



# CTAE COURSE CATALOG

Middle School & High School  
2017-2018



“Committed to High Performance”

Leading the Talent Pipeline for Careers

Dr. Eboni C. Chillis  
CTAE Coordinator  
Clayton County Public Schools  
1058 Fifth Avenue  
Jonesboro, GA 30236  
770-473-2700 Ext. 700181  
678-216-0336 (fax)



**Contributors**

Eboni Chillis, PhD

Gregory Guhl

Trudy Willis-Jones, PhD

Jacqueline Walker

### **Vision Statement**

The vision of Clayton County Public Schools is to be a district of excellence preparing ALL students to live and compete successfully in a global society.

### **Mission Statement**

The mission of Clayton County Public Schools is to be accountable to all stakeholders for providing a globally competitive education that empowers students to achieve academic and personal goals and to become college and career ready, productive, responsible citizens.

### **Core Belief Statements**

- We believe children have first priority on all of our resources.
- We believe education is the shared responsibility of the student, the parent/guardian, the school, and the community.
- We believe communication and understanding among all stakeholders of our diverse community are essential to achieving the goals of education.
- We believe that learning is a continuous process and most productive when the needs of each child are met through instruction provided by competent and caring teachers.
- We believe a learning environment where everyone experiences security, care, dignity, and respect is essential.

### **Strategic Goals**

1. To increase academic achievement for all students in Clayton County Public Schools as evidenced by state, national and international assessment results
2. To provide and maintain a safe, orderly and secure learning environment
3. To create an environment that promotes active engagement, accountability, and collaboration of all stakeholders to maximize student achievement
4. To effectively communicate the system's vision and purpose and allow stakeholder involvement in an effort to build understanding and support
5. To provide high quality support services delivered on time and within budget to promote student academic success in the Clayton County Public Schools
6. To recruit and retain highly qualified and effective staff

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  - Law Enforcement Services/Forensic Science Pathway
  - Firefighting and Emergency Services/Firefighting Pathway
- Marketing Cluster
  - Marketing Pathway
- Science, Technology, Engineering, & Mathematics Cluster
  - Engineering Drafting & Design Pathway
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## **INTRODUCTION**

The Division of Teaching and Learning has created a new course guide to ensure that:

- there is equity across schools regarding course offerings;
- suitable courses are available to students that are aligned to state and/or national standards;
- schools have clear expectations regarding courses to be assessed, through the state assessments, including the assessments tied to Specific Learning Objectives (SLOs).
- schools have clear expectations regarding Georgia's career pathways and that schools utilize this information to ensure that students are appropriately scheduled to graduate on time.

The school course guide should be used by principals, counselors, and registrars as a guide for how to appropriately select courses for students in all grade levels. In addition, the guide can be used to monitor and support student's progress through their six-year plan, as required by the state of Georgia. We encourage school personnel to utilize the information contained in the guide to make the best and most appropriate decisions for students' course selection and career pathway opportunities.

This master course catalog provides an overview all of the course offerings in Career, Technical and Agricultural Education (CTAE) grades 6-12. In addition to the course offerings, this catalog also outlines graduation requirements, promotion and retention policies and guidelines as well as the district assessments that are required for all students.

## **TESTING AND ASSESSMENT**

The Clayton County Public Schools' Testing and Assessment Program supports students' teaching and learning by measuring achievement of the state-mandated curriculum and sharing results with students, teachers, and administrators in order to identify successes and areas for improvement. Testing and Assessment in CCPS includes state and national summative assessments as well as interim formative and diagnostic tests. The assessment of student learning provides a basis for promoting student achievement, institutional effectiveness, and the continuous improvement of student support.

### **Program Goals**

- Summative assessments offer information on student success regarding the acquisition of the state-mandated curriculum. Summative assessment is defined as a "comprehensive evaluation of learning outcomes at the culmination of educational preparation. Summative assessment yields critical information for determining an individual's achievement of knowledge and skills" (Council on Academic Accreditation in Audiology and Speech-Language Pathology, 2012, para. 4).
- Reports are shared at the student, teacher/class, school, and district level in order to monitor strengths and weaknesses of student learning and success of the implementation of instructional programs.
- Student learning outcomes for all academic programs are measured in a systematic and continuous manner, using multiple direct and indirect assessment methodologies to document achievement of outcomes, as well as learning over time.

- Formative assessment is a part of the instructional process. When incorporated into classroom practice, it provides the information needed to adjust teaching and learning while they are happening. Formative assessment gives information to students on a frequent basis so they can adjust their practices towards learning. Formative assessment is defined as "ongoing measurement during educational preparation for improving student learning. Formative assessment yields critical information for monitoring an individual's acquisition of knowledge and skills" (Council on Academic Accreditation in Audiology and Speech-Language Pathology, 2012, para. 4). Furthermore, formative assessment is "an intentional and systematic process used by teachers and students during instruction that provides feedback to adjust on-going teaching and learning (and) to improve students' achievement of the intended instructional outcomes" (Council of Chief State School Officers, (CCSSO), 2008, p. 3).

## **MIDDLE SCHOOL TESTING AND ASSESSMENT SUMMATIVE ASSESSMENTS**

- *21<sup>st</sup> Century Skills Assessment*

## **HIGH SCHOOL TESTING AND ASSESSMENT SUMMATIVE ASSESSMENTS**

- *Career Technical and Agricultural Education (CTAE) End of the Pathway Assessments (EOPA)*

## **FORMATIVE ASSESSMENTS**

- *Student Learning Objective Assessments (SLO)*
- *ACCUPLACER (ACCUPLACER, a testing and advising program for placing students into postsecondary institutions)*
- *National Career Readiness Certification (NCRC) demonstrates achievement of workplace employability skills.*

# **DUAL ENROLLMENT**

## **Program Philosophy**

Georgia's dual enrollment program that allows high school students (9th – 12th grade) to earn college credit while working on their high school diploma. Dual Enrollment replaces ACCEL, HOPE Grant for dual enrollment now covers tuition, mandatory fees and required textbooks.

## **Dual Enrollment Credit Programs**

Any eligible high school student may enroll full-time or part-time in approved credit-bearing college-level courses approved by the State Board of Education. They must meet the eligibility requirements of the individual dual credit program and the postsecondary institution to participate. Approved classes may include degree level or non-degree level courses in the five main academic areas (English, math, science, social studies and foreign language), as well as electives, career, technical and agricultural offerings.

The courses a student chooses each term must be listed on h/her Dual Enrollment application and must be approved by his or her high school and the postsecondary institution he or she will be attending. *Approved courses must count toward state and/or local high school graduation requirements.*

*\*For more information, see your school counselor or visit: <http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Transition-Career-Partnerships.aspx>*

## **Articulation**

Articulation refers to credit that students are awarded by both the high school and the post-secondary institution when they have successfully completed identified academic and career related courses leading to a diploma, certificate or degree. There are some selected statewide articulated course assessments and more will be added in the future. Through an articulation agreement, institutions agree to aid in a seamless transition without repetition of course work already mastered in high school. There are no costs for participation since the work is high school courses taught at the local high school, during their normal school day with their regular high school teachers.

### ***Six Statewide Articulated Courses***

46.54600 Introduction to Construction .....COFC 1010 Introduction to Construction  
48.58100 Introduction to Metals..... WELD 1000 Introduction to Welding Technology  
20.53100 Introduction to Culinary Arts..... CUL 1000 Fundamentals to Culinary Arts  
20.52810 Intro to Early Childhood Care & Education . ECCE 1101 Intro to Early Childhood Care & Education  
07.41100 Principles of Accounting I ..... ACCT 1100 Financial Accounting I  
08.47400 Marketing Principles.....MKTG 1100 Principles of Marketing

### ***Eight Statewide Articulated Courses December 2012, Pilot Launch***

47.57910 Heating Ventilation & Air .....Refrigeration Fundamentals  
25.52100 Introduction to Healthcare Science ..... Introduction to Healthcare  
25.59100 Medical Terminology in Healthcare .....Medical Terminology

### ***Eight Statewide Articulated Courses Continued...***

47.57600 Electrical/Electronic Systems & Design.....Electrical Systems  
07.44110 Computer Applications I..... Introduction to Computers  
20.53310 Culinary Arts II..... Principles of Cooking  
48.54200 Survey of Engineering Graphics.....CAD Fundamentals  
48.56200 Graphic Design & Production..... Introduction to Design & Media



# **CAREER, TECHNICAL & AGRICULTURAL EDUCATION** **(CTAE) CURRICULUM**

## **Program Philosophy**

*Career inspiration* in PreK-2, *career awareness* in elementary school, *career visualization* in middle school, and *career preparation* in high school are vital components of one's educational career. Clayton County Public School's Career, Technical and Agricultural Education (CTAE) program provides the interdisciplinary and technical skills to every student focused on attaining the knowledge and abilities that businesses and industries desire for high-demand, high-skilled, high-wage occupations. Students who graduate from high school after successfully completing a CTAE "Career Pathway" are equipped for immediate employment, post-secondary education, and life-long learning. In essence, students in CTAE are "college, career and workforce ready" - prepared to compete in the global marketplace.

