

Computer Technology

Keyboarding 4-8

(Joint Course with Business Technology Approved 10/29/10 for that area)

The student will develop skills in operating a keyboard by touch with emphasis on entering the alphabet, numbers, and symbols with proper technique.

Recommended Prerequisite: NA

Grades: 4-8

Computer Technology

Keyboarding 4-8

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard: 1.0

The student will operate and maintain the workstation.

Standard 2.0

The student will operate the alphabetic, numeric, and symbol keyboard using the touch system.

Standard 3.0

The student will format simple documents (letters, reports, articles).

Standard 4.0

The student will apply standard rules of spelling, punctuation, grammar, and capitalization.

Computer Technology

Keyboarding 4-8

(Joint Course with Business Technology Approved 10/29/10 for that area)

Course Description

The student will develop skills in operating a keyboard by touch with emphasis on entering the alphabet, numbers, and symbols with proper technique. *(A computerized workstation with dedicated software for each student is necessary. Examples: netbook, keyboarding training station, laptop, or desktop. If on-line instruction is the vehicle used for instruction, Internet connectivity is essential.)*

Standard: 1.0

The student will operate and maintain the workstation.

Learning Expectations

The student will:

- 1.1 Interpret computer and keyboarding terminology.
- 1.2 Manage the computer system and related software.
- 1.3 Demonstrate appropriate lab safety skills.

Student Performance Indicators: Evidence Standard is Met

The student:

- Uses and applies computer and keyboarding terminology.
- Identifies the functions of computer components.
- Uses input devices, such as mouse, keyboard, and voice.
- Uses output devices such as a printer.
- Saves, retrieves, and deletes files.
- Assesses the potential safety hazards in a computer lab.
- Demonstrates lab safety knowledge with 100% score on lab safety quiz.

Sample Performance Task

- Use a check sheet to evaluate knowledge of computer and keyboarding terminology.
- In a group project review and analyze possible safety hazards in a computer lab.

Computer Technology

Keyboarding 4-8

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 2.0

The student will operate the alphabetic, numeric, and symbol keyboard using the touch system.

Learning Expectations

The student will:

- 2.1 Demonstrate correct body and hand position for keyboarding.
- 2.2 Apply the touch system to develop keyboarding skills using the alphabetic, numeric, and symbol keys.
- 2.3 Observe a demonstration on voice input.

Student Performance Indicators: Evidence Standard is Met

The student:

- Exhibits proper posture and fingering techniques for the alphanumeric keyboard.
- Applies the touch-keying system to develop basic skills on the alphanumeric keyboard at a rate of 15 gross words a minute (GWAM) for a one-minute timed writing.
- Practices proper response patterns to gain speed and accuracy.
- Uses the correct touch system to reach the numeric and symbol keys.

Sample Performance Task

- Using the touch system, key the alphabet and symbols keys.
- Use a technique check sheet to evaluate proper techniques at the keyboard.
- Use the touch system to perform daily drills on sentences and paragraphs from straight copy.
- Perform drills on sentences and paragraphs utilizing the mouse, keyboard, voice, and print completed assignments.
- Using the touch system, key the numbers on numeric keypad.
- Using any word processing or keyboard program, the students will take a timed keyboarding test to determine their gross words per minute.

Computer Technology

Keyboarding 4-8

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 3.0

The student will format simple documents (letters, reports, articles).

Learning Expectations

The students will:

- 3.1 Key documents applying formatting functions for setting margins, tabs, and paragraph spacing.
- 3.2 Demonstrate proper keying and formatting technique for simple letters, reports, and articles.
- 3.3 The student will apply typography guidelines.
- 3.3 Explore the gathering of information using a variety of electronic resources, including but not limited to the Internet.

Student Performance Indicators: Evidence Standard is Met

The student:

- Uses the touch system and word processing software to key, edit, save, and print documents.
- Keys a personal business letter meeting acceptable mailability standards.
- Keys a report and an article meeting acceptable mailability standards.
- Use a variety of technology resources to address a variety of tasks and problems.
- Saves documents and prints hard copy.

Sample Performance Task

- Key and format.
- Key and format a cover sheet for a book report/assignment.
- Key and format lists.
- Key and format a simple announcement, personal letters, article, and report memorandums applying formatting and typography guidelines.
- Perform drills applying formatting functions to set margins, tabs, and paragraph spacing on a document.
- Use technology resources to research then create a report on a given topic.

Computer Technology

Keyboarding 4-8

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 4.0

The student will apply standard rules of spelling, punctuation, grammar, and capitalization.

Learning Expectations

The student will:

- 4.1 Demonstrate proper keying and formatting technique for written communications.
- 4.2 Compose and proofread documents for accuracy, content, grammar, spelling, and punctuation.

Student Performance Indicators: Evidence Standard is Met

The student:

- Applies spelling, punctuation, grammar, and capitalization to documents.
- Uses correct sentence structure in composing and formatting text.

Sample Performance Task

- Compose and key sentences and paragraphs applying spelling, punctuation, and capitalization.
- Compose and key sentences and paragraphs using correct grammar.
- Print a personal business letter and a one-page report. Correct errors and print.

**Computer Technology
Computer Literacy
(First Reading 4/15/11)**

This course is designed to improve student use and understanding of information age technology. Mastering the standards will enable students to learn about and effectively access and use technology resources. Students will use a variety of computer applications and tools and will explore the social, historical and ethical implications of using computer technology. It is expected that every student will demonstrate proficiency using these standards by the time the student completes high school. These standards can be met through this course or activities incorporated into other curriculum areas. (Alternatively, students may demonstrate mastery of these standards as a result of grades K-8 technology experiences.) The course is designed so that it may be taught with a minimum number of computers.

Recommended Prerequisite: none

Recommended Grades: **9, 10**

Recommended Credit: **1 Credit**

**Computer Technology
Computer Literacy
(First Reading 4/15/11)**

Standard 1.0

The student will develop and apply concepts related to human relations, safety, career development, communications, and leadership skills for a global workplace.

Standard 2.0

Students will understand basic operations and concepts of technology.

Standard 3.0

Students will understand the importance of social, ethical, and human issues associated with technology.

Standard 4.0

Students will use technology productivity tools.

Standard 5.0

Students will use technology communications tools.

Standard 6.0

Students will select and use appropriate technology research tools.

Standard 7.0

Students will utilize technology problem-solving and decision-making tools.

**Computer Technology
Computer Literacy
(First Reading 4/15/11)**

Course Description

This course is designed to improve student use and understanding of information age technology. Mastering the standards will enable students to learn about and effectively access and use technology resources. Students will use a variety of computer applications and tools and will explore the social, historical and ethical implications of using computer technology. It is expected that every student will demonstrate proficiency using these standards by the time the student completes high school. These standards can be met through this course or activities incorporated into other curriculum areas. (Alternatively, students may demonstrate mastery of these standards as a result of grades K-8 technology experiences.) The course is designed so that it may be taught with a minimum number of computers.

Standard 1.0

The student will develop and apply concepts related to human relations, safety, career development, communications, and leadership skills for a global workplace.

Learning Expectations

The student will:

- 1.1 Demonstrate sensitivity to personal, societal, corporate, and governmental responsibility to community and global issues.
- 1.2 Demonstrate the interpersonal, teamwork, and leadership skills needed to function in diverse business settings, including the global marketplace.
- 1.3 Communicate effectively as writers, listeners, and speakers in diverse social and business settings.
- 1.4 Apply the critical-thinking and soft skills needed to function in students' multiple roles as citizens, consumers, workers, managers, business owners, and directors of their own futures.
- 1.5 Analyze and follow policies for managing legal and ethical issues in organizations and in a technology-based society.
- 1.6 Investigate the life-long learning skills that foster flexible career paths and confidence in adapting to a workplace that demands constant retooling.

