherwise noted.

§126.11. Implementation of Texas Essential Knowledge and Skills for Technology Applications, Middle School.

The provisions of this subchapter shall supersede §75.51 of this title (relating to Computer Literacy) beginning September 1, 1998.

Source: The provisions of this §126.11 adopted to be effective September 1, 1998, 22 TexReg 5203.

§126.12. Technology Applications (Computer Literacy), Grades 6-8.

- (a) General requirements. Districts have the flexibility of offering technology applications (computer literacy) in a variety of settings, including a specific class or integrated into other subject areas.
- (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) demonstrate the ability to select and use software for a defined task according to 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 technology terminology appropriate to the task;
(F) perform basic software application functions including, but not limited to, opening an application program and creating, modifying, printing, and saving documents;
(G) explain the differences between analog and digital technology systems and give

- examples of each;
- (H) use terminology related to the Internet appropriately including, but not limited to, electronic mail (e-mail), Uniform Resource Locators (URLs), electronic bookmarks, local area networks (LANs), wide area networks (WANs), World Wide Web (WWW) page, and HyperText Markup Language (HTML); and
 - (I) compare and contrast LANs, WANs, Internet, and intranet.
- (2) **Foundations.** The student uses data input skills appropriate to the task. The student is expected to:
- (A) demonstrate proficiency in the use of a variety of input devices such as mouse/track pad, keyboard, microphone, digital camera, printer, scanner, disk/disc, modem, CD-ROM, or joystick;
 - (B) demonstrate keyboarding proficiency in technique and posture while building speed;
 - (C) use digital keyboarding standards for data input such as one space after punctuation, the use of em/en dashes, and smart quotation marks; and
 - (D) develop strategies for capturing digital files while conserving memory and retaining image quality.
- (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) demonstrate proper etiquette and knowledge of acceptable use while in an individual classroom, lab, or on the Internet and intranet;
 - (C) describe the consequences regarding copyright violations including, but not limited to, computer hacking, computer piracy, intentional virus setting, and invasion of privacy;
 - (D) identify the impact of technology applications on society through research, interviews, and personal observation; and
 - (E) demonstrate knowledge of the relevancy of technology to future careers, life-long learning, and daily living for individuals

of all ages.

- (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 locate and acquire desired information on LANs and WANs, including the Internet, intranet, and collaborative software; and
 - (B) apply appropriate electronic search strategies in the acquisition of information including keyword and Boolean search strategies.
- (5) **Information acquisition.** The student acquires electronic information in a variety of formats, with appropriate supervision.
- The student is expected to:
- (A) identify, create, and use files in various formats such as text, bitmapped/vector graphics, image, video, and audio files;
 - (B) demonstrate the ability to access, operate, and manipulate information from secondary storage and remote devices including CD-ROM/laser discs and on-line catalogs; and
 - (C) use on-line help and other documentation.
- (6) **Information acquisition.** The student evaluates the acquired electronic information.
- The student is expected to:
- (A) determine and employ methods to evaluate the electronic information for accuracy and validity;
 - (B) resolve information conflicts and validate information through accessing, researching, and comparing data; and
 - (C) demonstrate the ability to identify the source, location, media type, relevancy, and content validity of available information.
- (7) **Solving problems.** The student uses appropriate computer-based productivity tools to create and modify solutions to problems.
- The student is expected to:
- (A) plan, create, and edit documents created with a word processor using readable fonts, alignment, page setup, tabs, and ruler settings;
 - (B) create and edit spreadsheet documents using all data types, formulas and functions, and chart information;
 - (C) plan, create, and edit databases by defining fields, entering data, and designing layouts appropriate for reporting;

- (D) demonstrate proficiency in the use of multimedia authoring programs by creating linear or non-linear projects incorporating text, audio, video, and graphics;
- (E) create a document using desktop publishing techniques including, but not limited to, the creation of multi-column or multi-section documents with a variety of text-wrapped frame formats;
- (F) differentiate between and demonstrate the appropriate use of a variety of graphic tools found in draw and paint applications;
- (G) integrate two or more productivity tools into a document including, but not limited to, tables, charts and graphs, graphics from paint or draw programs, and mail merge;
- (H) use interactive virtual environments, appropriate to level, such as virtual reality or simulations;
- (I) use technical writing strategies to create products such as a technical instruction guide; and
- (J) use foundation and enrichment curricula in the creation of products.

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

The student is expected to:

- (A) participate with electronic communities as a learner, initiator, contributor, and teacher/mentor;
- (B) complete tasks using technological collaboration such as sharing information through on-line communications;
- (C) use groupware, collaborative software, and productivity tools to create products;
- (D) use technology in self-directed activities by sharing products for defined audiences; and
- (E) integrate acquired technology applications skills, strategies, and use of the word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curricula.

(9) **Solving problems.** The student uses technology applications to

The student is expected to:

facilitate evaluation of work, both process and product.

- (A) design and implement procedures to track trends, set timelines, and review/evaluate progress for continual improvement in process and product; and
- (B) resolve information conflicts and validate information through research and comparison of data.

- (10) **Communication.** The student formats digital information for appropriate and effective communication.