## **Elementary School and Career Awareness**

HB 713 mandates a minimum course of study in career education in grades K-12. To support schools in fulfilling these requirements, the grade specific career awareness activities listed as an indicator on the College and Career Ready Performance Index have been developed to assist students with career awareness. Making successful transitions into satisfying college and career ready options are fundamental tasks for school counselors, teachers, administrators, and advisors. Social skills and the development of workforce readiness behaviors are crucial in career development.

### **Georgia's 17 Career Clusters**

1. Agriculture, Food & Natural Resources
2. Architecture & Construction
3. Arts, A/V Technology & Communications
4. Business Management & Administration
5. Education & Training
6. Energy
7. Finance
8. Government & Public Administration
9. Health Science
10. Hospitality & Tourism
11. Human Services
12. Information Technology
13. Law, Public Safety, Corrections & Security
14. Manufacturing
15. Marketing
16. Science, Technology, Engineering & Mathematics
17. Transportation, Distribution & Logistics

The Georgia Department of Education has developed seventeen (17) elementary career awareness activities for local school systems to use as a guide to assist with the implementation of the College and Career Readiness Performance Indicators appropriate for the career awareness and career development indices. Some activities may contain more than one activity to allow for more opportunities to facilitate awareness of the cluster.

These activities will assist elementary students with:

- developing sense of self and areas of interest
- developing and acquiring positive attitudes
- developing a sense of career awareness and the relationship with academics and personal interests.

**Additional resources are located at:** <http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Elementary-Cluster-Activities.aspx>

## **CTAE CURRICULUM FOR MIDDLE SCHOOL (Grades 6-8)**

**Business & Computer Science Pathway/Connections:** this course allows students to gain a clear understanding of the basic operations of the computer and printer, and proper keyboard techniques. Students develop word processing, spreadsheet, and presentation skills. Students also learn how to format basic letters and reports.

- 6th Grade - 07.08300 - Business & Computer Science
- 7th Grade - 07.08400 - Business & Computer Science
- 8th Grade - 07.08500 - Business & Computer Science

**Career Development Pathway/Connections:** this course offers explorations in career choices. Students develop career knowledge with the support of hands-on interactive training experiences. Middle school students will be provided opportunities to identify career interest, abilities, aptitudes, values, and personality traits as they relate to career planning.

- 6th Grade - 32.02100 - Career Awareness
- 7th Grade - 32.02200 - Career Discovery
- 8th Grade - 32.02300 - Career Management

**Communications Pathway/Connections:** this course introduces students to the history of mass media, terminology, safety, basic equipment, script writing, storyboarding, production teams, planning, writing, directing, recording and editing a production, graphic communications, and professional ethics. Students will explore the career field within cooperative learning simulation projects and project-based learning experiences.

- 6th Grade - 48.03100 - Broadcast and Graphic Communications
- 7th Grade - 48.03200 - Introduction to Communications
- 8th Grade - 48.03300 - Applications of Communications

**Engineering & Technology Pathway/Connections:** this course introduces students to the materials and processes of industry and careers within industry. It acquaints students with various processes used in the researching, designing, engineering, and production of products through project-based experiences.

- 6th Grade - 21.02100 - Exploring Engineering and Technology
- 7th Grade - 21.02200 - Invention and Innovation
- 8th Grade - 21.02300 - Technological Systems

**Family & Consumer Sciences Pathway/Connections:** this course exposes students to different careers relating to the Family and Consumer Sciences Education field such as clothing and textiles, foods, and nutrition, child care and health occupations.

- 6th Grade - 20.01100 Family & Consumer Science
- 7th Grade - 20.01200 Family & Consumer Science
- 8th Grade - 20.01300 Family & Consumer Science

**Healthcare Science Pathway/Connections:** this course will enable students to receive initial exposure to Healthcare Science skills and attitudes applicable to the healthcare industry. The concepts of health, wellness, and preventative care are evaluated, as well as ethical and legal responsibilities of today's healthcare provider.

- 6th Grade - 25.03300 Healthcare Science
- 7th Grade - 25.03400 Healthcare Science
- 8th Grade - 25.03500 Healthcare Science

## **CTAE CURRICULUM FOR MIDDLE SCHOOL (Grades 6-8) Continued...**

**Marketing, Sales & Service Pathway/Connections:** this course will enable students to learn the fundamentals about our free enterprise system and how marketing is imperative to our economy. Students will gain knowledge about basic marketing concepts, and they will develop skills that allow them to use the marketing information through project-based instruction. This course will encourage entrepreneurial interests and develop entrepreneurial abilities thereby fostering the idea of self-employment as an income generating option.

- 6th Grade - 06.04100 Basic Skills of Marketing
- 7th Grade - 06.04200 Exploring Marketing Education
- 8th Grade - 06.04300 Pathways in Marketing

<b>MIDDLE SCHOOLS CTAE OFFERINGS:</b>	
<b>Adamson</b>	Business & Computer Science Engineering & Technology
<b>Babb</b>	Business & Computer Science Family & Consumer Sciences
<b>Forest Park</b>	Business & Computer Science Family & Consumer Sciences
<b>Jonesboro</b>	Business & Computer Science Engineering & Technology Family & Consumer Sciences
<b>Kendrick</b>	Business & Computer Science Class 1 Business & Computer Science Class 2
<b>Lovejoy</b>	Business & Computer Science Engineering & Technology
<b>Morrow</b>	Business & Computer Science Career Development Family & Consumer Sciences
<b>Mundy's Mill</b>	Business & Computer Science Class 1 Business & Computer Science Class 2
<b>North Clayton</b>	Business & Computer Science Engineering & Technology
<b>Pointe South</b>	Family & Consumer Sciences Engineering & Technology
<b>Rex Mill</b>	Business & Computer Science Engineering & Technology Health Science STEM
<b>Riverdale</b>	Business & Computer Science Engineering & Technology Family & Consumer Sciences
<b>M.D. Roberts</b>	Business and Technology
<b>Sequoyah</b>	Communications Engineering & Technology
<b>Eddie White Academy</b>	Health Science Career Development Business & Computer Science Marketing

## CTAE CURRICULUM FOR HIGH SCHOOL (Grades 9-12)

Career preparation and pathway completion in high school are vital components of one's educational career. Clayton County Public Schools', Career, Technical and Agricultural Education (CTAE) program provides the interdisciplinary and technical skills to every student focused on attaining the knowledge and abilities that businesses and industries desire for high-demand, high-skilled, high-wage occupations. It is recommended that these courses are taken in sequential order beginning in 9<sup>th</sup> grade to ensure students are pathway completers.

**Pathway completers** are students who have completed the three required courses in our state's career pathways and eligible to attain an end-of-the-pathway assessment (EOPA) credential.

**An EOPA test-taker** is a student who has completed three sequential/required courses in a career pathway and sat for an industry recognized exam to gain industry credentials or test results that prove competency in varied skills/trades; through test vendors such as: *NOCTI, SkillsUSA, National Automotive Student Skills Standards Assessment.*

Georgia, like many other career and technical education programs around the nation, has worked in recent years to establish a measurement mechanism to ascertain the level of technical skill attainment on behalf of its career pathway completers.