Computer Technology
Computer Literacy
(First Reading 4/15/11)

- 1.7 Assess personal skills, abilities, aptitudes, and personal strengths and weaknesses as they relate to career exploration and apply knowledge gained from individual assessment to research and develop an individual career plan.
- 1.8 Examine the goals and principles of a professional organization. (Ex. Computer Science Club, BETA Club, FBLA)
- 1.9 Investigates online and office safety procedures and passes a written safety examination with 100% accuracy.
- 1.10 Demonstrates parliamentary procedure through office staff/chapter organizational meetings.
- 1.11 Apply appropriate typography concepts to industry documents.

Student Performance Indicator: Evidence Standard Is Met

The student:

- Develops a presentation, applying typography guidelines, that illustrates ethical and legal behavior in written and spoken portions of the presentation, and recognizes the implications of violating federal and state laws related to the use of technology and copyrighted materials.
- Models and role-plays examples of behavioral expectations in the workplace, including soft skills and team building.
- Demonstrates skills necessary for safety and environmental protection in the workplace and passes a written safety exam with 100% accuracy.
- Develops a presentation, applying typography guidelines illustrating ethical behavior in what are written, spoken or presented and legal issues recognizing the implications of violating federal and state laws including the use of technology and copyrighted materials.
- Illustrates modeling and role playing of examples of behavioral expectations in the workplace including soft skills and team building.
- Demonstrates parliamentary procedure through office staff/chapter organizational meetings.
- Participates in professional development leadership activities.
 - Creates a design and lays out a membership brochure to promote membership.
 - Creates a design and lays out a flyer to promote the local activities of the charitable organization such as the Red Cross.
- Demonstrates progress toward developing skills and behaviors through portfolios and reflection.

**Computer Technology
Computer Literacy
(First Reading 4/15/11)**

Sample Performance Task

- Design and produce a team project on legal and ethical issues that includes issues and penalties for plagiarism, copied text that does not require permission, and copied data that requires permission and the process used in obtaining permission. Obtain formal permission for use of quotations, art form, design, music, and photographs. Develop and present a total team project utilizing various technology components and appropriate typography concepts.
- Use the Internet to research health and safety issues in a computer work environment.
- Compose and assemble a safety manual using appropriate typography concepts. Develop a presentation on right-to-know laws and any other laws required for safety.

**Computer Technology
Computer Literacy
(First Reading 4/15/11)**

Standard 2.0

Students will understand basic operations and concepts of technology

Learning Expectations

- 2.1 Students demonstrate a sound understanding of the nature and operation of technology systems.
- 2.2 Students are proficient in the use of technology.

Performance Indicators

All students should have opportunities to demonstrate the following performances. Prior to completion of Grade 12 students will:

- Make informed choices among technology systems, resources, and services.

Sample Performance Task

- Using the internet, students will research various technology systems, resources and services as they relate to computer usage and prepare a presentation on the research.

**Computer Technology
Computer Literacy
(First Reading 4/15/11)**

Standard 2.0

Students will understand the importance of social, ethical, and human issues associated with technology.

Learning Expectations

- 3.1 Students understand the ethical, cultural, and societal issues related to technology.
- 3.2 Students practice responsible use of technology systems, information, and software.
- 3.3 Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Performance Indicators

All students should have opportunities to demonstrate the following performances. Prior to completion of Grade 12 students will:

- Identify capabilities and limitations of contemporary and emerging technology resources and assess the potential of these systems and services to address personal, lifelong learning, and workplace needs.
- Analyze advantages and disadvantages of widespread use and reliance on technology in the workplace and in society as a whole.
- Make informed choices among technology systems, resources, and services.
- Demonstrate and advocate for legal and ethical behaviors among peers, family, and community regarding the use of technology and information.

Sample Performance Task

Students will investigate current copyright laws as they relate to electronic media and report the findings.

**Computer Technology
Computer Literacy
(First Reading 4/15/11)**

Standard 4.0

Students will use technology productivity tools.

Learning Expectations

- 4.1 Students use technology tools to enhance learning, increase productivity, and promote creativity.
- 4.2 Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.

Performance Indicators

All students should have opportunities to demonstrate the following performances. Prior to completion of Grade 12 students will:

- Use technology tools and resources for managing and communicating personal/professional information (e.g., finances, schedules, addresses, purchases, correspondence).
- Investigate and apply expert systems, intelligent agents, and simulations in real-world situations

Sample Performance Task

Students will develop a portfolio of word processing, database, spreadsheet, graphics, and other software application samples of their work.

**Computer Technology
Computer Literacy
(First Reading 4/15/11)**

Standard 5.0

Students will use technology communications tools.

Learning Expectations

The students will:

- 5.1 Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
- 5.2 Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Student Performance Indicators: Evidence Standard is Met

The student:

All students should have opportunities to demonstrate the following performances. Prior to completion of Grade 12 students will:

- Use technology tools and resources for managing and communicating personal/professional information (e.g., finances, schedules, addresses, purchases, correspondence).
- Routinely and efficiently use online information resources to meet needs for collaboration, research, publication, communication, and productivity.
- Select and apply technology tools for research, information analysis, problem solving, and decision making in content learning.
- Collaborate with peers, experts, and others to contribute to a content-related knowledge base by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works.

Sample Performance Task

Organize students into small workgroups. Have each workgroup brainstorm and debate the pros and cons of the use of electronic media as it relates to legal and ethical responsibilities.

**Computer Technology
Computer Literacy
(First Reading 4/15/11)**

Standard 6.0

Students will select and use appropriate technology research tools.

Learning Expectations

- 6.1 Students use technology to locate, evaluate, and collect information from a variety of sources.
- 6.2 Students use technology tools to process data and report results.
- 6.3 Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

Performance Indicators

All students should have opportunities to demonstrate the following performances. Prior to completion of Grade 12 students will:

- Evaluate technology-based options, including distance and distributed education, for lifelong learning.
- Routinely and efficiently use online information resources to meet needs for collaboration, research, publication, communication, and productivity.
- Select and apply technology tools for research, information analysis, problem solving, and decision making in content learning.
- Investigate and apply expert systems, intelligent agents, and simulations in real-world situations.
- Collaborate with peers, experts, and others to contribute to a content-related knowledge base by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works.

Sample Performance Task

- Given a problem the student will choose the appropriate electronic method for using research to solve the problem.

**Computer Technology
Computer Literacy
(First Reading 4/15/11)**

Standard 7.0

Students will utilize technology problem-solving and decision-making tools.

Learning Expectations

- 7.1 Students use technology resources for solving problems and making informed decisions.
- 7.2 Students employ technology in the development of strategies for solving problems in the real world.

Performance Indicators

All students should have opportunities to demonstrate the following performances. Prior to completion of Grade 12 students will:

- Routinely and efficiently use online information resources to meet needs for collaboration, research, publication, communication, and productivity.
- Investigate and apply expert systems, intelligent agents, and simulations in real-world situations.
- Collaborate with peers, experts, and others to contribute to a content-related knowledge base by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works.

Sample Performance Task

- Student will use electronic media to research, solve and present the solution to a given problem.