The student is expected to:

- (A) use productivity tools to create effective document files for defined audiences such as slide shows, posters, multimedia presentations, newsletters, brochures, or reports;
- (B) demonstrate the use of a variety of layouts in a database to communicate information appropriately including horizontal and vertical layouts;
- (C) create a variety of spreadsheet layouts containing descriptive labels and page settings;
- (D) demonstrate appropriate use of fonts, styles, and sizes, as well as effective use of graphics and page design to effectively communicate; and
- (E) match the chart style to the data when creating and labeling charts.

- (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, monitor display, Internet documents, and video;
- (B) design and create interdisciplinary multimedia presentations for defined audiences including audio, video, text, and graphics; and
- (C) use telecommunication tools for publishing such as Internet browsers, video conferencing, or distance learning.

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

The student is expected to:

- (A) design and implement procedures to track trends, set timelines, and review and evaluate the product using technology tools such as database managers, daily/monthly planners, and project management tools;

- (B) determine and employ technology specifications to evaluate projects for design, content delivery, purpose, and audience, demonstrating that process and product can be evaluated using established criteria or rubrics;
- (C) select representative products to be collected and stored in an electronic evaluation tool; and
- (D) evaluate the product for relevance to the assignment or task.

Source: The provisions of this §126.12 adopted to be effective September 1, 1998, 22 TexReg 5203.

Chapter 126. Texas Essential Knowledge and Skills for Technology Applications

Subchapter C. High School

Statutory Authority: The provisions of this Subchapter C issued under the Texas Education Code, §28.002, unless otherwise noted.

§126.21. Implementation of Texas Essential Knowledge and Skills for Technology Applications, High School.

The provisions of this subchapter shall supersede §75.123 of this title (relating to Computer Science) beginning September 1, 1998.

Source: The provisions of this §126.21 adopted to be effective September 1, 1998, 22 TexReg 5203.

§126.22. Computer Science I (One Credit).

- (a) General requirements. The prerequisite for this course is proficiency in the knowledge and skills described in §126.12(c) of this title (relating to Technology Applications (Computer Literacy), Grades 6-8). In addition, it is recommended that students have proficiency in the knowledge and skills for Algebra I identified in §111.32(b) of this title (relating to Algebra I (One Credit)) or the equivalent knowledge and skills. This course is recommended for students in Grades 9-12. School districts may use the knowledge and skills described in subsection (c) of this section, the computer science course descriptions for the College Board Advanced Placement or International Baccalaureate programs, or a combination thereof.
- (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) differentiate current programming languages, discuss the use of the languages in other fields of study, and demonstrate knowledge of specific programming terminology and concepts;
- (F) differentiate among the levels of programming languages including machine, assembly, high-level compiled and interpreted languages; and
- (G) demonstrate coding proficiency in a contemporary programming language.

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

The student is expected to:

- (A) demonstrate proficiency in the use of a variety of input devices such as keyboard, scanner, voice/sound recorder, mouse, touch screen, or digital video by appropriately incorporating such components into the product; and
- (B) use digital keyboarding standards for the input of data.

- (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) demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet;
 - (C) investigate measures, such as passwords or virus detection/prevention, to protect computer systems and databases from unauthorized use and tampering; and
 - (D) discuss the impact of computer programming on the World Wide Web (WWW) community.
- (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 local area networks (LANs) and wide area networks (WANs), including the Internet and intranet, in research and resource sharing; and
 - (B) construct appropriate electronic search strategies in the acquisition of information including keyword and Boolean search strategies.
- (5) **Information acquisition.** The student acquires electronic information in a variety of formats, with appropriate supervision.
- The student is expected to:
- (A) acquire information in and knowledge about electronic formats including text, audio, video, and graphics;
 - (B) use a variety of resources, including foundation and enrichment curricula, together with various productivity tools to gather authentic data as a basis for individual and group programming projects; and
 - (C) design and document sequential search algorithms for digital information storage and retrieval.
- (6) **Information acquisition.** The student evaluates the acquired electronic information.
- The student is expected to:
- (A) determine and employ methods to evaluate the design and functionality of the process using effective coding, design, and test data; and

- (B) implement methods for the evaluation of the information using defined rubrics.

(7) **Solving problems.** The student uses appropriate computer-based productivity tools to create and modify solutions to problems.

The student is expected to:

- (A) apply problem-solving strategies such as design specifications, modular top-down design, step-wise refinement, or algorithm development;
- (B) use visual organizers to design solutions such as flowcharts or schematic drawings;
- (C) develop sequential and iterative algorithms and codes programs in prevailing computer languages to solve practical problems modeled from school and community;
- (D) code using various data types;
- (E) demonstrate effective use of predefined input and output procedures for lists of computer instructions including procedures to protect from invalid input;
- (F) develop coding with correct and efficient use of expressions and assignment statements including the use of standard/user-defined functions, data structures, operators/proper operator precedence, and sequential/conditional/repetitive control structures;
- (G) create and use libraries of generic modular code to be used for efficient programming;
- (H) identify actual and formal parameters and use value and reference parameters;
- (I) use control structures such as conditional statements and iterated, pretest, and posttest loops;
- (J) use sequential, conditional, selection, and repetition execution control structures such as menu-driven programs that branch and allow user input; and
- (K) identify and use structured data types of one-dimensional arrays, records, and text files.

