

## **Business and Computer Science**

**PROGRAM CONCENTRATION:** Middle School Business and Computer Science

**COURSE TITLE:** Middle School Business and Computer Science, Grade 7

### **COURSE DESCRIPTION:**

Using project based instruction; students are introduced to the principles of business in the 21<sup>st</sup> century while refreshing their keyboarding skills. This course should also help students to use computers effectively in their lives, thus providing a connection of computer science and business careers.

In this course, middle school students build a knowledge base of computer applications, information systems, internet safety, 21<sup>st</sup> century skills, and business and computer science careers of the 21<sup>st</sup> century.

Exposure to networking and programming will also be important threads in this course.

Competencies for the co-curricular student organization Future Business Leaders of America (FBLA) are integral components of the performance standards. FBLA activities should be incorporated throughout instructional strategies developed for the course.

### **KEYBOARDING AND ERGONOMICS:**

Students will develop and apply keyboarding skills utilizing current technology.

#### **MSBCS-BCSII-1: Students will reinforce keyboarding techniques.**

- a) Identify and demonstrate appropriate techniques.
- b) Identify ergonomic issues.
- c) Refine touch method keyboarding speed and accuracy skills using the Alphanumeric and Numeric keypad.

### **ACADEMIC STANDARDS:**

*ELA7R2 – The student understands and acquires new vocabulary and uses it correctly in reading and writing.*

*S7CS2 – Students will use standard safety practices for all classroom laboratory and field investigations.*

**CTAE NATIONAL STANDARDS:**

*Standard 1 – Use input technologies appropriately to enter and manipulate text and data.*

*Standard 2 – Utilize information and technology tools to conduct business effectively and efficiently.*

**SAMPLE TASKS:**

- Keyboarding Unit: ***“Staying in Touch with your Keyboard”***
  - Three (3) Minute timed writing each day as a bell ringer
  - Record GWAM and errors on a spreadsheet
  - End of course graph the data

**21ST CENTURY SKILLS:**

Students will demonstrate employability skills such as working on a team, problem-solving and organizational skills.

**MSBCS-BCSII-2: The student participates in a variety of activities that demonstrate 21st Century employability skills.**

- a) Show the importance of a positive attitude in obtaining and maintaining a job.
- b) Explain the importance of proper etiquette for greeting and meeting people, dress code, attendance, and other workplace expectations.
- c) Utilize brainstorming techniques to solve a problem.
- d) Identify the benefits of teamwork.
- e) Demonstrates an understanding of the nature of employer-employee relationships.
- f) Discuss child labor laws.

**ACADEMIC STANDARDS:**

*ELA7R2 – The student understands and acquires new vocabulary and uses it correctly in reading and writing.*

*ELA7W3 – The student uses research and technology to support writing.*

*ELA7LSV1 – The student participates in student-to-teacher, student-to-student, and group verbal interactions.*

*M7P1 – Students will solve problems (using appropriate technology).*

*S7CS2 – Students will use standard safety practices for all classroom laboratory and field investigations.*

**CTAE NATIONAL STANDARDS:**

*Standard 1 – Relate the importance of workplace expectations to career development.*

*Standard 2 – Relate the importance of lifelong learning to career success.*

*Standard 3 – Communicate in a clear, courteous, concise, and correct manner on personal and professional levels.*

*Standard 4 – Apply basic social communication skills in personal and professional situations.*

*Standard 5 – Integrate all forms of communication in the successful pursuit of employment.*

*Standard 6 – Incorporate appropriate leadership and supervision techniques, customer service strategies, and personal ethics standards to communicate effectively with various business constituencies.*

*Standard 7 – Develop personal management skills to function effectively and efficiently in a business environment.*

*Standard 8 – Examine the role of ethics and social responsibility in decision making.*