Computer Technology
Computer Applications
(Joint Course with Business Technology Approved 10/29/10 for that area)

This course is designed to develop computer technology skills. Students will use a variety of computer software and hardware tools and features of an electronic information network. Students will explore the social, business, and ethical issues of using computer technology. The students will develop skills that will assist them with efficient production of word processing documents, spreadsheets, databases, and presentations.

Recommended Prerequisite or concurrent: Keyboarding

Suggested Prerequisite or concurrent with: Document Formatting

Grades: 9-10

Recommended Credit 1 Credit

Computer Technology
Computer Applications
(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 1.0

The student will develop and apply concepts related to human relations, safety, career development, communications, and leadership skills for a global workplace.

Standard 2.0

The student will examine new and emerging technologies and evaluate the impact and applications of computers in society.

Standard 3.0

The student will apply skills appropriate to the computer operating system and the keyboard.

Standard 4.0

Apply mailability standards to all software output.

Standard 5.0

The student will accurately create a variety of word processing documents.

Standard 6.0

The student will create and design spreadsheets to produce and manipulate alpha/numeric data.

Standard 7.0

The student will develop database skills to organize and maintain information.

Standard 8.0

The student will design a multimedia presentation.

Standard 9.0

The student will examine network, hardware, software, and programming applications.

Computer Technology

Computer Applications

(Joint Course with Business Technology Approved 10/29/10 for that area)

Course Description

This course is designed to develop computer technology skills. Students will use a variety of computer software and hardware tools and features of an electronic information network. Students will explore the social, business, and ethical issues of using computer technology. The students will develop skills that will assist them with efficient production of word processing documents, spreadsheets, databases, and presentations. (This course requires a computerized workstation for each student with operating system, word processing, database, spreadsheet, presentation, and networking resident software.)

Standard 1.0

The student will develop and apply concepts related to human relations, safety, career development, communications, and leadership skills for a global workplace.

Learning Expectations

The student will:

- 1.1 Demonstrate sensitivity to personal, societal, corporate, and governmental responsibility to community and global issues.**
- 1.2 Demonstrate the interpersonal, teamwork, and leadership skills needed to function in diverse business settings, including the global marketplace.**
- 1.3 Communicate effectively as writers, listeners, and speakers in diverse social and business settings.**
- 1.4 Apply the critical-thinking and soft skills needed to function in students' multiple roles as citizens, consumers, workers, managers, business owners, and directors of their own futures.**
- 1.5 Analyze and follow policies for managing legal and ethical issues in organizations and in a technology-based society.**
- 1.6 Investigate the life-long learning skills that foster flexible career paths and confidence in adapting to a workplace that demands constant retooling.**
- 1.7 Assess personal skills, abilities, aptitudes, and personal strengths and weaknesses as they relate to career exploration and apply knowledge gained from individual assessment to research and develop an individual career plan.**
- 1.8 Examine the goals and principles of a professional organization.**

Computer Technology

Computer Applications

(Joint Course with Business Technology Approved 10/29/10 for that area)

(Ex. Computer Science Club, BETA Club, FBLA)

- 1.9 Investigates online and office safety procedures and passes a written safety examination with 100% accuracy.**
- 1.10 Demonstrates parliamentary procedure through office staff/chapter organizational meetings.**
- 1.11 Apply appropriate typography concepts to industry documents.**

Student Performance Indicator: Evidence Standard Is Met

The student:

- Develops a presentation, applying typography guidelines, that illustrates ethical and legal behavior in written and spoken portions of the presentation, and recognizes the implications of violating federal and state laws related to the use of technology and copyrighted materials.
- Models and role-plays examples of behavioral expectations in the workplace, including soft skills and team building.
- **Demonstrates skills necessary for safety and environmental protection in the workplace and passes a written safety exam with 100% accuracy.**
- **Develops a presentation, applying typography guidelines illustrating ethical behavior in what are written, spoken or presented and legal issues recognizing the implications of violating federal and state laws including the use of technology and copyrighted materials.**
- **Illustrates modeling and role playing of examples of behavioral expectations in the workplace including soft skills and team building.**
- **Demonstrates parliamentary procedure through office staff/chapter organizational meetings.**
- **Participates in professional development leadership activities.**
 - **Creates a design and lays out a membership brochure to promote membership.**
 - **Creates a design and lays out a flyer to promote the local activities of the charitable organization such as the Red Cross.**
- **Demonstrates progress toward developing skills and behaviors through portfolios and reflection.**

Computer Technology
Computer Applications
(Joint Course with Business Technology Approved 10/29/10 for that area)

Sample Performance Task

- Design and produce a team project on legal and ethical issues that includes issues and penalties for plagiarism, copied text that does not require permission, and copied data that requires permission and the process used in obtaining permission. Obtain formal permission for use of quotations, art form, design, music, and photographs. Develop and present a total team project utilizing various technology components and appropriate typography concepts.
- Use the Internet to research health and safety issues in a computer work environment.
- Compose and assemble a safety manual using appropriate typography concepts. Develop a presentation on right-to-know laws and any other laws required for safety.

Computer Technology
Computer Applications
(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 2.0

The student will examine new and emerging technologies and evaluate the impact and applications of computers in society.

Learning Expectations

The student will:

- 2.1 Analyze and explore the use and impact of computer technology on individual lives, employment opportunities, and various industries such as business, recreation, medical, education and entertainment.**
- 2.2 Explore emerging computer technologies and forecast future trends.**
- 2.3 Analyze different types of computer applications and the types of hardware and software needed to complete each.**

Student Performance Indicators: Evidence Standard Is Met

The student:

Compares and contrasts the benefits and limitations of computer technology in various industries.
Researches and reports on current trends and emerging technologies through the use of videos, Internet, magazines, newspapers, etc.
Connects potential employment opportunities to emerging technologies.

Sample Performance Task

In assigned work groups, research and identify ways technology affects each team member.

Each student will research and analyze an emerging technology and present it to the class.

Computer Technology
Computer Applications
(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 3.0

The student will apply skills appropriate to the computer operating system and the keyboard.

The student will:

- 3.1 Operate the alphabetic, numeric, and special characters on the keyboard using the touch system.**
- 3.2 Demonstrate speed and accuracy using the touch system of keying by attaining a minimum of 35 NWAM on a two-minute timed writing.**
- 3.3 Apply operating system commands in the use of computer components and functions.**
- 3.4 Demonstrate proficiency in the care and operation of computer technology.**

Student Performance Indicator: Evidence Standard Is Met

The student:

Applies correct body and hand position for keyboarding.
Uses the touch system to reach the alphabetic, numeric and special characters keys.
Keys a minimum of 35 NWAM on a two-minute timed writing.
Demonstrates the features of the operating system.
Utilizes the operating system environment to:
 Analyze the types of files shown in a directory.
 Create directories (folders) and sub directories.
 Rename existing files and directories (folders).
 Save or move files to a variety of storage media.

Sample Performance Task

Students will complete a one-minute timed writing achieving a minimum of 35 NWAM.
The student will use components and functions of the resident operating system.

Computer Technology
Computer Applications
(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 4.0

Apply mailability standards to all software output.

Learning Expectations

- 4.1 Apply appropriate capitalization, punctuation, number expression, and grammar concepts to produce mailable documents.
- 4.2 Revise and critique documents using proofreading and editing marks.**

Student Performance Indicator: Evidence Standard is Met

The student:

- Applies language arts skills to all documents.
- Demonstrates document productivity by using appropriate proofreading and editing skills.
- Inputs, edits, and formats documents for a specific communication project.