Clayton County Public Schools is committed to ensuring our students are college and career ready! A Pathway Completer's exiting assessment (or credentialing) opportunity not only supports the mandates set forth in the criteria of their career pathway but would also support Georgia students in their quest to leave high school with valuable credentials. The state's technical skill attainment inventory is comprised of several measurement components:

- National Industry certifications,
- national occupational assessments, and
- state licensures and state developed assessments




### CTAE Career Academies, Magnet Programs and STEM Schools

Morrow High	Morrow Aviation & Innovation Career Academy
Morrow High	Morrow Science, Technology & Mathematics Magnet
North Clayton High	North Clayton Aviation & Innovation Career Academy
Lovejoy High	Lovejoy Mathematics & Computer Science Magnet
Mundy's Mill High	Mundy's Mill Film & Media Magnet
Rex Mill Middle	Rex Mill Middle STEM School



**HIGH SCHOOL CTAE PATHWAY OFFERINGS:**

<p align="center"><b>Charles Drew High School</b></p> <ol style="list-style-type: none"> <li>1. Culinary Arts Pathway</li> <li>2. Business &amp; Technology Pathway (2)</li> <li>3. Financial Services Pathway</li> <li>4. Health Informatics (HI)-HI Management/Medical Office Pathway</li> <li>5. Law Enforcement Services/Forensic Science Pathway (2)</li> <li>6. Sports &amp; Entertainment Marketing Pathway</li> <li>7. Engineering Drafting and Design Technology Pathway</li> <li>8. Air Force JROTC Pathway</li> </ol> <p align="right">Work-based Learning</p>	<p align="center"><b>Forest Park High School</b></p> <ol style="list-style-type: none"> <li>1. Cosmetology Pathway</li> <li>2. Business &amp; Technology Pathway (2)</li> <li>3. Health Informatics (HI)-HI Management/Medical Office Pathway</li> <li>4. Law Enforcement Services/Forensic Science Pathway</li> <li>5. Marketing Pathway (2)</li> <li>6. Programming Pathway</li> <li>7. Advanced Accounting</li> <li>8. Air Force JROTC Pathway</li> </ol> <p align="right">Work-based Learning</p>
<p align="center"><b>Jonesboro High School</b></p> <ol style="list-style-type: none"> <li>1. Cosmetology Pathway</li> <li>2. Barbering Pathway</li> <li>3. Business &amp; Technology Pathway (2)</li> <li>4. Engineering &amp; Technology Pathway</li> <li>5. Health Informatics (HI)-HI Management/Medical Office Pathway</li> <li>6. Law Enforcement Services/Forensic Science Pathway</li> <li>7. Food &amp; Nutrition Pathway</li> <li>8. Carpentry Pathway</li> <li>9. Air Force JROTC Pathway</li> </ol> <p align="right">Work-based Learning</p>	<p align="center"><b>Lovejoy High School</b></p> <ol style="list-style-type: none"> <li>1. Automobile Maintenance &amp; Light Repair Pathway</li> <li>2. Business &amp; Technology Pathway (2)</li> <li>3. Carpentry Pathway</li> <li>4. Therapeutic Services: Patient Care Tech. Pathway</li> <li>5. Marketing Pathway</li> <li>6. Food &amp; Nutrition Pathway</li> <li>7. Web &amp; Digital Design Pathway</li> <li>8. Advanced Accounting</li> <li>9. Computer Science (Magnet School)</li> <li>10. Air Force JROTC Pathway</li> </ol> <p align="right">Work-based Learning</p>
<p align="center"><b>Morrow High School</b></p> <ol style="list-style-type: none"> <li>1. Automobile Maintenance &amp; Light Repair Pathway</li> <li>2. Business &amp; Technology Pathway</li> <li>3. Web &amp; Digital Design Pathway</li> <li>4. Engineering &amp; Technology Pathway</li> <li>5. Marketing Pathway</li> <li>6. Food &amp; Nutrition Pathway</li> <li>7. Law Enforcement Services/Forensic Science Pathway (2)</li> <li>8. Pharmacy Pathway (Magnet Program)</li> <li>9. Engineering Drafting &amp; Design Technology Pathway (Magnet Program)</li> <li>10. Aviation Operations/Maintenance Pathway</li> <li>11. Air Force JROTC Pathway</li> </ol> <p align="right">Work-based Learning</p>	<p align="center"><b>Mundy's Mill High School</b></p> <ol style="list-style-type: none"> <li>1. Business &amp; Technology Pathway (2)</li> <li>2. Marketing Pathway (2)</li> <li>3. Programming Pathway</li> <li>4. Audio/Video Technology &amp; Film (Magnet)</li> <li>5. Web &amp; Digital Design Pathway</li> <li>6. Air Force JROTC Pathway</li> </ol> <p align="right">Work-based Learning</p> <div align="right">  </div>

<p style="text-align: center;"><b>Mount Zion High School</b></p> <ol style="list-style-type: none"> <li>1. Business &amp; Technology Pathway (2)</li> <li>2. Engineering &amp; Technology Pathway</li> <li>3. Audio-Video Technology &amp; Film Pathway</li> <li>4. Carpentry Pathway</li> <li>5. Marketing Pathway</li> <li>6. Food &amp; Nutrition Pathway</li> <li>7. Health Informatics (HI)-HI Management/Medical Office Pathway</li> <li>8. Allied Health Pathway</li> <li>9. Air Force JROTC Pathway</li> </ol> <p style="text-align: right;">Work-based Learning</p>	<p style="text-align: center;"><b>Riverdale High School</b></p> <ol style="list-style-type: none"> <li>1. Automobile Maintenance &amp; Light Repair Pathway</li> <li>2. Business &amp; Technology Pathway</li> <li>3. Cosmetology Pathway</li> <li>4. Marketing Pathway</li> <li>5. Food &amp; Nutrition Pathway</li> <li>6. Law Enforcement Services/Forensic Science Pathway</li> <li>7. Entrepreneurship Pathway</li> <li>8. Plant &amp; Landscape Systems Pathway</li> <li>9. Teaching as a Profession</li> <li>10. Air Force JROTC Pathway</li> </ol> <p style="text-align: right;">Work-based Learning</p>
<p style="text-align: center;"><b>North Clayton High School</b></p> <ol style="list-style-type: none"> <li>1. Cosmetology Pathway</li> <li>2. Business &amp; Technology Pathway</li> <li>3. Food &amp; Nutrition Pathway</li> <li>4. Programming Pathway</li> <li>5. Therapeutic Services/Allied Health &amp; Medicine</li> <li>6. Law Enforcement Services/Forensic Science Pathway</li> <li>7. Marketing Pathway</li> <li>8. Aviation Operations/Maintenance Pathway</li> <li>9. Air Force JROTC Pathway</li> </ol> <p style="text-align: right;">Work-based Learning</p>	<p style="text-align: center;"><b>Perry Center</b></p> <ol style="list-style-type: none"> <li>1. Early Childhood Care &amp; Education Pathway</li> <li>2. Audio-Video Technology &amp; Film Pathway</li> <li>3. Automobile Maintenance &amp; Light Repair Pathway</li> <li>4. Advanced Accounting Pathway</li> <li>5. Web &amp; Digital Design Pathway</li> </ol> <p style="text-align: right;">Work-based Learning</p>
<p style="text-align: center;"><b>Elite Scholars</b></p> <ol style="list-style-type: none"> <li>1. Animation &amp; Digital Media Pathway</li> <li>2. Business &amp; Technology Pathway</li> </ol> <p style="text-align: right;">Work-based Learning</p>	<p style="text-align: center;"><b>Work-Ready Academy</b> <b>TBD</b></p>

**\*Fourth Science Options**

Click below for the following courses count towards satisfying the fourth science requirement and a CTAE pathway completion requirement and **have been approved** by the Board of Regents as a fourth science.

<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/2016-2017-4th-Science-Options.pdf>



## **Agriculture, Food, and Natural Resources Career Cluster**

The Agriculture, Food, & Natural Resources Career Cluster includes the production, processing, marketing, financing, distribution, and development of agricultural commodities and resources. These commodities include food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

### Plant & Landscape Systems Pathway

#### **02.47100 Basic Agriculture Science**

This course is designed as the foundational course for all Agriculture, Food & Natural Resources Pathways. The course introduces the major areas of scientific agricultural production and research; presents problem solving lessons and introductory skills and knowledge in agricultural science and agri-related technologies. Classroom and laboratory activities are supplemented through supervised agricultural experiences and leadership programs and activities. This course is the prerequisite for all AFNR pathways and is intended for students in grades 8-10.