**SAMPLE TASKS:**

- 21<sup>st</sup> Century Skills Unit: **“Wanted: 21<sup>st</sup> Century Employee”**
  - Divide students into teams of 3 (½ of the teams will display positive work attitudes and ½ will display negative work attitudes). Students will present 1-2 minute skits to class.
  - Video-tape appropriate and inappropriate dress/habits for the workplace. (Business and business casual); have groups critique using a Venn diagram.
  - Create a PowerPoint Presentation on Georgia FBLA Dress Code
  - Using Word or Publisher have students create a flyer on illegal job related tasks for minors.
- <http://www.dol.state.ga.us/js/replace>
- [www.expertvillage.com](http://www.expertvillage.com)
- <http://www.dol.gov/dolfaq/dolfaqbytopic.asp?topicID=14> (Child Labor Laws FAQ's)
- [www.georgia.fbla.org/documents/GABLA\\_dresscode.pdf](http://www.georgia.fbla.org/documents/GABLA_dresscode.pdf)

### **CAREERS—PATHWAYS:**

Students will explore multiple career paths and their interrelatedness. They will become acquainted with the array of careers available in the Business and Computer Science pathways. This awareness is important because frequent career changes are common in the 21<sup>st</sup> Century.

**MSBCS-BCSII-3: The student will examine educational requirements, job responsibilities, employment trends, and opportunities in the different career pathways in Business and Computer Science.**

- a) Investigate the 21st Century career opportunities.
- b) Evaluate several occupational interests, based on various criteria (educational requirements, starting salaries, trends, opportunities, and career ladders).
- c) Describe and demonstrate effective communication skills (reading, writing, speaking, and listening) in a business environment.
- d) Explain why people need to work (e.g., social contacts, make purchases for necessities) expand knowledge, develop skills to meet basic needs and for personal satisfaction and enjoyment.
- e) Construct and/or update a Career Plan as a tool to explore self-knowledge and academic aptitude and understand that career paths should relate to your individual traits.

### **ACADEMIC STANDARDS:**

*ELA7LSV2 – The student listens to and views various forms of text and media in order to gather and share information, persuade others, and express and understand ideas.*

*M7D1 – Students will pose questions, collect data, represent and analyze the data, and interpret results.*

*S7CS2 – Students will use standard safety practices for all classroom laboratory and field investigations.*

### **CTAE NATIONAL STANDARDS:**

*Standard 1 – Assess personal skills, abilities, and aptitudes and personal strengths and weaknesses as they relate to career exploration and development.*

*Standard 2 – Utilize career resources to develop a career information database that includes international career opportunities.*

*Standard 3 – Relate the importance of workplace expectations to career development.*

*Standard 4 – Apply knowledge gained from individual assessment to a comprehensive set of goals and an individual career plan.*

*Standard 5 – Relate the importance of lifelong learning to career success.*

*Standard 6 – Communicate in a clear, courteous, concise, and correct manner on personal and professional levels.*

*Standard 7 – Apply basic social communication skills in personal and professional situations.*

*Standard 8 – Integrate all forms of communication in the successful pursuit of employment.*

*Standard 9 – Use a rational decision-making process as it applies to the roles of citizens, workers, and consumers.*

*Standard 10 – Describe human resource functions and their importance to an organization’s successful operation.*

### **SAMPLE TASKS:**

- Career—Pathways Unit: **“What’s It All About?”**
  - Research career opportunities in Business and Computer Science
    - Create a career t-shirt and/or PowerPoint (student picture, occupation, education, Georgia salary, skills, tasks, and related occupations.
    - Present to class.
  - Job Shadowing
  - Career Day
  - Guest speakers (Department of Labor, Employment Agencies, Human Resources (but not limited to) from local businesses.
  - Explore business occupations within different career paths.
  - Discuss issues addressed in “Shift Happens” PowerPoint Presentation
  - Web Quest why People Work
  - Update Career Plan
- [www.gacollege411.org](http://www.gacollege411.org)
- [www.gcic.peachnet.edu](http://www.gcic.peachnet.edu)
- [www.thefunworks.org/](http://www.thefunworks.org/)
- <http://www.slideshare.net/jbrenman/shift-happens-33834>
- <http://www.careersonline.com.au/disc/work.sat.html>

## **COMPUTER APPLICATIONS:**

Students will show mastery of computer application software that encompasses word processing, spreadsheet, database, presentation/multimedia, web page, and desktop publishing. Skills will be demonstrated by creating projects.