Sample Performance Task

- Students will key and revise a document containing grammatical, punctuation, spelling, and number expression errors indicated by proofreader marks.

Computer Technology
Computer Applications
(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 5.0

The student will create a variety of word processing documents.
Learning Expectations

The student will:

- 5.1 Differentiate between the functions and terminology of word processing software.
- 5.2 Apply accurate formatting skills to create and revise a variety of academic and business documents. (*CLE 3101.1.2, CLE 3102.1.2, CLE 3102.4.2, CLE 3108.1.2, CLE 3108.4.7, CLE 3108.4.8*)

Student Performance Indicators: Evidence Standard Is Met

The student:

Creates a variety of business documents (such as)

-  Memo
-  Letters
-  Agenda
-  News releases
-  Minutes
-  Tables (Tabs and Table Feature)
-  Business Reports
-  Academic Reports (MLA, APA or other accepted format)

Designs documents applying typography concepts.

Inputs and formats documents for a specific communication project.

Inserts and formats graphics.

Demonstrates document productivity by using appropriate proofreading skills and editing skills.

Sample Performance Task

The student will input and format a variety of documents for a specific communications project.

Computer Technology
Computer Applications
(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 6.0

The student will create and design spreadsheets to produce and format data.

Learning Expectations

The student will:

- 6.1 Compare and contrast the uses of word processing and spreadsheet software.**
- 6.2 Differentiate between the functions and terminology of spreadsheet software.**
- 6.3 Analyze and construct functions and formulas. *(CLE 3102.1.7, CLE 3102.2.1, CLE 3102.3.6, CLE 3102.3.1, CLE 3102.3.5, CLE 3102.3.6, CLE 3102.3.9, CLE 3103.1.7, CLE 3103.2.3, CLE 3108.1.7,)*
- 6.4 Create charts and graphs. *(CLE 3102.1.2, CLE 3102.5.1, CLE 3102.5.2, CLE 3101.1.2, CLE 3103.2.4, CLE 3103.3.2, CLE 3103.3.5, CLE 3103.5.1, CLE 3103.5.2, CLE 3103.5.3, CLE 3103.5.4, CLE 3108.1.2, CLE 3108.2.3, CLE 3108.5.1)*

Student Performance Indicators: Evidence Standard Is Met

The student:

Demonstrates the functions and terminology of spreadsheet software.

Creates spreadsheets using appropriate inputting, editing, and formatting skills.

- **Develops and applies functions and formulas.**
- **Incorporates graphic and chart elements.**
- **Sets up print specifications and prints.**

Sample Performance Task

Divide the class into groups of two and have them create a spreadsheet with provided information concerning an organization's fundraising activities.

Computer Technology
Computer Applications
(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 7.0

The student will develop database skills to organize and maintain information.

Learning Expectations

The student will:

- 7.1 Compare and contrast the uses of spreadsheet and database software.
- 7.2 Differentiate between the functions and terminology of spreadsheet software.
- 7.3 Design and create a database. (*CLE 3103.5.2*)
- 7.4 Formulate simple queries. (*CLE 3102.1.2, CLE 3101.1.2, CLE 3108.1.2*)
- 7.5 Create a database report.

Student Performance Indicators: Evidence Standard Is Met

The student:

- Constructs databases using appropriate inputting, formatting, and editing skills.
- Searches and sorts a database for specific information.
- Creates and formats database reports.
- Inputs, sorts, searches, edits, and updates data.

Sample Performance Task

The student will design a database given specific contact demographic data for a fundraising activity.

Computer Technology
Computer Applications
(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 8.0

The student will design a multimedia presentation.

Learning Expectations

The student will:

- 8.1 Differentiate between the functions and terminology of presentation software.**
- 8.2 Analyze the basic concepts of multimedia presentation design.**
- 8.3 Design, create, and present a multimedia presentation to a specific audience. (CLE 3103.5.2)**

Student Performance Indicators: Evidence Standard Is Met

The student:

- Creates a ten-slide multimedia presentation applying inputting, formatting, and editing skills.
- Inserts and/or scans necessary graphics, digital clips, and/or video and audio clips within the framework of copyright laws.
- Prints an outline and a copy of the audience handout with given number of frames to a page.
- Delivers the presentation to a specific audience.

Sample Performance Task

The student will design an interactive multimedia presentation for the recruitment of a co-curriculum student organization such as a computer science chapter or Future Business Leaders of America. The presentation is designed for and presented to the 7th and 8th grade assembly.

Computer Technology
Computer Applications
(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 9.0

The student will examine network, hardware, software, and applications.

Learning Expectations

The student will:

- 9.1 Differentiate between the functions and terminology of networks, hardware, and software.
- 9.2 Distinguish between the Internet, intranet, and the World Wide Web.

Student Performance Indicators: Evidence Standard is Met

The student:

- Appraises the basic components of communications systems.
- Diagrams a communications system incorporating various hardware devices.
- Practices proper Internet etiquette, security, privacy, and copyright laws.
- Utilizes the Internet/intranet for electronic communication and research.
- Evaluates the validity of information received through the Internet.
- Complies with all security, privacy, and copyright laws and regulations.

Sample Performance Task

Using the drawing feature of software, students will create a diagram representing a communication system, WAN or LAN network.

Computer Technology
Interactive Multimedia

(Joint Course with Business Technology Approved 10/29/10 for that area)

The student will apply keying, typography, layout, and design skills in this course. The student will be proficient in using interactive multimedia tools to develop electronic presentations. Creative design, persuasive communications, and language arts skills are applied through research, evaluation, validation, written, and oral communication. Typography, layout, and design guidelines are applied. Copyright laws and ethical practices are reinforced in creating and formatting various presentations that require imported data/graphics, digital, audio, and video clips. Team development will also be stressed as students work on multimedia project(s). Laboratory facilities and experiences simulate those found in business and industry.

Recommended Prerequisites: Keyboarding, Computer Applications I

Grades: 11, 12

Recommended Credit: 1 Credit

Computer Technology
Interactive Multimedia

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 1.0

The student will develop and apply concepts related to human relations, safety, career development, communications, and leadership skills for a global workplace.

Standard 2.0

The student will demonstrate a comprehension of the terminology, materials, technologies, media, components and their working relationship utilized within the industry.

Standard 3.0

The student will research and apply knowledge of copyright within the industry.

Standard 4.0

The student will research and apply typography, layout, design, and composition concepts and guidelines for preparation of a multimedia project.

Standard 5.0

The student will organize information and communicate ideas by visualizing space configurations and movements.

Standard 6.0

The student will relate and apply artistic knowledge, skills, and techniques to the production of various projects.

Standard 7.0

The student will communicate ideas and information to a variety of audiences for a variety of purposes.

Standard: 8.0

The student will evaluate the purposes, functions, and features used in preparing digital communication.

Standard 9.0

Computer Technology
Interactive Multimedia

(Joint Course with Business Technology Approved 10/29/10 for that area)

The student will collaborate with peers, experts, and others to develop a finished interactive multimedia project.

Computer Technology Interactive Multimedia

(Joint Course with Business Technology Approved 10/29/10 for that area)

Course Description

The student will be proficient in using interactive multimedia tools to develop digital communication presentations. Creative design, persuasive communications, and language arts skills are applied through research, evaluation, validation, written, and oral communication. Typography, layout and design guidelines are applied. Copyright laws and ethical practices are reinforced in creating and formatting various presentations that require imported data/graphics, digital, audio, and video clips. Team development will also be stressed as students work on multimedia project(s). Laboratory facilities and experiences simulate those found in business and industry.