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

The student is expected to:

- (A) participate with electronic communities as a learner, initiator, contributor, and teacher/mentor;
- (B) demonstrate proficiency in, appropriate use

of, and navigation of LANs and WANs for research and for sharing of resources;

- (C) extend the learning environment beyond the school walls with digital products created to increase teaching and learning in the foundation and enrichment curricula; and
- (D) participate in relevant, meaningful activities in the larger community and society to create electronic projects.

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

The student is expected to:

- (A) design and implement procedures to track trends, set timelines, and review/evaluate progress for continual improvement in process and product;
- (B) use correct programming style to enhance the readability and functionality of the code such as spacing, descriptive identifiers, comments, or documentation;
- (C) seek and respond to advice from peers and professionals in delineating technological tasks;
- (D) resolve information conflicts and validate information through accessing, researching, and comparing data; and
- (E) create technology specifications for tasks/evaluation rubrics and demonstrate that products/product quality can be evaluated against established criteria.

- (10) **Communication.** The student formats digital information for appropriate and effective communication.

The student is expected to:

- (A) annotate coding properly with comments, indentation, and formatting; and
- (B) create interactive documents using modeling, simulation, and hypertext.

- (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 and monitor displays; and
- (B) publish information in a variety of ways including, but not limited to, software, Internet documents, and video.

- (12) **Communication.** The student uses

The student is expected to:

technology applications to facilitate evaluation of communication, both process and product.

- (A) write technology specifications for planning/evaluation rubrics documenting variables, prompts, and programming code internally and externally;
- (B) seek and respond to advice from peers and professionals in evaluating the product; and
- (C) debug and solve problems using reference materials and effective strategies.

Source: The provisions of this §126.22 adopted to be effective September 1, 1998, 22 TexReg 5203.

§126.23. Computer Science II (One Credit).

(a) General requirements. The prerequisite for this course is proficiency in the knowledge and skills for Computer Science I as identified in §126.22(c) of this title (relating to Computer Science I (One Credit)). This course is recommended for students in Grades 10-12. School districts may use the knowledge and skills described in subsection (c) of this section, the computer science course descriptions for the College Board Advanced Placement or International Baccalaureate programs, or a combination thereof.

(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) identify object-oriented data types and delineate the advantages/disadvantages of object data;
- (B) demonstrate coding proficiency in contemporary programming languages including an object-oriented language; and
- (C) survey the issues accompanying the development of large software systems such as design/implementation teams, software validation/testing, and risk assessment.

(2) **Foundations.** The student uses data

The student is expected to:

- input skills appropriate to the task.
- (A) demonstrate proficiency in the use of a variety of input devices such as keyboard, scanner, voice/sound recorder, mouse, touch screen, or digital video by appropriately incorporating such components into the product; and
 - (B) use digital keyboarding standards for the input of data.
- (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) demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet;
 - (C) investigate measures, such as passwords or virus detection/prevention, to protect computer systems and databases from unauthorized use and tampering; and
 - (D) code modules for the World Wide Web (WWW) community.
- (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) construct search algorithms including linear and binary searches; and
 - (B) compare and contrast search and sort algorithms including linear and binary searches for different purposes and search time.
- (5) **Information acquisition.** The student acquires electronic information in a variety of formats, with appropriate supervision.
- The student is expected to:
- (A) acquire information in and knowledge about electronic formats including text, audio, video, and graphics; and
 - (B) use a variety of resources, including foundation and enrichment curricula, together with various productivity tools to gather authentic data as a basis for individual and group programming projects.
- (6) **Information acquisition.** The student evaluates the acquired
- The student is expected to:
- (A) determine and employ methods to

electronic information.

evaluate the design and functionality of the process using effective coding, design, and test data; and

- (B) implement methods for the evaluation of the information using defined rubrics.

- (7) **Solving problems.** The student uses appropriate computer-based productivity tools to create and modify solutions to problems.

The student is expected to:

- (A) use appropriately and trace recursion in program design comparing invariant, iterative, and recursive algorithms;
- (B) manipulate data structures using string processing;
- (C) use notation for language definition such as syntax diagrams or Backus-Naur forms;
- (D) identify, describe, and use sequential/non-sequential files; multidimensional arrays and arrays of records; and quadratic sort algorithms such as selection, bubble, or insertion, and more efficient algorithms including merge, shell, and quick sorts;
- (E) create robust programs with increased emphasis on design, style, clarity of expression and documentation for ease of maintenance, program expansion, reliability, and validity;
- (F) apply methods for computing iterative approximations and statistical algorithms;
- (G) define and develop code using the concepts of abstract data types including stacks, queues, linked lists, trees, graphs, and information hiding;
- (H) identify and describe the correctness and complexity of algorithms such as divide and conquer, backtracking, or greedy algorithms;
- (I) develop software to solve a school or community problem such as customer relations, design, modular programming, documentation, validation, marketing, or support; and
- (J) research advanced computer science concepts such as applied artificial intelligence, expert systems, robotics, depth-first/breadth-first and heuristic search strategies, multitasking operating systems, or computer architecture, such as reduced instruction set computer (RISC) and complex instruction set computer (CISC).