### **MSBCS-BCSII-4: The student will utilize word processing software.**

- a) Identify uses of word processing software and careers related to word processing.
- b) Identify and explain word processing terminology.
- c) Create basic word processing documents related to business and computer science careers.
- d) Retrieve, edit, manipulate, and print documents.

## **SAMPLE TASKS:**

- Word Processing Software Unit: *“Oh My Word”*
  - Compose a personal business letter to a friend.
    - Create mailing labels
    - Folding and inserting letters into envelopes
  - Students will compose a business letter using Letter Wizard requesting information from the local Chamber of Commerce Businesses (hiring practices, educational requirements, and/or employee benefits).
    - Create a Word Table compare and contrast information received.

### **MSBCS-BCSII-5: The student will utilize spreadsheet software.**

- a) Identify uses of spreadsheet software and careers related to spreadsheet.
- b) Identify and explain spreadsheet terminology.
- c) Create and save basic spreadsheets and apply formulas related to business and computer science careers.
- d) Retrieve, edit, manipulate, and print various spreadsheets.
- e) Create various charts/graphs from spreadsheets.

## **SAMPLE TASKS:**

- Spreadsheet Software Unit—*“Where Did All My Money Go?”*
  - Using career chosen for career unit, create a personal monthly budget using spreadsheet software.
  - Format a payroll spreadsheet.
  - Create a line graph of your three (3) minute timed writings. (bell ringers)
  - Use Mail Merge Wizard to create mailing labels.

- Include picture and/or logo on all labels

**MSBCS-BCSII-6: The student will utilize database software.**

- a) Identify uses of database software and careers related to database.
- b) Identify and explain database terminology.
- c) Create and save basic database related to business and computer science careers.
- d) Retrieve, edit, manipulate, and print various databases

**SAMPLE TASKS:**

- Database Software Unit—*“Organize Your Event”*
  - Create a database of FBLA members to recognize their achievements. (Database should include: Parents’ addresses, Board of Education members, advisory council, and business partners.
    - Create banquet invitations
    - Create banquet budget

**MSBCS-BCSII-7: The student will utilize presentation/multimedia software.**

- a) Identify uses of presentation/multimedia software in today’s workplace.
- b) Identify and explain presentation/multimedia terminology.
- c) Plan and design a multimedia presentation.
- d) Create, save, print, and present a multimedia presentation on a business related career.

**SAMPLE TASKS:**

- Presentation/Multimedia Software Unit—*“Delivering ‘Star-Studded’ Creations”*
  - Create a PowerPoint or Movie Maker of a state assigned by teacher after researching necessary criteria.
  - Create a PowerPoint on a post-secondary institution that offers their career from career pathway unit.

**MSBCS-BCSII-8: The student will utilize web page design software.**

- a) Identify uses of web pages and careers related to web page in today’s workplace.
- b) Identify and explain web page terminology including the elements of a web page.
- c) Plan and design a web page.

**SAMPLE TASKS:**

- Web Page Design Unit—“*Connecting Through Webbing*”
  - Create a Personal Web Page with links to MSBCSII projects.

**MSBCS-BCSII-9: The student will utilize desktop publishing software.**

- a) Identify uses of desktop publishing software and careers related to desktop publishing.
- b) Identify and explain desktop publishing terminology.
- c) Create, edit, save, and print desktop publishing documents.