(This course requires a computerized workstation for each student with presentation management software and tools provided.)

Standard 1:0

The student will develop and apply concepts related to human relations, safety, career development, communications, and leadership skills for a global workplace.

Learning Expectations

The student will:

- 1.1 Demonstrate sensitivity to personal, societal, corporate, and governmental responsibility to community and global issues.**
- 1.2 Demonstrate the interpersonal, teamwork, and leadership skills needed to function in diverse business settings, including the global marketplace.**
- 1.3 Communicate effectively as writers, listeners, and speakers in diverse social and business settings.**
- 1.4 Apply the critical-thinking and soft skills needed to function in students' multiple roles as citizens, consumers, workers, managers, business owners, and directors of their own futures.**
- 1.5 Analyze and follow policies for managing legal and ethical issues in organizations and in a technology-based society.**
- 1.6 Investigate the life-long learning skills that foster flexible career paths and confidence in adapting to a workplace that demands constant retooling.**

Computer Technology
Interactive Multimedia

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1.7 Assess personal skills, abilities, aptitudes, and personal strengths and weaknesses as they relate to career exploration and apply knowledge gained from individual assessment to research and develop an individual career plan.

1.8 Examine the goals and principles of a professional organization. (Ex. Computer Science Club, BETA Club, FBLA)

1.9 Investigates online and office safety procedures and passes a written safety examination with 100% accuracy.

1.10 Demonstrates parliamentary procedure through office staff/chapter organizational meetings.

1.11 Apply appropriate typography concepts to industry documents.

Student Performance Indicator: Evidence Standard Is Met

The student:

- Develops a presentation, applying typography guidelines, that illustrates ethical and legal behavior in written and spoken portions of the presentation, and recognizes the implications of violating federal and state laws related to the use of technology and copyrighted materials.
- Models and role-plays examples of behavioral expectations in the workplace, including soft skills and team building.
- **Demonstrates skills necessary for safety and environmental protection in the workplace and passes a written safety exam with 100% accuracy.**
- **Develops a presentation, applying typography guidelines illustrating ethical behavior in what are written, spoken or presented and legal issues recognizing the implications of violating federal and state laws including the use of technology and copyrighted materials.**
- **Illustrates modeling and role playing of examples of behavioral expectations in the workplace including soft skills and team building.**
- **Demonstrates parliamentary procedure through office staff/chapter organizational meetings.**
- **Participates in professional development leadership activities.**
 - **Creates a design and lays out a membership brochure to promote membership.**
 - **Creates a design and lays out a flyer to promote the local**

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activities of the charitable organization such as the Red Cross.

- **Demonstrates progress toward developing skills and behaviors through portfolios and reflection.**

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Interactive Multimedia

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Sample Performance Task

- Design and produce a team project on legal and ethical issues that includes issues and penalties for plagiarism, copied text that does not require permission, and copied data that requires permission and the process used in obtaining permission. Obtain formal permission for use of quotations, art form, design, music, and photographs. Develop and present a total team project utilizing various technology components and appropriate typography concepts.
- Use the Internet to research health and safety issues in a computer work environment.
- Compose and assemble a safety manual using appropriate typography concepts.
- Develop a presentation on right-to-know laws and any other laws required for safety.

Computer Technology
Interactive Multimedia

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Standard 2.0

The student will demonstrate a comprehension of the terminology materials, technologies, media, components and their working relationship utilized within the industry.

Learning Expectations

The student will

- 2.1 Define and use interactive multimedia presentation terminology.**
- 2.2 Examine components, use, and evaluation of a portfolio.
- 2.3 Describe the basic components of an interactive multimedia presentation and their working relationships.
- 2.4 Analyze audio and video media.
- 2.5 Describe examples of digital media such as:
 - a. graphics
 - b. digital photography
 - c. video
 - d. sound
 - e. music
 - f. animation
 - g. motion
- 2.6 Recognize the various types of formats that can be found in a project.

Student Performance Indicators: Evidence Standard Is Met

The student:

- Starts a portfolio that includes examples of each of the components and resources used in developing an interactive multimedia presentation.

Sample Performance Task

The student will collect and identify the various types of digital media. Each example should provide the file size, file type and source of the media. Assessment will be done through the portfolio.

Computer Technology
Interactive Multimedia

(Joint Course with Business Technology Approved 10/29/10 for that area)
Standard 3.0

The student will research and apply knowledge of copyright within the industry.

Learning Expectations

The student will:

- 3.1 Apply copyright laws and their applications to text, visual art, design, music, and photography.
- 3.2 Prepares copyrighted text in a document that may be permissibly reproduced with attribution

Student Performance Indicators: Evidence Standard is Met

The student:

- Applies ethical conduct providing the proper credit to those whose ideas and content have been used in creating interactive multimedia projects.
- Applies knowledge of copyrights in seeking formal permission from copyright sources before using materials.

Sample Performance Task

- **Design and produce an interactive multimedia project on legal and copyright issues that includes issues and penalties for plagiarism, copied data with permission and the process used in obtaining permission. Obtain formal permission for use of a quotations, art form, design, music, and photographs. Develop and present a total team interactive multimedia project utilizing various technology components.**

Computer Technology
Interactive Multimedia

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Standard 4.0

The student will research and apply typography, composition, and layout/design concepts and guidelines for preparation of various projects.

Learning Expectations

The student will:

- 4.1 Analyze and synthesize composition processes in the production of various projects.
- 4.2 Analyze and apply principles of typography in the production of various projects**
- 4.3 Illustrate how to apply typographical commands to text.
- 4.4 Evaluate the effectiveness of typography in publications.
- 4.5 Contrast and compare, using the following criteria, the typography from at least two print sources:**
 - a. composition techniques
 - b. different type styles
 - c. different types of justification
- 4.6 Analyze and apply concepts of layout/design principles using various print sources:**
 - a. special affects techniques
 - b. thumbnail sketches
 - c. guides, rulers, scales, menus, pallets
 - d. text alignment, elements positioning, rules of page design for printed text
 - e. margins, gutters, tabs, letter spacing, tracking, leading, and headings
 - f. columnar grid setup
 - g. style formulation
 - h. master page construction
 - i. spot color and process color to text and graphics
 - j. continuity and form in publications
- 4.7 Illustrate gradations in shapes and blend colors.**

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4.8 Illustrate methods of importing and exporting original text and graphics.

4.9 Draw and edit objects through incorporating fills, borders, graphic boxes, illustrations, images, tables, charts (shapes and lines).

4.10 Proofread and edit projects for format, mechanics, and clarity.

Student Performance Indicators: Evidence Standard is Met

The student:

- Prepares a layout using typography specifications.
- Applies layout and design principles using original and/or imported graphics. Applies spot color to graphics and text.
- Applies typographical commands to text.
- Rotates text and graphics.
- Proofs, edits, resizes, crops, and manipulates copy and graphics
- Prints or publishes hard copy that meets publication and design standards.

Sample Performance Task

- **Have students illustrate at least three font styles and appropriate application of each. Using different backgrounds contrast and compare the typography of each.**
- **Design and create various projects, i.e., commercial, ad campaign, public relations announcement, master slide for a legislative presentation.**

Computer Technology
Interactive Multimedia

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 5.0

The student will organize information and communicate ideas by visualizing space.