**Prerequisite:** *None*

#### **01.46100 General Horticulture & Plant Science**

This course is designed as an introduction for the Horticulture-Plant Science. The course introduces the major concepts of plant and horticulture science. Classroom and laboratory activities are supplemented through supervised agricultural experiences and leadership programs and activities. **Prerequisite:** *Basic Agriculture Science*

#### **01.47000 Nursery & Landscape**

This course is designed to provide students with the basic skills and knowledge utilized by the green industry in nursery production and management and landscape design and management. Classroom and laboratory activities are supplemented through supervised agricultural experiences and leadership programs and activities.

**Prerequisites:** *Basic Agriculture Science, General Horticulture & Plant Science*

## **Architecture and Construction Career Cluster**

The Architecture and Construction Career Cluster includes careers in designing, planning, managing, and building structures.

### Carpentry Pathway

#### **46.54500 Industry Fundamentals & Occupational Safety**

This course is designed as the foundational course in the Carpentry, Plumbing, Electrical, Masonry, Machining, Welding, Sheet Metal, Heating, Ventilation, Air Conditioning and Refrigeration, and HVACR Electrical pathways to prepare students for pursuit of any career in construction. The course prepares the trainee for the basic knowledge to function safely on or around a construction site and in the industry in general and will provide the trainee with the option for an Industry Certification in the Construction Core. Pre-requisite for this course is advisor approval. **Prerequisite:** *None*

#### **46.54500 Introduction to Construction**

This course is preceded by the Occupational Safety and Fundamentals course. This course offers an opportunity for students to build on their knowledge and skills developed in Industry Fundamentals and Occupational Safety. It introduces them to four construction craft areas and is



also the second step towards gaining a Level One Industry Certification in one of the craft areas. The goal of this course is to introduce students to the history and traditions of the carpentry, masonry, plumbing, and electrical craft trades. Students will explore how the various crafts have influenced and been influenced by history. The student will also learn and apply knowledge of the care and safe use of hand and power tools as related to each trade. In addition, students will be introduced to and develop skills to differentiate between blueprints related to each individual craft areas. **Prerequisite:** *Industry Fundamentals and Occupational Safety*

### **46.5500 Carpentry**

This course is preceded by Introduction to Construction and is the third of three courses that provides the student a solid foundation in carpentry skills and knowledge. As the third step in gaining a Level One Industry Certification in Carpentry, the course provides an overview of the building materials used in the carpentry craft, as well as teaching techniques for reading and using blueprints and specifications related to the carpentry craft. The course provides specific knowledge and skills in site layout and floor and wall framing systems, and includes basic industry terminology for a carpentry craftsman.

**Prerequisites:** *Industry Fundamentals and Occupational Safety, Introduction to Construction*

## **Arts, Audio/Video Technology, and Communications Career Cluster**

In this pathway individuals may design, manufacture, operate and/or repair audiovisual equipment. Students will be involved in the presentation of sound, video and data in a variety of venues. Students may gather information and prepare broadcasts or be involved in the set up and operations of equipment used to record and transmit programs and/or motion pictures. Students may provide sound mixing and/or video editing services. This pathway culminates with an opportunity for students to take the SkillsUSA Television Video Production end of pathway assessment.

### Audio-Video Technology & Film Pathway

#### **10.51810 Audio-Video Technology & Film I**

This course will serve as the foundational course in the Audio & Video Technology & Film pathway. The course prepares students for employment or entry into a postsecondary education program in the audio and video technology career field. Topics covered may include, but are not limited to: terminology, safety, basic equipment, script writing, production teams, production and programming, lighting, recording and editing, studio production, and professional ethics. Skills USA, the Georgia Scholastic Press Association, Technology Student Association (TSA) and Student Television Network are examples of, but not limited to, appropriate organizations for providing leadership training and/or for reinforcing specific career and technical skills and may be considered an integral part of the instructional program. All material covered in Audio & Video Technology & Film I will be utilized in subsequent courses. The pre-requisite for this course is advisor approval. **Prerequisite:** *None*

#### **10.51910 Audio-Video Technology & Film II**

This one credit course is the second in a series of three that prepares students for a career in Audio Video Technology and Film production and/or to transfer to a postsecondary program for further study. Topics include Planning, Writing, Directing and Editing a Production; Field Equipment Functions; Operational Set-Up and Maintenance; Advanced Editing Operations; Studio Productions; Performance; Audio/Video Control Systems; Production Graphics; Career Opportunities; and Professional Ethics. Skills USA, the Georgia Scholastic Press Association, Technology Student Association (TSA) and Student Television Network are examples of, but not limited to, appropriate organizations for providing leadership training and/or for reinforcing specific career and technical skills and may be considered an integral part of the instructional program. **Prerequisite:** *Audio & Video Technology & Film I*

### **10.52010 Audio-Video Technology & Film III**

This one-credit transition course is designed to facilitate student-led projects under the guidance of the instructor. Students work cooperatively and independently in all phases of production. Skills USA, the Georgia Scholastic Press Association, Technology Student Association (TSA), and Student Television Network are examples of, but not limited to, appropriate organizations for providing leadership training and/or for reinforcing specific career and technical skills and may be considered an integral part of the instructional program. **Prerequisites:** *Audio-Video Technology & Film II, Audio-Video Technology & Film II*

## Animation & Digital Design Pathway

### **48.42100 Introduction to Digital Media**

Students in the Introduction of Digital Media course will learn the basic components of 2-D and 3D animation development from storyboarding elements to fundamental software capabilities. The course serves as an introduction to the animation history, keyboarding shortcuts, project filing, and career awareness. Instruction in this course focuses on storyboard creation, the physics and anatomy of motion, technology of animation, properties and use of color, cameras and lighting, fundamentals of modeling and animating, creating a portfolio and file management. This course provides a structure for digital literacy as well as development of technical knowledge and intellectual skills for analytical thinking; in addition, students will work productively and responsibly in individual and collaborative settings. This introductory pathway course of three sequenced courses will give students the opportunity to earn an industry credential in animation. **Prerequisite:** *None*

### **48.42200 Principles and Concepts of Animation**

In this course, students will continue to develop and implement aesthetics of color selection, storyboarding in 2-D digital animation, and develop animatic creations from 2-D to 3-D. Students in this course will learn interface tools, the use of drawing tools, animating the camera, importing images from web sources and files, working with sound and lip syncing, understanding paths and motion design, and frame by frame animation creation relative to sequence planning and pacing. This course will allow students to explore more advanced aspects of character animation including subtle character gesture and advanced action timing with emphasis on personal observation. The course will allow students to develop an understanding of basic sound considerations such as lip syncing, voice-overs, and the synchronization of sound with the visual product. This course will allow students to build on previously learned storyboarding skills, develop scripts, determine character motivations, consider setting and motion variables, and learn other unique traits of animation through integrated activities.

**Prerequisite:** *Introduction to Digital Media*

### **48.42300 Advanced Animation, Game and APP Design**

In this course students will continue working in 2-D and 3-D environments by importing 3-D models while working in 3-D space morphing, and inverse kinematics. While learning the basics of Game and APP design, the students will acquire knowledge of human and animal animations, apply the aesthetic and technical aspects of animation of characters, and analyze the physics and physicalization of action, weight, and timing. The course advances students' knowledge of sound integration into animated products; by focusing on skills that include lip-syncing, voice overs, and synchronization. Portfolio development will include animation reels and other products. Students will learn the processes of post-production and will work both independently and in small production teams to manage the production pipeline for a 3-D project. In the final phases of the project completion, students will work collaboratively to meet deadlines and will be expected to produce an animated final project that reflects competency with editing, rendering, updating reel, and self-promotional support items. Students may also develop a working game or app as a final project. Through the exploration of projects, students will continue to work independently and collaboratively to develop content delivery, story and technical mastery.