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

The student is expected to:

- (A) participate with electronic communities as a learner, initiator, contributor, and teacher/mentor;
- (B) demonstrate proficiency in, appropriate use of, and navigation of local area networks (LANs) and wide area networks (WANs) for research and for sharing of resources;
- (C) extend the learning environment beyond the school walls with digital products created to increase teaching and learning in the foundation and enrichment curricula; and
- (D) participate in relevant, meaningful activities in the larger community and society to create electronic projects.

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

The student is expected to:

- (A) demonstrate the ability to read and modify large programs including the design description and process development;
- (B) analyze algorithms using "big-O" notation, best, average, and worst case space techniques;
- (C) compare and contrast design methodologies including top-down and bottom-up;
- (D) analyze models used in development of software including software life cycle models, design objectives, documentation, and support; and
- (E) seek and respond to advice from peers and professionals in delineating technological tasks.

- (10) **Communication.** The student formats digital information for appropriate and effective communication.

The student is expected to:

- (A) annotate coding properly with comments, indentation, and formatting; and
- (B) create interactive documents using modeling, simulation, and hypertext.

- (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 and monitor displays; and

- (B) publish information in a variety of ways including, but not limited to, software, Internet documents, and video.

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

The student is expected to:

- (A) write technology specifications for planning and evaluation rubrics documenting variables, prompts, and program internally and externally;
- (B) seek and respond to advice from peers and professionals in evaluating the product; and
- (C) debug and solve problems using reference materials and effective strategies.

Source: The provisions of this §126.23 adopted to be effective September 1, 1998, 22 TexReg 5203.

§126.24. Desktop Publishing (One Credit).

(a) General requirements. The prerequisite for this course is proficiency in the knowledge and skills described in §126.12(c) of this title (relating to Technology Applications (Computer Literacy), Grades 6-8). 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; and
- (E) demonstrate knowledge of technology terminology and concepts relating them to desktop publishing.

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

The student is expected to:

- (A) demonstrate proficiency in the use of a variety of input devices such as mouse, keyboard, disk/disc, modem, scanner, voice/sound recorder, or digital camera by appropriately incorporating such components into the product; and
- (B) use digital keyboarding standards in word processing such as one space after punctuation, the use of em/en dashes, and smart quotation marks.

- (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) demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet; and
- (C) analyze the impact of desktop publishing on society including concepts related to persuasiveness, marketing, and point of view.

- (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 obtain print and digital information from a variety of electronic resources including, but not limited to, reference software, databases, and libraries of images, citing the source; and
- (B) use strategies to navigate on and access information from local area networks (LANs), wide area networks (WANs), the Internet, and intranet.

- (5) **Information acquisition.** The student acquires electronic information in a variety of formats, with appropriate supervision.
- The student is expected to:
- (A) acquire information in electronic formats including text, audio, video, and graphics, citing the source; and
 - (B) demonstrate the ability to import and export elements from one program to another.
- (6) **Information acquisition.** The student evaluates the acquired electronic information.
- The student is expected to:
- (A) identify and employ a method to evaluate the information; and
 - (B) demonstrate skill in testing the accuracy and validity of the information.
- (7) **Solving problems.** The student uses appropriate computer-based productivity tools to create and modify solutions to problems.
- The student is expected to:
- (A) use desktop publishing methods in foundation and enrichment curricula;
 - (B) identify the tasks in a project and use the tools needed for completion such as word processing, pagination, utility, indexing, graphics, or drawing programs;
 - (C) use electronic productivity tools such as the word processor to edit text including move, copy, cut and paste, and spell check;
 - (D) select and use the categories of type, font, size, style, and alignment appropriate for the task;
 - (E) apply the basic elements of page design including text, graphics, headlines, and white space;
 - (F) distinguish design requirements as they relate to purposes and audiences including one-surface objects, multiple or bound pages, stationery, book jackets/magazine covers, pamphlets, magazines, brochures, and labels; and
 - (G) read and use technical documentation.
- (8) **Solving problems.** The student uses research skills and electronic communication, with appropriate supervision, to create new knowledge.
- The student is expected to:
- (A) develop technical documentation related to desktop publishing;
 - (B) demonstrate the use of technology to participate in self-directed and practical activities;

- (C) extend the learning environment beyond the classroom through the creation and sharing of electronically formatted and published documents via electronic networks;
- (D) synthesize new information from data gathered from interviews, print, and electronic resources; and
- (E) demonstrate that tasks can be accomplished through technological collaboration and 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 evaluation rubrics to evaluate process and product 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) resolve information conflicts and validate information through accessing, researching, and comparing data; and
- (D) 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) define the purpose of the product and identify the specified audience;
- (B) use terms related to typography appropriately including categories of type and type contrasts;
- (C) use the principles of page design to create a product including, but not limited to, leading/kerning, automatic text flow into linked columns, widows/orphans, and text wrap;
- (D) create a master template to include page specifications and other repetitive tasks;
- (E) apply the basics of type measurement for inches and picas;
- (F) use type techniques as graphic elements such as drop cap, decorative letters, or embedded-text frames;
- (G) apply color principles to communicate the mood of the product for the specific

audience;

- (H) incorporate the principles of basic design including, but not limited to, balance, contrast, dominant element, use of white space, consistency, repetition, alignment, and proximity;
- (I) identify the parts and kinds of pages including inside margin, outside margin, gutter, title, and inside pages; and
- (J) use a variety of strategies to create effective designs, such as varying line widths and patterns, and use manipulation tools to stretch, bend, screen, rotate, follow a path, or mirror type.