Learning Expectations:

The student will:

- 5.1 Demonstrate design and layouts using storyboard techniques.
- 5.2 Create simple illustrations.
- 5.3 Demonstrate development of layouts applying elements of line, shape, texture, and value to create form and space.
- 5.4 Demonstrate the ability to use computer software to identify, create, and manipulate surfaces, scale, rotation, zoom, shading, and layout.
- 5.5 Identify elements styles of animation, art, sketching, and drawing to enhance and express information and communicate ideas.
- 5.6 Demonstrate the ability to operate camera, import digital media, and manipulate the media.

Student Performance Indicators: Evidence Standard is Met

The student:

- Applies basic design techniques to illustrate print and digital applications for layout and scale.
- Applies elements of animation, art, sketching, and drawing in an interactive multimedia presentation.
- Creates, edits, copies, and manipulates dimensional layout/spreads, geometric entities, and drawings using drawing tools to comply with industry standards.
- Demonstrates how to use imaging technology to create a unique product.
- Applies proper photographic skills.

Sample Performance Tasks

- Assign teams to apply concepts of digital imaging to create a multimedia product.

Computer Technology
Interactive Multimedia

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 6.0

The student will relate and apply artistic knowledge, skills, and techniques to the production of various projects.

Learning Expectations

The student will:

- 6.1 Analyze a variety of different media resources.**
- 6.2 Develop continuity and form in multimedia.**
- 6.3 Connect the various techniques utilized in software applications, such as photo editing, music sampling, graphic animation, etc.**

Student Performance Indicators: Evidence Standard is Met

The student:

- Differentiates and analyze styles, color, graphics, and formatting used in various newsprint media.
- Apply concepts which emphasize continuity and form in multimedia.
- Apply concepts of image manipulation using digital tools.
- Digitally manipulates, enhances, and produces photographs or other art elements utilizing photo editing software.

Sample Performance Task

- **Create a multimedia product which complies with industry standards**

Computer Technology
Interactive Multimedia

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 7.0

The student will communicate ideas and information using a multimedia presentation to target audiences for a variety of purposes.

The student will:

- 7.1 Demonstrate the ability to communicate information to a target audience for a specific purpose in print, art, and/or speech.
- 7.2 Apply concepts of persuasive communication skills to target audiences using various media.
- 7.3 Compare and contrast the power of digital communication with a traditional communication presentation.

Student Performance Indicators: Evidence standard is met

The student:

- Constructs a storyboard incorporating script, visuals, format, and sequence for presentation.
- Creates targeted (audience ancillaries to accompany presentation (handouts, outlines, etc).
- Designs, prepares, and delivers a persuasive interactive multimedia oral presentation for a target audience.

Sample Performance Task

- Students select a target audience and a topic that relates that audience. They will research information and present a multimedia presentation with accompanying oral commentary to fit the target audience. Presentation ancillaries to the commentary will be given to the audience.
- Students will create a storyboard, design a layout, develop the presentation, and practice and edit the presentation before making the final delivery of the presentation.
- Students will evaluate presentations using a rubric to evaluate planning, revisions, and presentations skills.

Computer Technology
Interactive Multimedia

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard: 8.0

The student will evaluate the purposes, functions, and features used in preparing digital communication.

Learning Expectations

The student will:

8.1 Compose, organize, and edit a presentation incorporating text, imaging, audio, video, and graphic software.

8.2 Investigate various products that can be designed and published using multimedia software.

8.3 Compose, organize, and edit information using keyboard, scanner, Internet, audio input device, and a digital camera.

Student Performance Indicators: Evidence Standard is Met

The student:

- Modifies a pre-designed presentation to demonstrate creativity.
- Extracts and places text, graphics, audio and/or video clips in a presentation project.

Sample Performance Task

- Utilize keyboard, scanner, Internet, audio input device and digital camera to incorporate text, imaging, audio, video, and graphics into a 30-second public service announcement.

Computer Technology
Interactive Multimedia

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 9.0

The student will collaborate with peers, experts, and others to develop a finished interactive project.

Learning Expectations

The student will:

- 9.1 Define team roles.
- 9.2 Define team norms.
- 9.3 Identify the components of an interactive multimedia project.
- 9.4 Select a project topic
- 9.5 Design a map or storyboard for the topic/project.
- 9.6 Create or acquire the necessary graphics, digital photography or video.
- 9.7 Develop or acquire sound and/or music.
- 9.8 Create an animation.
- 9.9 Locate or create content.
- 9.10 Develop a project
- 9.11 Present the finished product to an audience.
- 9.12 Assess the finished product and evaluate team process.
- 9.13 Incorporate the use of copyright laws, including use of attribution.

Student Performance Indicators: Evidence Standard Is Met

The student:

- Collaborates with others to produce a finished multimedia project.
- Packages the final project for dissemination

Sample Performance Task

- Create a presentation for a school. The finished product should include all aspects of the school environment (teachers, students, classes, sports, extra-curricular, etc.). Team building should include the creation of areas of specialty (graphics, sound, content, etc.) and a management structure. Specific timelines should be created, posted, and monitored.

Computer Technology
Interactive Multimedia

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- Create a product that will introduce the planets in our solar system to a sixth grade audience. The finished product should include a review and test module and the necessary art for marketing the product. Evaluation will be determined by the successful presentation and utilization of the product.
- Design an electronic interactive portfolio that showcases examples of both creative work (music, art, etc.) as well as examples of work created in other areas of study (English essays, social studies research, etc.).

Computer Technology
Computer Programming I

(Joint Course with Business Technology Approved 10/29/10 for that area)

This course is designed to develop object-oriented programming language skills using high level languages such as *Java*, *C++*, and *BASIC*. The student will utilize the commands, statements, and procedures of this language to write, run, debug, and edit computer programs.

Recommended Prerequisites: Keyboarding, Computer Applications

Suggested Prerequisites: Algebra I

Grades: 10, 11, 12

Recommended Credit: 1 Credit

Computer Technology

Computer Programming I

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 1.0

The student will develop and apply concepts related to human relations, safety, career development, and leadership skills for a global workplace and society.

Standard 2.0

The student will demonstrate proficiency in the background knowledge of computers and programming.

Standard 3.0

The students will use Program Development Tools as they relate to the programming development cycle.

Standard 4.0

The student will write and document an executable program in high level languages such as *Java*, *C++*, and *BASIC* using best coding practices

Standard 5.0

The student will work as a team member to develop integrated application using high level languages such as *Java*, *C++*, and *BASIC*.

Computer Technology Computer Programming I

(Joint Course with Business Technology Approved 10/29/10 for that area)

Course Description:

This course is designed to develop object-oriented programming language skills using high level languages such as *Java*, *C++*, *BASIC*. The student will utilize the commands, statements, and procedures of this language to develop computer programs. This first-level course leads to game programming. ***(This course requires a computerized workstation for each student with appropriate program development tools and compiler software.)***

Standard 1:0

The student will develop and apply concepts related to human relations, safety, career development, communications, and leadership skills for a global workplace.