**Prerequisite:** *Principles and Concepts of Animation*

#### **48.42400 Animation Internship/Capstone**

This course is designed to offer students (preferably upper classmen - juniors or seniors) the opportunity to become effective and efficient multi-skilled animators as they develop a working knowledge of various animation opportunities. Students focusing on a career path in the animation field may apply classroom/lab knowledge and skills in the studio setting as they participate in direct or simulated client process. The curriculum allows instructors to provide options for classroom/student growth opportunities in area(s) of interest to the student. These options may be determined by community need, available resources, and/or student interest, etc. This course was developed according to a basic 50-minute class time frame, but may be adjusted according to local system schedules. Instructors may select which option to use A or B and what classroom content standards 1-14 best meet his/her individual classroom needs in addition to the required WBL/capstone project to equal total class time available for the course. **Prerequisite:** *Advanced Animation, Game and APP Design*

### Graphic Design Pathway

#### **48.56100 Introduction to Graphics & Design**

This course is designed as the foundational course for both the Graphics Production and Graphics Design pathways. The Graphics and Design course provides students with the processes involved in the technologies of printing, publishing, packaging, electronic imaging, and their allied industries. In addition, the Graphics and Design course offers a range of cognitive skills, aesthetics, and crafts that includes typography, visual arts, and page layout. Prerequisite for this course is adviser approval. **Prerequisite:** *None*

#### **48.56200 Graphic Design & Production**

As the second course in the Graphics Communication and Graphics Design Pathways, this course builds on knowledge and skills learned in the Introduction to Graphics and Design course and focuses on procedures commonly used in the graphic communication and design industries. Students will gain more experience in creative problem solving and the practical implementation of those solutions across multiple areas of graphic design and graphic communications.

**Prerequisite:** *Introduction to Graphics & Design*

### **48.52800 Advanced Graphic Design**

Students will continue to explore in an increasingly independent manner, the principles of design and layout procedures relating to the field of graphic design. Content will cover electronic systems and software programs used in graphic design, page composition, image conversion, and digital printing. Knowledge and skills in digital design and imaging will be enhanced through experiences that simulate the graphic design industry and school-based and work-based learning opportunities. This is the final course in the Graphic Design pathway. **Prerequisites:** *Introduction to Graphics & Design, Graphic Design & Production*

### Graphics Communication Pathway

#### **Four Course Options for Dual CTAE Pathway Completers:**

#### **48.57000 Advanced Graphic Output Processes**

As the third course in the Graphics Communication Pathway, students will gain more advanced levels of experience to complete the output processes of various projects in an increasingly independent manner. Students also learn to manage the output and completion process as a whole including customer relations management, printing, finishing, and binding. Students will continue to accumulate work samples that will constitute their personal portfolio. Upon successful completion of the course, students are prepared to move into employment or a post-secondary educational environment where self-motivation and a high level of skill are expected. This is the final course in the Graphic Communication Pathway.

**Prerequisites:** *Introduction to Graphics & Design, Graphic Design & Production*

## **Business Management and Administration Career Cluster**

The Business and Computer Science program offers students the chance to learn about finance, accounting, legal operations of business, administrative support, information management, small business development, international business, and computing, which involves programming and technical support. Students learn first-hand how to implement successful business plans and manage people, budgets, and products. Students will work with the latest technological tools and innovative curriculum in hands-on learning projects that include web page production, managing databases, and writing programming code to name a few. Students will also master standards pertaining to ethical and privacy issues related to computers, business, finances, and the Internet.

### Business & Technology Pathway

#### **07.44130 Introduction to Business & Technology**

The course is designed for high school students as a gateway to the career pathways above, and provides an overview of Business and Technology Pathway skills required for today's business environment. Knowledge of business principles, the impact of financial decisions, and technology proficiencies demanded by business combine to establish the elements of this course. Emphasis is placed on developing proficient fundamental computer skills required for all career pathways. Students will learn essentials for working in a business environment, managing a business, and owning a business. The intention of this course is to prepare students to be successful both personally and professionally in an information-based society. Students will not only understand the concepts, but apply their knowledge to situations and defend their actions/decisions/choices through the knowledge and skills acquired in this course. Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-

curricular student organization, Future Business Leaders of America (FBLA), are integral components of both the employability skills standards and content standards for this course.

**Prerequisite:** *None*

### **07.44100 Business & Technology**

How is technology used to solve business problems and communicate solutions? Business and Technology Pathway is designed to prepare students with the knowledge and skills to be an asset to the collaborative, global, and innovative business world of today and tomorrow. Mastery use of spreadsheets and the ability to apply leadership skills to make informed business decisions will be a highlight of this course for students. Publishing industry appropriate documents to model effective communication and leadership will be demonstrated through project based learning. Students will use spreadsheet and database software to manage data while analyzing, organizing and sharing data through visually appealing presentation. **Prerequisite:** *Introduction to Business and Technology*

### **07.45100 Business Communications**

What message are you sending when you speak, write, and listen? As one of the most important skills for employers, students will explore the value of communication in their personal and professional life. The digital presence and impact of written and visual communication in a technological society will be addressed. Students will create, edit, and publish professional-appearing business documents with clear and concise communication. Creative design, persuasive personal and professional communications will be applied through research, evaluation, validation, written, and oral communication. Leadership development and teamwork skills will be stressed as students work independently and collaboratively. Presentation skills will be developed and modeled for students master presentation software in this course.

**Prerequisites:** *Introduction to Business and Technology, Business and Technology*

## Entrepreneurship Pathway

### **07.44130 Introduction to Business & Technology**

The course is designed for high school students as a gateway to the career pathways above, and provides an overview of Business and Technology Pathway skills required for today's business environment. Knowledge of business principles, the impact of financial decisions, and technology proficiencies demanded by business combine to establish the elements of this course. Emphasis is placed on developing proficient fundamental computer skills required for all career pathways. Students will learn essentials for working in a business environment, managing a business, and owning a business. The intention of this course is to prepare students to be successful both personally and professionally in an information-based society. Students will not only understand the concepts, but apply their knowledge to situations and defend their actions/decisions/choices through the knowledge and skills acquired in this course.

Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of both the employability skills standards and content standards for this course.

**Prerequisite:** *none*

### **06.41500 Legal Environment of Business**

Legal Environment of Business addresses statutes and regulations affecting businesses, families, and individuals. All students will benefit with the knowledge of business law as they will eventually assume roles as citizens, workers, and consumers in their communities and in society at large. Students will get an overview of business law while concentrating on the legal aspects of business ownership and management. Legal issues addressed include court procedures, contracts, torts, consumer law, employment law, environmental law, international law, ethics, and the role of the government in business. Students will not only understand the concepts, but will also apply their knowledge to situations and defend their actions, decisions, and choices.

Various forms of technologies will be highlighted to expose students to the emerging technologies impacting the business world. Professional communication skills and practices, problem-solving, ethical and legal issues, and the impact of effective presentation skills are expanded in this course to prepare students to be college and career ready. Employability skills are integrated into activities, tasks, and projects throughout this course to demonstrate skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of both the employability skills and content standards of this course. Legal Environment of Business is the second course in the Entrepreneurship and Human Resources Management pathway in the Business Management & Administration Cluster. Students enrolled in this course should have successfully completed the first course in the pathway Introduction to Business & Technology.

**Prerequisites:** *Intro to Business and Technology*

### **06.41610 Entrepreneurship**

Entrepreneurship is the third course in the pathway in the Business Management & Administration Cluster. Students enrolled in this course should have successfully completed Introduction to Business & Technology and Legal Environment of Business. Entrepreneurship focuses on recognizing a business opportunity, starting a business, operating and maintaining a business. Students will be exposed to the development of critical thinking, problem solving, and innovation in this course as they will either be the business owner or individuals working in a competitive job market in the future. Integration of accounting, finance, marketing, business management, legal and economic environments will be developed throughout projects in this course. Working to develop a business plan that includes structuring the organization, financing the organization, and managing information, operations, marketing, and human resources will be a focus in the course. Engaging students in the creation and management of a business and the challenges of being a small business owner will be fulfilled in this course. **Prerequisites:** *Intro to Business and Technology, Legal Environment of Business*

## **Education and Training Career Cluster**

The Education program prepares students for occupations in teaching and early childhood education. The Education concentration is further divided into pathways that are more specialized areas of study with an identified sequence of courses in that area. Educational levels, salaries, and demand vary within the concentration. This program allows students the opportunities to experience classroom and laboratory components combine hands-on projects with a rigorous curriculum to prepare students for the most challenging programs including articulated credit through a partnerships with some University System of Georgia institutions, work-based learning opportunities through the Youth Apprenticeship Program and other career-related activities, and, currently membership in the Family, Career & Community Leaders of America.