**ACADEMIC STANDARDS:**

*ELA7R2 – The student understands and acquires new vocabulary and uses it correctly in reading and writing.*

*ELA7W2 – The student demonstrates competency in a variety of genres.*

*ELA7W3 – The student uses research and technology to support writing.*

*ELA7W4 – The student consistently uses the writing process to develop, revise, and evaluate writing.*

*ELA7LSV1 – The student participates in student-to-teacher, student-to-student, and group verbal interactions.*

*ELA7LSV2 – The student listens to and views various forms of text and media in order to gather and share information, persuade others, and express and understand ideas.*

*M7D1 – Students will pose questions, collect data, represent and analyze the data, and interpret results.*

*M7P1 – Students will solve problems (using appropriate technology).*

*M7P4 – Students will make connections among mathematical ideas and to other disciplines.*

*M7P5 – Students will represent mathematics in multiple ways.*

*S7CS2 – Students will use standard safety practices for all classroom laboratory and field investigations.*

*S7CS3 – Students will have the computation and estimation skills necessary for analyzing data and following scientific explanations.*

**SAMPLE TASKS:**

- Desktop Publishing Unit: ***“Your Career Portrait in Print”***
  - Create a Help Wanted Flyer in career from Career Pathway
  - Create a Newspaper Page on Business and Computer Science Careers

**CTAE NATIONAL STANDARDS:**

*Standard 1 – Apply appropriate accounting principles to payroll, income taxation, managerial systems, and various forms of ownership.*

*Standard 2 – Use planning and control principles to evaluate the performance of an organization and apply differential analysis and present-value concepts to make decisions.*

*Standard 3 – Use technology to enhance the effectiveness of communication.*

*Standard 4 – Integrate all forms of communication in the successful pursuit of employment.*

*Standard 5 – Use mathematical procedures to analyze and solve business problems.*

*Standard 6 – Identify various forms of income and analyze factors that affect income as a part of the career decision-making process.*

*Standard 7 – Develop and evaluate a spending/savings plan.*

*Standard 8 – Use input technologies appropriately to enter and manipulate text and data.*

*Standard 9 – Gather, evaluate, use, and cite information from information technology sources.*

*Standard 10 – Use, plan, develop, and maintain database management systems.*

*Standard 11 – Design, develop, test, and implement programs.*

*Standard 12 – Describe positions and career paths in information technology.*

*Standard 13 – Utilize information and technology tools to conduct business effectively and efficiently.*

**INTERNET AND INTERNET SAFETY:**

Students will examine the professional, ethical, and safe issues involved in the use of the Internet.

**MSBCS-BCSII-10: The student will demonstrate an understanding of ethics and potential dangers related to the use of the Internet.**

- a) Investigate strategies for Internet Safety and the importance of not releasing personal information to strangers/Internet friends.
- b) Evaluate websites to determine the accuracy of information and images.

**ACADEMIC STANDARDS:**

*ELA7R2 – The student understands and acquires new vocabulary and uses it correctly in reading and writing.*

*ELA7LSV1 – The student participates in student-to-teacher, student-to-student, and group verbal interactions.*

*ELA7LSV2 – The student listens to and views various forms of text and media in order to gather and share information, persuade others, and express and understand ideas.*

*S7CS2 – Students will use standard safety practices for all classroom laboratory and field investigations.*

**CTAE NATIONAL STANDARDS:**

*Standard 1 – Assess the impact of information technology on society.*

*Standard 2 – Develop the technical and interpersonal skills and knowledge to support the user community.*

*Standard 3 – Examine the role of ethics and social responsibility in decision making.*

**SAMPLE TASKS:**

- Internet Safety Unit: **“My Space Is Not The Only Place”**
- Go on a Scavenger Hunt that uses Internet searching techniques to find the information.
- Create a report on how the Internet got started.
  - Include Internet terminology
- Guest Speaker from GBI Internet Safety Department
- Create a table of pros and cons of the Internet
- [www.isafe.org](http://www.isafe.org)

- [www.internet101.org](http://www.internet101.org)

### **INTRO TO BUSINESS:**

Students will demonstrate an understanding of careers in entrepreneurship, management, marketing, and banking & finance.