Learning Expectations

The student will:

- 1.1 Demonstrate sensitivity to personal, societal, corporate, and governmental responsibility to community and global issues.
- 1.2 Demonstrate the interpersonal, teamwork, and leadership skills needed to function in diverse business settings, including the global marketplace.
- 1.3 Communicate effectively as writers, listeners, and speakers in diverse social and business settings.
- 1.4 Apply the critical-thinking and soft skills needed to function in students' multiple roles as citizens, consumers, workers, managers, business owners, and directors of their own futures.
- 1.5 Analyze and follow policies for managing legal and ethical issues in organizations and in a technology-based society.
- 1.6 Investigate the life-long learning skills that foster flexible career paths and confidence in adapting to a workplace that demands constant retooling.
- 1.7 Assess personal skills, abilities, aptitudes, and personal strengths and weaknesses as they relate to career exploration and apply knowledge gained from individual assessment to research and develop an individual career plan.
- 1.8 Examine the goals and principles of a professional organization. (Ex. Computer Science Club, BETA Club, FBLA)**

Computer Technology Computer Programming I

(Joint Course with Business Technology Approved 10/29/10 for that area)

- 1.9 Investigates online and office safety procedures and passes a written safety examination with 100% accuracy.
- 1.10 Demonstrates parliamentary procedure through office staff/chapter organizational meetings.
- 1.11 Apply appropriate typography concepts to industry documents.

Student Performance Indicator: Evidence Standard Is Met

The student:

- Develops a presentation, applying typography guidelines, that illustrates ethical and legal behavior in written and spoken portions of the presentation and recognizes the implications of violating federal and state laws related to the use of technology and copyrighted materials.
- Models and role-plays examples of behavioral expectations in the workplace, including soft skills and team building.
- Demonstrates skills necessary for safety and environmental protection in the workplace and passes a written safety exam with 100% accuracy.
- Develops a presentation, applying typography guidelines illustrating ethical behavior in what are written, spoken, or presented and legal issues recognizing the implications of violating federal and state laws including the use of technology and copyrighted materials. Illustrates modeling and role playing of examples of behavioral expectations in the workplace including soft skills and team building.
- Demonstrates parliamentary procedure through office staff/chapter organizational meetings.
- **Participates in professional development leadership activities.**
 - **Creates a design and lays out a membership brochure to promote membership.**
 - **Creates a design and lays out a flyer to promote the local activities of the charitable organization such as the Red Cross.**
- **Demonstrates progress toward developing skills and behaviors through portfolios and reflection.**

Computer Technology

Computer Programming I

(Joint Course with Business Technology Approved 10/29/10 for that area)

Sample Performance Task

- Design and produce a team project on legal and ethical issues that includes issues and penalties for plagiarism, copied text that does not require permission, and copied data that requires permission and the process used in obtaining permission. Obtain formal permission for use of quotations, art form, design, music, and photographs. Develop and present a total team project utilizing various technology components and appropriate typography concepts.
- Use the Internet to research health and safety issues in a computer work environment. Compose and assemble a safety manual using appropriate typography concepts. Develop a presentation on right-to-know laws and any other laws required for safety.

Computer Technology

Computer Programming I

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 2.0

The student will demonstrate proficiency in the background knowledge of computers and programming.

Learning Expectations

The student will:

- 2.1 Discuss the history of computers and programming languages.
- 2.2 Discuss the components of the computer.
- 2.3 Summarize the distinguishable characteristics of the **high level languages** such as **Java**, **C++**, and **BASIC**.
- 2.4 Critique the role of computer programming in society.

Student Performance Indicator: Evidence Standard Is Met

The student:

- Summarizes the history of computers and programming languages.
- Explains the purposes of high level languages such as **Java**, **C++**, and **BASIC**. Examines the role of computer programming in society.

Sample Performance Task

- The student will develop a timeline for the history of computers and programming languages. Proficiency would be evaluated by the given dates and the content area covered on the timeline.

Computer Technology

Computer Programming I

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 3.0

The students will use Program Development Tools as they relate to the programming development cycle. (CLE 3102.1.7, CLE 3102.2.1, CLE 3102.3.6, CLE 3102.3.1, CLE 3102.3.5, CLE 3102.3.6, CLE 3102.3.9, CLE 3103.1.7, CLE 3103.2.3, CLE 3108.1.7)

Learning Expectations:

The student will

- 3.1 Develop a detailed logic plan using a flowchart.
- 3.2 Demonstrate the use of Pseudocode.

Student Performance Indicator: Evidence Standard Is Met

The student:

- Diagrams a sequence of steps using program development tools.

Sample Performance Task

- The student will produce a detailed logic plan using the programming development tools.

Computer Technology

Computer Programming I

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 4.0

The student will write and document an executable program in high level languages such as *Java*, *C++*, and *BASIC* using best coding practices

Learning Expectations

The student will:

- 4.1 Identify names for variables and their data types.
- 4.2 Recognize and apply the symbols for mathematical operations.
- 4.3 Demonstrate the various methods of obtaining input/output and formatting output.
- 4.4 Analyze the task and implement a detailed logic plan.
- 4.5 Demonstrate the use of control statements.
- 4.6 Identify, illustrate, and perform operations using arrays.
- 4.7 Construct and analyze functions.
- 4.8 Read and/or write data files for input/output purposes.
- 4.9 Debug the program and verify the output of the program.
- 4.10 Show proper documentation, formatting, and commenting of source code.

Student Performance Indicator: Evidence Standard Is Met

The student:

- Given a task, develop a detailed logic plan that uses appropriate input/output methods, variables, symbols, and appropriate uses.
- Writes high level languages such as ***Java***, ***C++***, and ***BASIC*** executable programs using control statements, arrays, and functions.
- Writes input/output data files.
- Troubleshoots high level languages such as ***Java***, ***C++***, and ***BASIC*** programs.

Sample Performance Task

- Each student will write a program that converts data from one unit of measurement to another unit of measurement. Evaluation will be the successful operation of the program.

Computer Technology

Computer Programming I

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 5.0

The student will work as a team member to develop integrated application using high level languages such as *Java, C++, and BASIC.*

Learning Expectations

The student team will:

- 5.1 Define the roles of each team members.
- 5.2 Solve a complex task using high level languages such as ***Java, C++, and BASIC.***
- 5.3 Compare and contrast the advantages of working as a group.

Student Performance Indicator: Evidence Standard Is Met

The student:

- Works as a member of team to solve a complex task using high level languages such as ***Java, C++, and BASIC*** and presents the solution of the task.

Sample Performance Task

- Each team will write a program to solve a complex task using high level languages such as ***Java, C++, and BASIC.*** The problem to be solved by each team will be determined by the team members. Evaluation will be the successful operation of the program.

Computer Technology
Computer Programming II

(Joint Course with Business Technology Approved 10/29/10 for that area)

This course is designed to enhance skills developed in Computer Programming I in object-oriented programming language skills using high level languages such as *Java*, *C++*, and *BASIC*. The student will utilize the commands, statements, and procedures of this language to write, run, debug, and edit computer programs. This second-level course leads to Game Programming.

Recommended Prerequisites: Computer Programming I

Suggested Prerequisites:

Grades: 11, 12

Recommended Credit: 1 Credit

Computer Technology
Computer Programming II

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 1.0

The student will develop and apply concepts related to human relations, safety, career development, communications, and leadership skills for a global workplace.

Standard 2.0

The student will demonstrate proficiency in the background knowledge of computers and programming.

Standard 3.0

The students will use Program Development Tools as they relate to the programming development cycle.

Standard 4.0

The student will write and document an executable program with high level languages such as *Java*, *C++*, and *BASIC* using best coding practices.

Standard 5.0

The student will work as a team member to develop integrated application using high level languages such as *Java*, *C++*, and *BASIC*.