## Early Childhood & Education I Pathway

### **20.52810 Early Childhood Care & Education I**

The Early Childhood Education I course is the foundational course under the Early Childhood Care & Education pathway and prepares the student for employment in early childhood education and services. The course addresses the knowledge, skills, attitudes, and behaviors associated with supporting and promoting optimal growth and development of infants and children. **Prerequisite:** *None*

### **20.42400 Early Childhood Care & Education II**

Early Childhood Education II is the second course in the Early Childhood Care and Education pathway and further prepares the student for employment in early childhood care and education services. The course provides a history of education, licensing and accreditation requirements, and foundations of basic observation practices and applications. Early childhood care, education, and development issues are also addressed and include health, safety, and nutrition education; certification in CPR/First Aid/Fire Safety; information about child abuse and neglect; symptoms and prevention of major childhood illnesses and diseases; and prevention and control of communicable illnesses. **Prerequisite:** *Early Childhood Care and Education I*

### **20.42500 Early Childhood Care & Education III**

Early Childhood Education III is the third course in the Early Childhood Care and Education pathway and one option for program completers who may not have the opportunity of participating in the Early Childhood Education Internship. The course provides in-depth study of early brain development and its implications for early learning, appropriate technology integration, and developmentally appropriate parenting and child guidance trends. Also addressed are collaborative parent/teacher/child relationships and guidance, child directed play, the changing dynamics of family culture and diversity, the causes and effects of stress on young children, and infant nutrition. **Prerequisites:** *Early Childhood Care and Education I, Early Childhood Care and Education II*

## Early Childhood & Education II Pathway

### **Four Course Options for Dual CTAE Pathway Completers:**

#### **20.42600 Early Childhood Education Practicum**

The practicum offers a candidate in the Early Childhood Education career pathway a field experience under the direct supervision of a certified early childhood educator (mentor). This field experience may be used as partial requirements for the candidate to earn the nationally recognized CDA credential. The practicum stresses observing, analyzing, and classifying activities of the mentor and comparing personal traits with those of successful early childhood educators. The candidate intern will develop a portfolio of their skills, plan and teach a lesson or lessons, understand and practice confidentiality as it pertains to the teaching profession, meet the needs of students with special needs, maintain the safety of the students, practice professionalism, and demonstrate ethical behavior. **Prerequisites:** *Early Childhood Care and Education I, Early Childhood and Education II*

## Teaching as a Profession Pathway

### **13.01100 Examining the Teaching Profession**

The Examining the Teaching Profession is the foundational course under the Teaching as a Profession pathway and prepares students for future positions in the field of education. Teaching as a Profession students study, apply, and practice the use of current technologies, effective teaching and learning strategies, the creation of an effective learning environment, the creation of instructional opportunities for diverse learners and students with special needs, and plan instruction based on knowledge of subject matter, students, community, and curriculum performance standards. Pre-requisite for this course is adviser approval. **Prerequisite:** *None*

### **13.01200 Contemporary Issues in Education**

This course engages the candidate in observations, interactions, and analyses of critical and contemporary educational issues. The candidate will investigate issues influencing the social and political contexts of educational settings in Georgia and the United States and actively examines the teaching profession from multiple vantage points both within and outside of the school. Against this backdrop, the candidate will reflect on and interpret the meaning of education and schooling in a diverse culture and examine the moral and ethical responsibilities of teaching in a democracy. (Mastery of standards through project based learning, technical skills practice, and leadership development activities of the career and technical student organization Future Educators of America (FEA) will provide students with a competitive edge for either entry into the education global marketplace and/or the post-secondary institution of their choice to continue their education and training). **Prerequisite:** *Examining the Teaching Profession*

### **13.01300 Teaching as a Profession Practicum**

The practicum offers a candidate in the Teaching as a Profession career pathway a field experience under the direct supervision of a certified teacher (mentor teacher). The practicum stresses observing, analyzing and classifying activities of the mentor teacher and comparing personal traits with those of successful teachers. The candidate intern will develop a portfolio of their skills, plan and teach a lesson or lessons, understand and practice confidentiality as it pertains to the teaching profession, meet the needs of students with special needs, maintain the safety of the students, practice professionalism, and demonstrate ethical behavior.

Mastery of standards through project based learning, technical skills practice, and leadership development activities of the career and technical student organization Future Educators of America (FEA) or Family, Career & Community Leaders of America (FCCLA) will provide students with a competitive edge for either entry into the education global marketplace and/or the post-secondary institution of their choice to continue their education and training. **Prerequisite:** *Contemporary Issues in Education*

## **Finance Career Cluster**

The Finance Career Cluster focuses on money management, including planning, investing, and spending. Students will gain career development skills for the finance world with opportunities that expand beyond basic business skills into financial literacy, banking, investing, insurance, and risk management.



## Advanced Accounting Pathway

### **07.44130 Introduction to Business & Technology**

The course is designed for high school students as a gateway to the career pathways above, and provides an overview of Business and Technology Pathway skills required for today's business environment. Knowledge of business principles, the impact of financial decisions, and technology proficiencies demanded by business combine to establish the elements of this course. Emphasis is placed on developing proficient fundamental computer skills required for all career pathways. Students will learn essentials for working in a business environment, managing a business, and owning a business. The intention of this course is to prepare students to be successful both personally and professionally in an information-based society. Students will not only understand the concepts, but apply their knowledge to situations and defend their actions/decisions/choices through the knowledge and skills acquired in this course.

Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of both the employability skills standards and content standards for this course.

**Prerequisite:** *None*

### **07.41100 Principals of Accounting I**

Where does all the money go? As a person would not go to a foreign country and not learn the language, accounting is the “language of business.” Principles of Accounting I are a skill-level course that is of value to all students pursuing a strong background in business, marketing, and management. Using financial information, students will learn how to make decisions about planning, organizing, and allocating resources using accounting procedures. Performing accounting activities for sole proprietorships and corporations following Generally-Accepted Accounting Procedures are included in the course. Students analyze business transactions and financial statements, perform payroll, and evaluate the effects of transactions on the economic health of a business. Various forms of technologies and internet research will be highlighted to expose students to the resources available when learning the language of business. Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of the employability skills standard for this course. **Prerequisite:** *Introduction to Business and Technology*

### **07.41200 Principals of Accounting II**

Building on the foundation knowledge acquired in Principles of Accounting I, students will extend their skills and knowledge in accounting. By performing accounting activities for various business entities following Generally-Accepted Accounting Procedures, students will apply their skills and knowledge in applicable format. Uncollectible accounts, plant assets, inventory, notes payable and receivable, prepaid and accrued expenses, and unearned and accrued revenues are analyzed and related adjustments are calculated. Students will apply managerial accounting techniques. Various forms of technologies will be used to expose students to the resources and application of accounting principles. Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of the employability skills standard for this course.

**Prerequisites:** *Introduction to Business and Technology, Principals of Accounting I*

## Financial Services - Pathway

### **07.44130 Introduction to Business & Technology**

The course is designed for high school students as a gateway to the career pathways above, and provides an overview of Business and Technology Pathway skills required for today's business environment. Knowledge of business principles, the impact of financial decisions, and technology proficiencies demanded by business combine to establish the elements of this course. Emphasis is placed on developing proficient fundamental computer skills required for all career pathways. Students will learn essentials for working in a business environment, managing a business, and owning a business. The intention of this course is to prepare students to be successful both personally and professionally in an information-based society. Students will not only understand the concepts, but apply their knowledge to situations and defend their actions/decisions/choices through the knowledge and skills acquired in this course.

Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of both the employability skills standards and content standards for this course.

**Prerequisite:** *None*

### **07.42600 Financial Literacy**

How money smart are you? Step into this course specifically designed for high school students to understand the importance of the financial world, including planning and managing money wisely. Areas of study taught through application in personal finance include sources of income, budgeting, banking, consumer credit, credit laws and rights, personal bankruptcy, insurance, spending, taxes, investment strategies, savings accounts, mutual funds and the stock market, buying a vehicle, and living independently. Through project-based learning activities and tasks, students will apply mathematical concepts in realistic scenarios and will actively engage by applying the mathematics necessary to make informed decisions related to personal finance.

Financial Literacy places great emphasis on problem solving, reasoning, representing, connecting and communicating financial data.. Employability skills and various forms of technologies are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of the employability skills standard for this course.