**BCS-BCSII-11: The student will examine career requirements, job responsibility, employment trends, and opportunities for careers in business.**

- a) Discuss characteristics and opportunities that lead to the development of a successful career in entrepreneurship management, marketing, and banking and finance.
- b) Create a logo, slogan, letterhead, and business card for an imaginary business.

### **ACADEMIC STANDARDS:**

*ELA7R2 – The student understands and acquires new vocabulary and uses it correctly in reading and writing.*

*ELA7W2 – The student demonstrates competency in a variety of genres.*

*ELA7W3 – The student uses research and technology to support writing.*

*ELA7W4 – The student consistently uses the writing process to develop, revise, and evaluate writing.*

*ELA7LSV1 – The student participates in student-to-teacher, student-to-student, and group verbal interactions.*

*ELA7LSV2 – The student listens to and views various forms of text and media in order to gather and share information, persuade others, and express and understand ideas.*

*S7CS2 – Students will use standard safety practices for all classroom laboratory and field investigations.*

### **CTAE NATIONAL STANDARDS:**

*Standard 1 – Utilize career resources to develop a career information database that includes international career opportunities.*

*Standard 2 – Integrate all forms of communication in the successful pursuit of employment.*

*Standard 3 – Recognize that entrepreneurs possess unique characteristics and evaluate the degree to which one possesses those characteristics.*

*Standard 4 – Use the financial competencies needed by an entrepreneur.*

*Standard 5 – Recognize that entrepreneurs must establish, maintain, and analyze appropriate records to make business decisions.*

### **SAMPLE TASKS:**

- Intro to Business Unit: -- **“Marketing Your Business”**
  - Create a letterhead, business card and logo for an imaginary business.
  - Create a slogan for the business.
  - Create a sign for the business.
  - Use Occupational Outlook Handbook online to list qualifications.
- <http://www.bls.gov>

### **INFORMATION SYSTEMS:**

Students will demonstrate an understanding of careers in networking, programming, and computer science.

**MSBCS-BCSII-12: The student will examine career requirements, job responsibility, employment trends, and opportunities for careers in networking, programming, and computer science.**

- a) Discuss characteristics and opportunities that lead to the development of a successful career in networking, programming, and computer science.
- b) Create a flow chart to demonstrate their understanding of basic programming concepts.
- c) Compare and contrast types of networks, including LANs versus WANs and wireless versus wired.
- d) Diagram a LAN for home & small business & essential components needed.
- e) Create & use basic programming terms in context & in keying/designing a given program.

**ACADEMIC STANDARDS:**

*ELA7R2 – The student understands and acquires new vocabulary and uses it correctly in reading and writing.*

*ELA7W2 – The student demonstrates competency in a variety of genres.*

*ELA7W3 – The student uses research and technology to support writing.*

*ELA7W4 – The student consistently uses the writing process to develop, revise, and evaluate writing.*

*ELA7LSV1 – The student participates in student-to-teacher, student-to-student, and group verbal interactions.*

*ELA7LSV2 – The student listens to and views various forms of text and media in order to gather and share information, persuade others, and express and understand ideas.*

*M7P1 – Students will solve problems (using appropriate technology).*

*S7CS2 – Students will use standard safety practices for all classroom laboratory and field investigations.*

**CTAE NATIONAL STANDARDS:**

*Standard 1 – Assess the impact of information technology on society.*

*Standard 2 – Analyze and design information systems using appropriate development tools.*

*Standard 3 – Describe positions and career paths in information technology.*

**SAMPLE TASKS:**

- Information Systems Unit: “**Computer Science: ‘What’s It All About?’**”
  - Web Quest on Karel the Robot (Introduction to Computer Programming)
  - Compare and Contrast types of networks
- [www.mtsu.edu/~untch/karel/](http://www.mtsu.edu/~untch/karel/) Karel the Robot
- [www.webopedia.com](http://www.webopedia.com)
- Alice software

**READING STANDARD COMMENT:**

After the elementary years, students are seriously engaged in reading for learning. This process sweeps across all disciplinary domains, extending even to the area of personal learning. Students encounter a variety of informational as well as fictional texts, and they experience text in all genres and modes of discourse. In the study of various disciplines of learning (language arts, mathematics, science, social studies), students must learn through reading the communities of discourse of each of those disciplines. Each subject has its own specific vocabulary, and for students to excel in all subjects, they must learn the specific vocabulary of those subject areas *in context*.