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

The student is expected to:

- (A) use appropriate media for creating a knowledge base with a broad perspective and communicating to the worldwide community;
- (B) use printing options such as tiling, color separations, collation, and previewing;
- (C) distinguish design and printing requirements as they relate to purposes, audiences, and final output; and
- (D) use styles (style sheets) including a variety of type specifications such as typeface, style, size, alignment, indents, and tabs.

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

The student is expected to:

- (A) identify and employ a method to evaluate the project for design, content delivery, purpose, and audience;
- (B) use electronic project management tools to set milestones for completing projects and reviewing progress;
- (C) seek and respond to advice from peers in evaluating the product;
- (D) create technology specifications for tasks and evaluation rubrics; and
- (E) demonstrate that products and product quality can be evaluated against established criteria.

§126.25. Digital Graphics/Animation (One Credit).

- (a) General requirements. The prerequisite is proficiency in the knowledge and skills described in §126.12(c) of this title (relating to Technology Applications (Computer Literacy), Grades 6-8). 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, The student is expected to:
- (A) use the Internet and retrieve information in electronic formats including text, audio,

with appropriate supervision.

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 that occur through combined usage.

- (7) **Solving problems.** The student uses appropriate computer-based 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, CD-ROM 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 product.

Source: The provisions of this §126.25 adopted to be effective September 1, 1998, 22 TexReg 5203.

§126.26. Multimedia (One Credit).

- (a) General requirements. The prerequisite for this course is proficiency in the knowledge and skills described in §126.12(c) of this title (relating to Technology Applications (Computer Literacy), Grades 6-8). 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) analyze demands for accomplishing multimedia tasks to appropriately use input, processing, output, and primary/secondary storage devices;
- (C) make decisions regarding the selection, acquisition, and use of software in a multimedia classroom/lab 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 necessary vocabulary related to multimedia;
- (F) install and configure appropriate software;
- (G) distinguish between and correctly use process color (RGB and CYMK), spot color, and black/white;
- (H) identify color mixing theories and apply these theories to the creation of new colors in the digital format;
- (I) identify and distinguish among the basic sound editing principles including the addition of effects and manipulation of the wave form;

- (J) identify and use compression schemes for photo, animation, video, and graphics; and
- (K) distinguish between and determine the appropriate application of bitmapped and vector graphics into a multimedia project.
- (2) **Foundations.** The student uses data input skills appropriate to the task. The student is expected to:
- (A) demonstrate proficiency in the use of a variety of electronic input devices including the mouse, keyboard, scanner, voice/sound recorder, disk/disc, video, and digital camera by creating files to be used in multimedia products;
- (B) use digital keyboarding standards for data input such as one space after punctuation, the use of em/en dashes, and smart quotation marks;
- (C) use strategies when digitally capturing files that conserve memory and retain the image integrity; and
- (D) differentiate among audio input.
- (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) demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet;
- (C) model respect of intellectual property when manipulating, morphing, or editing graphics, video, text, and sound; and
- (D) provide examples of the role of multimedia in society.
- (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) apply appropriate electronic search strategies in the acquisition of information including keyword and Boolean search

strategies.

- (5) **Information acquisition.** The student acquires electronic information in a variety of formats, with appropriate supervision.
- The student is expected to:
- (A) acquire information in electronic formats including text, audio, video, and graphics, citing the source; and
 - (B) identify, create, and use available file formats including text, image, video (analog and digital), and audio files.
- (6) **Information acquisition.** The student evaluates the acquired electronic information.
- The student is expected to:
- (A) identify and employ a method to evaluate the design, functionality, and accuracy of the accessed information; and
 - (B) use fundamental concepts of graphic design including visual composition and lighting when analyzing multimedia.
- (7) **Solving problems.** The student uses appropriate computer-based productivity tools to create and modify solutions to problems.
- The student is expected to:
- (A) use foundation and enrichment curricula in the creation of multimedia products;
 - (B) select and integrate computer-based productivity tools, including, but not limited to, word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs to develop and modify solutions to problems and to create new knowledge for multimedia products;
 - (C) use technology tools to create a knowledge base with a broad perspective;
 - (D) apply color principles to communicate the mood of the product for the specific audience;
 - (E) integrate path and cell animation modules appropriately into multimedia products;
 - (F) use the appropriate scripting language to create a multimedia sequence;
 - (G) edit files using 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
 - (H) read and use technical documentation.

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

The student is expected to:

- (A) participate with electronic communities as a learner, initiator, contributor, and teacher/mentor and use technology to participate in self-directed and practical 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;
- (C) integrate and use efficiently and effectively a variety of multimedia programs and tools including linear/non-linear authoring tools, image/video editing tools, compression programs, draw/paint/text creation tools;
- (D) extend the learning environment beyond the school walls through the creation and linking of multimedia products via electronic networks;
- (E) develop technical documentation related to multimedia;
- (F) participate in different roles and jobs of a multimedia production crew including project manager, lead programmer, writer, art director, sound engineer, researcher, animator, and presenter;
- (G) distinguish among and appropriately integrate 3-D modeling, animation, and rendering software into multimedia products;
- (H) import video into the digital format for integration into multimedia products; and
- (I) capture, record, and integrate sampled and Musical Instrument Digital Interface (MIDI) sound in different sound rates, resolutions, and channels.