**Prerequisite:** *Introduction to Business and Technology*

### **07.43100 Banking, Insurance, & Investing**

Explore the financial world as students dive into the main areas of financial services, including banking, investing, and insurance. Basics of banking and credit include a brief history of money and banking, negotiable instruments, creation of credit, and the function of banks. Methods for measuring the financial performance of financial institutions are analyzed. Students will be introduced to a variety of investment options and learn to determine the appropriate options for an investment goal. By analyzing financial reports and employing other tools to predict growth rates and return on investment, students will develop strategies to produce financial growth strategies for a business. Through projects, students will determine the risks faced by individuals and businesses and decide on the proper risk management techniques to mitigate those risks.

Investigating both personal and business insurance products and deciding which products are suitable for a specific customer profile will be covered. Ethical issues and case studies involved in the financial services industry will be used to determine how industry regulations are developed. An investigation of careers in the financial services industry will be explored

throughout this course. Concepts of this course will be enhanced by business partnerships with community financial institutions, investment firms, insurance companies, stock market simulations, guest speakers, virtual experiences, technology and field trips. Various forms of technologies and internet research will be highlighted to expose students to the resources in the financial industry. Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of the employability skills standard for this course.

**Prerequisite:** *Introduction to Business and Technology, Financial Literacy*

## **Government and Public Administration Career Cluster**

The Government & Public Administration Career Cluster includes the planning and performing of government management and administrative functions at local, state, and federal levels. Careers are available in national security, Foreign Service, revenue, and regulations.

### Air Force Junior Reserve Officers Training Corps (AFJROTC) Pathway

- 28.01100 Aerospace Science Leadership 100 (PS-AFAH)
- 28.01200 Aerospace Science Leadership 200 (PS-AFSF)
- 28.01300 Aerospace Science: Cultural Studies
- 28.01400 Aerospace Science: Leadership 300
- 28.01500 Aerospace Science: Space Exploration
- 28.01600 Aerospace Science: Leadership 400
- 28.01700 Aerospace Science: Aviation History
- 28.01800 Aerospace Science: Survival
- 28.01900 Aerospace Science: Honors Ground School
- 28.01910 Aerospace Science: Flight Science
- 28.01920 Aerospace Science: Corps Management
- 28.01930 Aerospace Science: Drill Only
- 28.01940 Aerospace Science: Senior Project

## **Healthcare Science Career Cluster**

Healthcare Science provides the challenging academic courses, relevant on-the-job experience, and specialized technical skills you need. In the classroom and laboratory, students build solid math, science, reading, writing, and communication skills. Special emphasis is placed on developing the problem-solving and decision-making skills required in the fast-paced healthcare industry. And, through the Introduction to Healthcare Science course, students learn basic concepts of health, wellness, and preventative care; medical terminology; microbiology; life-support skills; and the ethical and legal responsibilities of today's healthcare provider.

### Therapeutic Services/Patient Care Pathway

#### **25.52100 Introduction to Healthcare Science**

Introduction to Healthcare Science is a foundations course for the Healthcare Science Career Pathways. It is appropriate for students wishing to pursue a career in the Healthcare Industry. The course will enable students to receive initial exposure to Healthcare Science skills and

attitudes applicable to the healthcare industry. The concepts of health, wellness, and preventative care are evaluated, as well as, ethical and legal responsibilities of today's healthcare provider. Fundamental healthcare skills development is initiated including medical terminology, microbiology, and basic life support. Students are required to meet both national and intrastate professional guidelines as designated by applicable regulatory agencies such as the Occupational Health and Safety Administration (OSHA) and Center for Disease Control (CDC). Mastery of these standards through project based learning, technical skills practice, and leadership development activities of the career and technical student organization -Health Occupations Students of America (HOSA) will provide students with a competitive edge for either entry into the healthcare global marketplace and/or the post-secondary institution of their choice to continue their education and training. This course is considered broad-based with high impact and is a prerequisite for all Healthcare Science Education courses. **Prerequisite:** *None*

### **25.44000 Essentials of Healthcare**

Anatomy and Physiology is a vital part of most healthcare post-secondary education programs. The Essentials of Healthcare is a medical-focused anatomy course addressing the physiology of each body system, along with the investigation of common diseases, disorders and emerging diseases. The prevention of disease and the diagnosis and treatment that might be utilized are addressed, along with medical terminology related to each system. This course provides an opportunity to demonstrate technical skills that enforce the goal of helping students make connections between medical procedures and the pathophysiology of diseases and disorders.

**Prerequisite:** *Introduction to Healthcare Science*

### **25.43600 Patient Care Fundamentals**

This course is designed to provide students interested in the careers that involve patient care with entry level skills most commonly associated with the career Nursing Assistant. The students are required to meet both national and intrastate professional guidelines as designated by applicable regulatory agencies such as the Occupational Health and Safety Administration (OSHA), Center for Disease Control (CDC), and the Department of Health and Human Services (HHS) with a specific focus on the Omnibus Budget Reconciliation Act of 1987 (OBRA) and the Health Insurance Portability and Accountability Act of 1996 (HIPAA). Upon completion of this course and its prerequisites, this course meets the Certified Nurse Assistant curriculum content as specified by the Georgia Medical Care Foundation. Students meeting all academic, attendance, and age requirements may sit for the Georgia Registry's Examination. Successful completion of the Georgia Registry Examination allows students to seek employment in the state of Georgia as a Certified Nurse Assistant. (Programs and instructors must affiliate with and be approved by the GA Medical Care Foundation [www.gmcf.org](http://www.gmcf.org) in order for students to be able to sit for the GA Registry Examination. Requirements for equipment, clinical hours, etc. can be found through the GA Medical Care Foundation). Any Healthcare Science course that includes a clinical component (excluding a shadowing experience field trip) must adhere to identified guidelines under (WBL) work-based learning (available at [ctae.gadoe.org](http://ctae.gadoe.org) under WBL manual. Training for the Healthcare Science teacher on these guidelines will be provided. **Prerequisites:** *Introduction to Healthcare Science, Essentials of Healthcare*

## Health Informatics/Health Information Management/Medical Office Pathway

### **25.52100 Introduction to Healthcare Science**

Introduction to Healthcare Science is a foundations course for the Healthcare Science Career Pathways. It is appropriate for students wishing to pursue a career in the Healthcare Industry. The course will enable students to receive initial exposure to Healthcare Science skills and

attitudes applicable to the healthcare industry. The concepts of health, wellness, and preventative care are evaluated, as well as, ethical and legal responsibilities of today's healthcare provider. Fundamental healthcare skills development is initiated including medical terminology, microbiology, and basic life support. Students are required to meet both national and intrastate professional guidelines as designated by applicable regulatory agencies such as the Occupational Health and Safety Administration (OSHA) and Center for Disease Control (CDC). Mastery of these standards through project based learning, technical skills practice, and leadership development activities of the career and technical student organization -Health Occupations Students of America (HOSA) will provide students with a competitive edge for either entry into the healthcare global marketplace and/or the post-secondary institution of their choice to continue their education and training. This course is considered broad-based with high impact and is a prerequisite for all Healthcare Science Education courses. **Prerequisite:** *None*

#### **25.44000 Essentials of Healthcare**

Anatomy and Physiology is a vital part of most healthcare post-secondary education programs. The Essentials of Healthcare is a medical-focused anatomy course addressing the physiology of each body system, along with the investigation of common diseases, disorders and emerging diseases. The prevention of disease and the diagnosis and treatment that might be utilized are addressed, along with medical terminology related to each system. This course provides an opportunity to demonstrate technical skills that enforce the goal of helping students make connections between medical procedures and the pathophysiology of diseases and disorders.

**Prerequisite:** *Introduction to Healthcare Science*

#### **25.49700 Health Information Management/Medical Office**

This course will orient the student to health information management and working in a medical office. Topics include introducing students to skills and knowledge utilized in a medical office, the structure of healthcare in the United States, healthcare providers, and the structure and function of professional organizations. The course provides students with medical office computer and software skills that include hardware and software components of computers for medical record applications; database software and information management; specialized information management systems in healthcare; methods of controlling confidentiality and patient rights; and accuracy and security of health information data in computer systems.