Beginning with the middle grade years, students begin to self-select reading materials based on personal interests established through classroom learning. Students become curious about science, mathematics, history, and literature as they form contexts for those subjects related to their personal and classroom experiences. As students explore academic areas through reading, they develop favorite subjects and become confident in their verbal discourse about those subjects.

Reading across curriculum content develops both academic and personal interests in students. As students read, they develop both content and contextual vocabulary. They also build good habits for reading, researching, and learning. The Reading Across the Curriculum standard focuses on the academic and personal skills students acquire as they read in all areas of learning.

**CTAEMRC-1: Students will enhance reading in all curriculum areas by:**

- a. Reading in all curriculum areas.
  - Read a minimum of 25 grade-level appropriate books per year from a variety of subject disciplines and participate in discussions related to curricular learning in all areas.
  - Read both informational and fictional texts in a variety of genres and modes of discourse.
  - Read technical texts related to various subject areas.
- b. Discussing books.
  - Discuss messages and themes from books in all subject areas.
  - Respond to a variety of texts in multiple modes of discourse.
  - Relate messages and themes from one subject area to messages and themes in another area.
  - Evaluate the merit of texts in every subject discipline.
  - Examine author's purpose in writing.
  - Recognize the features of disciplinary texts.
- c. Building vocabulary knowledge.
  - Demonstrate an understanding of contextual vocabulary in various subjects.
  - Use content vocabulary in writing and speaking.
  - Explore understanding of new words found in subject area texts.
- d. Establishing context.
  - Explore life experiences related to subject area content.
  - Discuss in both writing and speaking how certain words are subject area related.

- Determine strategies for finding content and contextual meaning for unknown words.

### **WRITING:**

The student writes clear, coherent text. The writing shows consideration of the audience and purpose. The student progresses through the stages of the writing process (e.g., prewriting, drafting, revising, and editing successive versions).

#### **CTAEW-1: The student demonstrates competence in a variety of genres.**

The student produces technical writing (business correspondence: memoranda, emails, letters of inquiry, letters of complaint, instructions and procedures, lab reports, slide presentations) that:

- a) Creates or follows an organizing structure appropriate to purpose, audience, and context.
- b) Excludes extraneous and inappropriate information.
- c) Follows an organizational pattern appropriate to the type of composition.
- d) Applies rules of Standard English.

#### **CTAEW-2: The student uses research and technology to support writing.**

The student:

- a) Identifies topics, asks and evaluates questions, and develops ideas leading to inquiry, investigation, and research.
- b) Uses organizational features of electronic text (e.g., bulletin boards, databases, keyword searches, e-mail addresses) to locate relevant information.
- c) Includes researched information in different types of products (e.g., compositions, multimedia presentations, graphic organizers, projects, etc.).
- d) Uses appropriate structures to ensure coherence (e.g., transition elements).
- e) Supports statements and claims with anecdotes, descriptions, facts and statistics, and specific examples.
- f) Gives credit for both quoted and paraphrased information in a bibliography by using a consistent and sanctioned format and methodology for citations.

#### **CTAEW-3: The student consistently uses the writing process to develop, revise, and evaluate writing.**

The student:

- a) Plans and drafts independently and resourcefully.
- b) Uses strategies of note taking, outlining, and summarizing to impose structure on composition drafts.
- c) Edits writing to improve word choice after checking the precision of the vocabulary.

**ENTREPRENEURSHIP:**

**MKT-EN-1: Understands concepts and processes associated with successful entrepreneurial performance.**

- a) Define entrepreneurship.
- b) Identify and analyze characteristics of a successful entrepreneur.
- c) Identify the reasons for planning in entrepreneurial businesses.
- d) Discuss the entrepreneurial discovery processes.
- e) Assess global trends and opportunities.
- f) Determine opportunities for business creation.
- g) Generate ideas for business.
- h) Determine feasibility of ideas.
- i) Determine the major reasons for business failure.