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

The student is expected to:

- (A) design and implement procedures to track trends, set timelines, and review/evaluate progress for continual improvement in process and product;
- (B) seek and respond to advice from peers and professionals in delineating technological tasks;
- (C) create technology specifications for tasks and rubrics to evaluate products and

- product quality against established criteria; and
- (D) resolve information conflicts and validate information by accessing, researching, and comparing data and demonstrate that products and product quality can be evaluated against established criteria.
- (10) **Communication.** The student formats digital information for appropriate and effective communication.
- The student is expected to:
- (A) identify quality in multimedia design such as consistency, alignment, repetition, and proximity;
- (B) use content selection and presentation for the defined audience and communication purpose; and
- (C) format the multimedia project according to defined output specifications including target audience and viewing environment.
- (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, CD-ROM 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 input from peers and professionals in evaluating the product.

Source: The provisions of this §126.26 adopted to be effective September 1, 1998, 22 TexReg 5203.

§126.27. Video Technology (One Credit).

- (a) General requirements. The prerequisite for this course is proficiency in the knowledge and skills described in §126.12(c) of this title (relating to Technology Applications (Computer Literacy), Grades 6-8). 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 digital and analog video 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 vocabulary related to video technology; and
 - (F) compare and contrast linear and nonlinear editing.
- (2) **Foundations.** The student uses data input skills appropriate to the task. The student is expected to:
- (A) outline differences among electronic input devices as related to video technology; and
 - (B) demonstrate proficiency in the use of a variety of electronic input devices including the keyboard, mouse, disk/disc, modem, scanner, voice/sound recorder, and digital video by incorporating such components into the video-related product.
- (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 and video information, citing sources using

established methods;

- (B) demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet; and
- (C) analyze the impact of video technology on society.

- (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) construct and use appropriate electronic search strategies in the acquisition of information including keyword and Boolean search strategies.

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

The student is expected to:

- (A) acquire information in electronic formats including text, audio, video, and graphics, citing the source;
- (B) engage in preproduction planning by surveying the site and obtaining necessary permits and release forms; and
- (C) acquire information from on-line help and other forms of documentation.

- (6) **Information acquisition.** The student evaluates the acquired electronic information.

The student is expected to:

- (A) identify and employ a method to evaluate the information; and
- (B) demonstrate skill in testing the accuracy and validity of the information.

- (7) **Solving problems.** The student uses appropriate computer-based productivity tools to create and modify solutions to problems.

The student is expected to:

- (A) use foundation and enrichment curricula in the development of video and digital products;
- (B) integrate productivity tools including, but not limited to, video editor, sound editor, word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs to develop and modify solutions to problems for video productions;

- (C) create video technology products for a variety of purposes and audiences; and
- (D) develop technical documentation related to video technology.

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

The student is expected to:

- (A) participate with electronic communities as a learner, initiator, contributor, and teacher/mentor;
- (B) demonstrate proficiency in, appropriate use of, and navigation of LANs and WANs, the Internet, and intranet for research and for sharing of resources;
- (C) participate in relevant activities in the larger community and society to create electronic projects;
- (D) extend the learning environment beyond the school walls through the creation and sharing of digital and video products via electronic networks;
- (E) demonstrate knowledge in composition including ratio of image to frame, position in frame, line of gaze, pan/tilts, movement, and perspective;
- (F) demonstrate proficiency in basic camera techniques including zoom, focus, iris control, white balance, and filters;
- (G) create visual communication by applying the strategies of script writing;
- (H) engage in preproduction activities including storyboarding, script writing, production, contracting, and scheduling;
- (I) utilize lighting techniques including key, fill, and backlight, using incident/reflected light, color temperatures, and filter use;
- (J) use audio techniques, including microphone variances and audio mixers, and edit and integrate digital sounds;
- (K) participate in different roles and jobs of a production crew including executive producer, producer, director, engineer, script writer, editor, camera person, presenters, and audio technicians;
- (L) apply appropriate post production techniques including editing and creating control and/or time coded tracks, transitions, audio levels, background music, and special sound effects;
- (M) apply 2-D and 3-D animation effects to

video;

- (N) use character generators, fonts, colors, and principles of compositions to create graphic images;
- (O) create captions and/or titles for video and graphics;
- (P) use different compression techniques, and/or programs; and
- (Q) demonstrate knowledge in outputting digital video to analog and analog video to digital.

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

The student is expected to:

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

- (10) **Communication.** The student formats digital information for appropriate and effective communication.

The student is expected to:

- (A) use font attributes and color to ensure that products are appropriate for the defined audience and communication purpose;
- (B) use white space and graphics to ensure that products are appropriate for the defined audience and communication purpose;
- (C) use camera perspective to ensure that products are appropriate for the defined audience and communication purpose; and
- (D) use content selection and presentation to ensure that products are appropriate for the defined audience and communication purpose.