Computer Technology Computer Programming II

(Joint Course with Business Technology Approved 10/29/10 for that area)

Course Description:

This course is designed to enhance skills developed in Computer Programming I in object-oriented programming language skills using high level languages such as *Java*, *C++*, and *BASIC*. The student will utilize the commands, statements, and procedures of this language to write, run, debug, and edit computer programs. This second-level course leads to Game Programming. ***(This course requires a computerized workstation for each student with appropriate program development tools and compiler software.)***

Standard 1:0

The student will develop and apply concepts related to human relations, safety, career development, communications, and leadership skills for a global workplace.

Learning Expectations

The student will:

- 1.1 Demonstrate sensitivity to personal, societal, corporate, and governmental responsibility to community and global issues.
- 1.2 Demonstrate the interpersonal, teamwork, and leadership skills needed to function in diverse business settings, including the global marketplace.
- 1.3 Communicate effectively as writers, listeners, and speakers in diverse social and business settings.
- 1.4 Apply the critical-thinking and soft skills needed to function in students' multiple roles as citizens, consumers, workers, managers, business owners, and directors of their own futures.
- 1.5 Analyze and follow policies for managing legal and ethical issues in organizations and in a technology-based society.
- 1.6 Investigate the life-long learning skills that foster flexible career paths and confidence in adapting to a workplace that demands constant retooling.
- 1.7 Assess personal skills, abilities, aptitudes, and personal strengths and weaknesses as they relate to career exploration and apply knowledge gained from individual assessment to research and develop an individual career plan.
- 1.8 Examine the goals and principles of a professional organization. (Ex. Computer Science Club, BETA Club, FBLA)

Computer Technology Computer Programming II

(Joint Course with Business Technology Approved 10/29/10 for that area)

- 1.9 Investigates online and office safety procedures and passes a written safety examination with 100% accuracy.
- 1.10 Demonstrates parliamentary procedure through office staff/chapter organizational meetings.
- 1.11 Apply appropriate typography concepts to industry documents.

Student Performance Indicator: Evidence Standard Is Met

The student:

- Develops a presentation, applying typography guidelines, that illustrates ethical and legal behavior in written and spoken portions of the presentation and recognizes the implications of violating federal and state laws related to the use of technology and copyrighted materials.
- Models and role plays examples of behavioral expectations in the workplace, including soft skills and team building.
- Demonstrates skills necessary for safety and environmental protection in the workplace and passes a written safety exam with 100% accuracy.
- Develops a presentation, applying typography guidelines illustrating ethical behavior in what are written, spoken, or presented and legal issues recognizing the implications of violating federal and state laws including the use of technology and copyrighted materials.
- Illustrates modeling and role playing of examples of behavioral expectations in the workplace including soft skills and team building.
- Demonstrates parliamentary procedure through office staff/chapter organizational meetings.
- **Participates in professional development leadership activities.**
 - **Creates a design and lays out a membership brochure to promote membership.**
 - **Creates a design and lays out a flyer to promote the local activities of the charitable organization such as the Red Cross.**

Computer Technology
Computer Programming II

(Joint Course with Business Technology Approved 10/29/10 for that area)

Sample Performance Task

- Design and produce a team project on legal and ethical issues that includes issues and penalties for plagiarism, copied text that does not require permission, and copied data that requires permission and the process used in obtaining permission. Obtain formal permission for use of quotations, art form, design, music, and photographs. Develop and present a total team project utilizing various technology components and appropriate typography concepts.
- Use the Internet to research health and safety issues in a computer work environment. Compose and assemble a safety manual using appropriate typography concepts. Develop a presentation on right-to-know laws and any other laws required for safety.

Computer Technology

Computer Programming II

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 2.0

The student will demonstrate proficiency in the background knowledge of computers and programming.

Learning Expectations

The student will:

- 2.1 Discuss the history of computers and programming languages.
- 2.2 Discuss the components of the computer.
- 2.3 Summarize the distinguishable characteristics of the high level *Programming* languages such as **Java**, **C++**, and **BASIC**.
- 2.4 Critique the role of computer programming in society.

Student Performance Indicator: Evidence Standard Is Met

The student:

- Summarizes the history of computers and programming languages.
- Explains the purposes of the high level languages such as **Java**, **C++**, and **BASIC**.
- Examines the role of computer programming in society.

Sample Performance Task

- The student will develop a timeline for the history of computers and programming languages. Proficiency would be evaluated by the given dates and the content area covered on the timeline.

Computer Technology Computer Programming II

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 3.0

The students will use Program Development Tools as they relate to the programming development cycle. (CLE 3102.1.7, CLE 3102.2.1, CLE 3102.3.6, CLE 3102.3.1, CLE 3102.3.5, CLE 3102.3.6, CLE 3102.3.9, CLE 3103.1.7, CLE 3103.2.3, CLE 3108.1.7,)

Learning Expectations:

The student will

- 3.1 Develop a detailed logic plan using a flowchart.
- 3.2 Demonstrate the use of Pseudocode.
- 3.3 Apply the concepts and principles of object-oriented programming.

Student Performance Indicator: Evidence Standard Is Met

The student:

- Diagrams a sequence of steps using program development tools.
- Designs a series of classes to describe diverse systems.

Sample Performance Task

The student will produce a detailed logic plan using the programming development tools.

Computer Technology

Computer Programming II

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 4.0

The student will write and document an executable program with high level languages such as *Java*, *C++*, and *BASIC* using best coding practices.

Learning Expectations

The student will:

- 4.1 Identify names for variables and their data types.
- 4.2 Recognize and apply the symbols for mathematical operations.
- 4.3 Demonstrate the various methods of obtaining input/output and formatting output.
- 4.4 Analyze the task and implement a detailed logic plan.
- 4.5 Demonstrate the use of control statements.
- 4.6 Identify, illustrate, and perform operations using arrays.
- 4.7 Identify and apply virtual functions and polymorphism.
- 4.8 Read and/or write data files for input/output purposes.
- 4.9 Debug the program and verify the output of the program.
- 4.10 Show proper documentation, formatting, and commenting of source code.
- 4.11 Design a program that makes extensive use of event driven, exception handling.
- 4.12 Create a program from an object-oriented design specification.

Student Performance Indicator: Evidence Standard Is Met

The student:

- Given a task, develop a detailed logic plan that uses appropriate input/output methods, variables, symbols, and appropriate uses.
- Writes an executable program using control statements, arrays, and functions from an object-oriented design specification
- Writes input/output data files.
- Troubleshoots high level languages such as ***Java*, *C++*, and *BASIC***.
- Creates a program that handles exceptions.

Sample Performance Task

- Each student will write a program that converts data from one unit of measurement to another unit of measurement. Evaluation will be the successful operation of the program.

Computer Technology Computer Programming II

(Joint Course with Business Technology Approved 10/29/10 for that area)

Standard 5.0

The student will work as a team member to develop integrated application using high level languages such as *Java, C++, and BASIC.*

Learning Expectations

The students will:

- 5.1 Define the role of each team members.
- 5.2 Solve a complex task using high level languages such as ***Java, C++, and BASIC.***
- 5.3 Compare and contrast the advantages of working as a group.

Student Performance Indicator: Evidence Standard Is Met

The student:

- Works as a member of team to solve a complex task using high level languages such as ***Java, C++, and BASIC*** and presents the solution of the task.

Sample Performance Task

- Each team will write a program to solve a complex task using high level languages such as ***Java, C++, and BASIC.*** The problem to be solved by each team will be determined by the team members. Evaluation will be the successful operation of the program.