**ACADEMIC STANDARDS:**

*ELA8W1 – The student produces writing that establishes an appropriate organizational structure, sets a context and engages the reader, maintains a coherent focus throughout, and signals a satisfying closure.*

*ELA8W3 – The student uses research and technology to support writing.*

*SSEF6 – The student will explain how productivity, economic growth and future standards of living are influenced by investment in factories, machinery, new technology and the health, education and training of people.*

*SSEIN1 – The student will explain why individuals, businesses and governments trade goods and services.*

**MKT-EN-2: Explain the fundamental concepts of business ownership.**

- a) Determine the relationship of competition to our private, free enterprise system.
- b) Explain the effects of competition on buyers and sellers.
- c) Identify the common types of business ownership.
- d) Compare and contrast the advantages and disadvantages of each type of ownership.
- e) Explain relevant government regulations relating to the operation of a business.
- f) Discuss the types of risks that businesses encounter.
- g) Explain how businesses deal with the various types of risks.
- h) Identify the market segment for the business.
- i) Formulate a marketing mix designed to reach a specific market segment.

- j) Utilize the marketing functions to determine the competitive advantage of the proposed business.

### **ACADEMIC STANDARDS:**

*ELA8W1 – The student produces writing that establishes an appropriate organizational structure, sets a context and engages the reader, maintains a coherent focus throughout, and signals a satisfying closure.*

*ELA8W3 – The student uses research and technology to support writing.*

*SSEF5 – The student will describe the roles of government in a market economy.*

### **CTAE FOUNDATION SKILLS:**

The Foundation Skills for Career, Technical and Agricultural Education (CTAE) are critical competencies that students pursuing any career pathway should exhibit to be successful. As core standards for all career pathways in all program concentrations, these skills link career, technical and agricultural education to the state’s academic performance standards.

The CTAE Foundation Skills are aligned to the foundation of the U.S. Department of Education’s 16 Career Clusters. Endorsed by the National Career Technical Education Foundation (NCTEF) and the National Association of State Directors of Career Technical Education Consortium (NASDCTEc), the foundation skills were developed from an analysis of all pathways in the sixteen occupational areas. These standards were identified and validated by a national advisory group of employers, secondary and postsecondary educators, labor associations, and other stakeholders. The Knowledge and Skills provide learners a broad foundation for managing lifelong learning and career transitions in a rapidly changing economy.

**CTAE-FS-1 Technical Skills:** Learners achieve technical content skills necessary to pursue the full range of careers for all pathways in the program concentration.

**CTAE-FS-2 Academic Foundations:** Learners achieve state academic standards at or above grade level.

**CTAE-FS-3 Communications:** Learners use various communication skills in expressing and interpreting information.

**CTAE-FS-4 Problem Solving and Critical Thinking:** Learners define and solve problems, and use problem-solving and improvement methods and tools.

**CTAE-FS-5 Information Technology Applications:** Learners use multiple information technology devices to access, organize, process, transmit, and communicate information.

**CTAE-FS-6 Systems:** Learners understand a variety of organizational structures and functions.

**CTAE-FS-7 Safety, Health and Environment:** Learners employ safety, health and environmental management systems in corporations and comprehend their importance to organizational performance and regulatory compliance.

**CTAE-FS-8 Leadership and Teamwork:** Learners apply leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.

**CTAE-FS-9 Ethics and Legal Responsibilities:** Learners commit to work ethics, behavior, and legal responsibilities in the workplace.

**CTAE-FS-10 Career Development:** Learners plan and manage academic-career plans and employment relations.

**CTAE-FS-11 Entrepreneurship:** Learners demonstrate understanding of concepts, processes, and behaviors associated with successful entrepreneurial performance.