- (11) **Communication.** The student delivers the product electronically in

The student is expected to:

- (A) publish information in a variety of ways

a variety of media, with appropriate supervision.

including, but not limited to, printed copy or monitor display; and

- (B) publish information in saved files, Internet documents, CD-ROM 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) evaluate the project for design, content delivery, purpose, and audience using established criteria;
- (B) seek and respond to advice from peers and professionals in evaluating the product; and
- (C) research the best method of distribution, number of copies of finished product, and appropriate method for promoting product.

Source: The provisions of this §126.27 adopted to be effective September 1, 1998, 22 TexReg 5203.

§126.28. Web Mastering (One Credit).

- (a) General requirements. The prerequisite for this course is proficiency in the knowledge and skills described in §126.12(c) of this title (relating to Technology Applications (Computer Literacy), Grades 6-8). 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 use appropriately 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 vocabulary related to web mastering and delineate between the Internet and an intranet;
- (F) summarize the technical needs of a World Wide Web (WWW) server including Random Access Memory (RAM), hard disk capacity, Central Processing Unit (CPU) speed, methods of connectivity, and appropriate software; and
- (G) summarize the development of Internet protocols including, but not limited to, hypertext transfer protocol (http), gopher, file transfer protocol (ftp), telnet, and wide area information system (wais).

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

The student is expected to:

- (A) outline differences among a variety of electronic input devices; and
- (B) demonstrate proficiency in the use of a variety of electronic input devices such as keyboard, scanner, voice/sound recorder, mouse, touch screen or digital video by incorporating such components while publishing WWW pages.

- (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) demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet; and
- (C) analyze the impact of the WWW on society through research, interviews, and personal observation.

- (4) **Information acquisition.** The student uses a variety of strategies to acquire information from electronic resources, with appropriate

The student is expected to:

- (A) use local area networks (LANs) and wide area networks (WANs) including the

- supervision.
- Internet and intranet in research and resource sharing;
- (B) construct appropriate search strategies in the acquisition of information from the Internet including keyword and Boolean search strategies; and
 - (C) obtain Uniform Resource Locators (URLs) and distinguish among the protocols including hypertext transfer protocol (http), gopher, file transfer protocol (ftp), telnet, and wide area information system (wais).
- (5) **Information acquisition.** The student acquires electronic information in a variety of formats, with appropriate supervision.
- The student is expected to:
- (A) acquire information in electronic formats including text, audio, video, and graphics, citing the source; and
 - (B) identify, create, and use available file formats including text, image, video (analog and digital), and audio files.
- (6) **Information acquisition.** The student evaluates the acquired electronic information.
- The student is expected to:
- (A) determine and employ methods to evaluate the design (for content delivery) and functionality (for navigation and interaction) of WWW pages and compare the method with other established methods;
 - (B) demonstrate skill in testing the accuracy of information; and
 - (C) investigate and choose electronic security methods for a web server to protect from unauthorized access and negative intentions.
- (7) **Solving problems.** The student uses appropriate computer-based productivity tools to create and modify solutions to problems.
- The student is expected to:
- (A) use technology tools to create a knowledge base with a broad perspective;
 - (B) select and integrate appropriate productivity tools including, but not limited to, word processor, database, spreadsheet, telecommunication, draw, paint, and utility programs into the creation of WWW documents;
 - (C) use foundation and enrichment curricular content in the creation of WWW pages;
 - (D) create WWW pages using specific authoring tools such as text-based editing

programs or graphical-based editing programs;

- (E) read, use, and develop technical documentation;
- (F) create and edit WWW documents using established design principles including consistency, repetition, alignment, proximity, ratio of text to white space, image file size, color use, font size, type, and style;
- (G) demonstrate the ability to control access to the WWW site via password controls and global access/deny controls; and
- (H) establish a folder/directory hierarchy for storage of a web page and its related or linked files.

- (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 proficiency in, appropriate use of, and navigation of LANs, WANs, the Internet, and intranet for research and for sharing of resources;
- (B) extend teaching and learning in the local environment to the worldwide community through the creation and sharing of WWW documents;
- (C) synthesize and generate new information from data gathered from electronic and telecommunications resources;
- (D) create and format WWW documents containing bookmarks of on-line resources and share them electronically;
- (E) demonstrate the use of WWW pages, collaborative software, and productivity tools to create products;
- (F) participate with electronic communities as a learner, initiator, contributor, and teacher/mentor; and
- (G) participate in relevant, meaningful activities in the larger community and society to create electronic projects.

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

The student is expected to:

- (A) design and implement procedures to track trends, set timelines, and review/evaluate progress for continual improvement in process and product;
- (B) seek and respond to advice from peers and

- professionals in delineating technological tasks;
- (C) create technology specifications for tasks and evaluation rubrics; and
 - (D) resolve information conflicts and validate information through accessing, researching, and comparing data.
- (10) **Communication.** The student formats digital information for appropriate and effective communication.
- The student is expected to:
- (A) use hypertext linking appropriately when creating WWW pages;
 - (B) develop interactivity for the web server via scripting additions such as Common Gateway Interface (CGI), Java Script, or JAVA; and
 - (C) demonstrate the ability to conduct secure transactions from the web server to the client.
- (11) **Communication.** The student delivers the product electronically in a variety of media, with appropriate supervision.
- The student is expected to:
- (A) synthesize and publish information in a variety of ways including, but not limited to, printed copy, monitor display, Internet documents, and video; and
 - (B) identify and use LANs, WANs, and remote resources to exchange and publish information.
- (12) **Communication.** The student uses technology applications to facilitate evaluation of communication, both process and product.
- The student is expected to:
- (A) create technology specifications for tasks and evaluation rubrics; and
 - (B) seek and respond to input from peers and professionals in evaluating the product.

Source: The provisions of this §126.28 adopted to be effective September 1, 1998, 22 TexReg 5203.

§126.29. Independent Study in Technology Applications (One Credit).

- (a) General requirements. The prerequisite for this course is completion of a high school technology applications course as identified in this subchapter and permission of the instructor/mentor for Independent Study in Technology Applications. This course may be taken at Grades 10-12.
- (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) make decisions regarding the selection, acquisition, and use of software taking under consideration its quality, appropriateness, effectiveness, and efficiency;
- (C) delineate and make necessary adjustments regarding compatibility issues including, but not limited to, digital file formats and cross platform connectivity; and
- (D) use appropriate technology terminology in the independent study course.

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

The student is expected to:

- (A) demonstrate proficiency in the use of a variety of electronic input devices including the mouse, keyboard, scanner, voice/sound recorder, disk/disc, video, and digital camera as appropriate; and
- (B) use digital keyboarding standards for data input such as one space after punctuation, the use of em/en dashes, and smart quotation marks.

- (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) demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet; and
- (C) model respect of intellectual property

when manipulating, morphing, or editing graphics, video, text, and sound.

- (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 local area networks (LANs) and wide area networks (WANs), including the Internet and intranet, in research and resource sharing;
 - (B) apply appropriate search strategies in the acquisition of information from the Internet including keyword and Boolean search strategies; and
 - (C) pose hypotheses/questions related to a selected problem.
- (5) **Information acquisition.** The student acquires electronic information in a variety of formats, with appropriate supervision.
- The student is expected to:
- (A) acquire information using appropriate research strategies and a variety of electronic formats, including text, audio, video, and graphics, citing the source; and
 - (B) identify, create, and use available file formats including text, image, video (analog and digital), and audio files.
- (6) **Information acquisition.** The student evaluates the acquired electronic information.
- The student is expected to:
- (A) identify and employ a method to evaluate the design, functionality, and accuracy of the accessed information; and
 - (B) analyze information for validity and relevance in the confirmation, testing, and solution of the hypotheses and questions.
- (7) **Solving problems.** The student uses appropriate computer-based productivity tools to create and modify solutions to problems.
- The student is expected to:
- (A) develop and apply advanced technology applications skills;
 - (B) identify and solve problems, individually and with input from peers and professionals, utilizing research methods and advanced technology applications skills used in a selected profession or discipline;
 - (C) select and integrate appropriate productivity tools including, but not limited to, word processor, database, spreadsheet, telecommunication, draw, paint, and utility programs into the

creation of products;

- (D) use foundation and enrichment curricular content in the creation of products;
- (E) synthesize and generate new information from data gathered from electronic and telecommunications resources; and
- (F) read and use technical documentation.

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

The student is expected to:

- (A) work with a mentor to determine problem to be solved, hypotheses, and strategies to accomplish task;
- (B) develop products that meet standards identified by the selected profession or discipline;
- (C) produce original work to solve the identified problem and publish the product in electronic media and print;
- (D) participate with electronic communities as a learner, initiator, contributor, and teacher/mentor; and
- (E) participate in relevant, meaningful activities in the larger community and society to create electronic projects.

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

The student is expected to:

- (A) design and implement procedures to track trends, set timelines, and review/evaluate progress for continual improvement in process and product;
- (B) produce documentation to illustrate the progress of the project including, but not limited to journals, logs, videos, pictorial documentation, multimedia products, and printed books; and
- (C) seek and respond to input from peers and professionals in delineating technological tasks and problem solving.

- (10) **Communication.** The student formats digital information for appropriate and effective communication.

The student is expected to:

- (A) format the developed projects according to defined output specifications including target audience and viewing environment; and
- (B) present findings to a panel for comment and professional response.

- (11) **Communication.** The student delivers the product electronically in a variety of media, with appropriate supervision.
- The student is expected to:
- (A) determine and implement the best method of presenting or publishing findings;
 - (B) synthesize and publish information in a variety of ways including, but not limited to, printed copy, monitor display, Internet documents, and video; and
 - (C) use LANs, WANs, and remote resources to exchange and publish information.
- (12) **Communication.** The student uses technology applications to facilitate evaluation of communication, both process and product.
- The student is expected to:
- (A) design and implement procedures to track trends, set timelines, and review and evaluate the product using technology tools such as database managers, daily/monthly planners, and project management tools;
 - (B) determine and employ technology specifications to evaluate projects for design, content delivery, purpose, and audience, demonstrating that process and product can be evaluated using established criteria or rubrics;
 - (C) seek and respond to input from peers and professionals in evaluating the product; and
 - (D) make necessary revisions and/or proceed to the next stage of study.

Source: The provisions of this §126.29 adopted to be effective September 1, 1998, 22 TexReg 5203.