**Prerequisites:** *Introduction to Healthcare Science, Essentials of Healthcare*

### Therapeutic Services/Pharmacy Pathway

#### **25.52100 Introduction to Healthcare Science**

Introduction to Healthcare Science is a foundations course for the Healthcare Science Career Pathways. It is appropriate for students wishing to pursue a career in the Healthcare Industry. The course will enable students to receive initial exposure to Healthcare Science skills and attitudes applicable to the healthcare industry. The concepts of health, wellness, and preventative care are evaluated, as well as, ethical and legal responsibilities of today's healthcare provider. Fundamental healthcare skills development is initiated including medical terminology, microbiology, and basic life support. Students are required to meet both national and intrastate professional guidelines as designated by applicable regulatory agencies such as the Occupational Health and Safety Administration (OSHA) and Center for Disease Control (CDC). Mastery of these standards through project based learning, technical skills practice, and leadership development activities of the career and technical student organization -Health Occupations Students of America (HOSA) will provide students with a competitive edge for either entry into

the healthcare global marketplace and/or the post-secondary institution of their choice to continue their education and training. This course is considered broad-based with high impact and is a prerequisite for all Healthcare Science Education courses. **Prerequisite:** *None*

### **25.44000 Essentials of Healthcare**

Anatomy and Physiology is a vital part of most healthcare post-secondary education programs. The Essentials of Healthcare is a medical-focused anatomy course addressing the physiology of each body system, along with the investigation of common diseases, disorders and emerging diseases. The prevention of disease and the diagnosis and treatment that might be utilized are addressed, along with medical terminology related to each system. This course provides an opportunity to demonstrate technical skills that enforce the goal of helping students make connections between medical procedures and the pathophysiology of diseases and disorders.

**Prerequisite:** *Introduction to Healthcare Science*

### **25.45300 Pharmacy Operations and Fundamentals**

This course is an introduction to pharmacy technology professions, employment opportunities, and basic pre-pharmacy technician skills which may be utilized in either clinical or community settings such as retail, home health care, and ambulatory care pharmacies. Intensive pharmacy specific safety and security training are provided including potential drug addiction and abuse issues relative to pharmaceutical care such as robberies and identification of forgeries. Students are required to adhere to Federal Regulatory Agencies and Acts guidelines including Food, Drug, and Cosmetic Act, Controlled Substances Act (CSA), Joint Commission on Accreditation of Healthcare Organizations (JCAHO), Drug Enforcement Administration (DEA) in addition to the pharmacy regulatory agencies within the state of Georgia. This course is recommended for students planning on pursuing careers in the healthcare industry, which may require basic pharmaceutical knowledge, common healthcare mathematical applications, and/or technical proficiency in the administration medications. An overview of prescription and nonprescription medications, classifications, actions, and interactions is provided while critical thinking skills are developed throughout the course from initial calculations/conversions of drug dosage forms to the simulation of regulating IV infusion rates. Technical skills in the preparation and administration of medications are practiced in simulated clinical labs. Students must demonstrate the utilization of all professional and safety guidelines as designated by applicable Federal and State regulatory agencies and acts such as the Drug Enforcement Administration (DEA) and the Controlled Substance Act while performing simulations. The impact of pharmaceuticals on the provision of healthcare and the importance of client education are integrated throughout the course. Clinical experience is recommended to help prepare a student to potentially take the Pharmacy Technician exam when they are eligible. An internship course under the supervision of a Registered Pharmacist may also be utilized for this experience. After the completion of this course, students may be eligible to take the Pharmacy Technician Certification Exam (PTCE) through the Pharmacy Technician Certification Board (PTCB). **Prerequisites:** *Introduction to Healthcare Science, Essentials of Healthcare*

## Allied Health & Medicine

### **25.52100 Introduction to Healthcare Science**

Introduction to Healthcare Science is a foundations course for the Healthcare Science Career Pathways. It is appropriate for students wishing to pursue a career in the Healthcare Industry. The course will enable students to receive initial exposure to Healthcare Science skills and

attitudes applicable to the healthcare industry. The concepts of health, wellness, and preventative care are evaluated, as well as, ethical and legal responsibilities of today's healthcare provider. Fundamental healthcare skills development is initiated including medical terminology, microbiology, and basic life support. Students are required to meet both national and intrastate professional guidelines as designated by applicable regulatory agencies such as the Occupational Health and Safety Administration (OSHA) and Center for Disease Control (CDC). Mastery of these standards through project based learning, technical skills practice, and leadership development activities of the career and technical student organization -Health Occupations Students of America (HOSA) will provide students with a competitive edge for either entry into the healthcare global marketplace and/or the post-secondary institution of their choice to continue their education and training. This course is considered broad-based with high impact and is a prerequisite for all Healthcare Science Education courses. **Prerequisite:** *None*

### **25.44000 Essentials of Healthcare**

Anatomy and Physiology is a vital part of most healthcare post-secondary education programs. The Essentials of Healthcare is a medical-focused anatomy course addressing the physiology of each body system, along with the investigation of common diseases, disorders and emerging diseases. The prevention of disease and the diagnosis and treatment that might be utilized are addressed, along with medical terminology related to each system. This course provides an opportunity to demonstrate technical skills that enforce the goal of helping students make connections between medical procedures and the pathophysiology of diseases and disorders.

**Prerequisite:** *Introduction to Healthcare Science*

### **25.43700 Allied Health and Medicine**

This course is designed to offer students (preferably upper classmen - juniors or seniors) the opportunity to become effective and efficient multi-skilled healthcare providers as they develop a working knowledge of various allied health opportunities. Students focusing on a career path in the healthcare field may apply classroom/lab knowledge and skills in the clinical setting as they participate in direct or simulated client care. The curriculum allows instructors to provide options for classroom/student growth opportunities in area(s) of interest to the student. These options may be determined by community need, available resources, and/or student interest, etc. This course was developed according to a basic 50-minute class time frame, but may be adjusted according to local system schedules. Instructors may select which classroom content standards 1-14 best meet his/her individual classroom needs in addition to the required clinical/capstone project to equal total class time available for the course. **Prerequisites:** *Introduction to Healthcare Science, Essentials of Healthcare*

## Diagnostic/ Non-Invasive Diagnostic Technology in Healthcare Pathway

### **Four Course Options for Dual CTAE Pathway Completers:**

#### **25.44500 - Non-Invasive diagnostic Technology**

This course is designed to offer high school students (juniors and seniors) the opportunity to explore and apply non-invasive diagnostic procedures in the field of cardiology, radiology and pulmonology. This course should pique the interest in students to seek certifications and further their education using the knowledge and practical application of non-invasive techniques in the area of cardiology, radiology and pulmonology.

The ultimate goal of this course is to prepare students to move into post-secondary education and training and/or to possibly take the EKG assessment potentially resulting in an industry credential after completion of any required clinical experience. Individual states may have regulations that could impact certification what an EKG technician can do in that state. **Prerequisites:** *Introduction to Healthcare Science, Essentials of Healthcare*

### Diagnostics Phlebotomy Pathway

#### **Four Course Options for Dual CTAE Pathway Completers:**

##### **25.57400 - Diagnostics Phlebotomy**

This course is designed to help students become prepared for the phlebotomy technician certification exam, upon completion of all required components. Topics covered in this course include employability skills, careers, terminology and equipment, safety and compliance, quality assurance, site-specific anatomy, patient preparation for venipuncture, performing of venipuncture, and special processing and transport. During this course, simulated venipuncture may be performed. However, for national certification, live sticks are required. If school systems choose not to allow live sticks during this course, the certifying agencies may allow a provisional certification with the live stick requirement being completed after high school graduation.

**Prerequisites:** *Introduction to Healthcare Science, Essentials of Healthcare*

### Therapeutic Services/ Emergency Medical Responder Pathway

#### **Four Course Options for Dual CTAE Pathway Completers:**

##### **25.45000 - Emergency Medical Responder**

The Emergency Medical Responder (EMR) course prepares the student to provide initial stabilizing care to the sick or injured prior to the arrival of Emergency Medical Services Professionals (EMS), and to assist EMS personnel in transporting patients for definitive care at an appropriate hospital/facility. Major areas of instruction include Introductory Medical Terminology and Anatomy & Physiology; Responder Safety; Incident Command; Blood-borne Pathogen Training; Basic Physical Assessment; and Treatment of Trauma and Medical Emergencies; Cardiopulmonary Resuscitation and the use of Automatic External Defibrillators (AEDs). The course is a blend of lecture, hands on lab/learning, and practical scenario-based learning/testing.

The course will include Healthcare Provider CPR/AED Certification from a Nationally-Recognized Body (American Heart Association or Red Cross, etc.). If this course is also approved by the Georgia State Office of Emergency Medical Services and Trauma (SOEMST), successful completion will allow the student to be eligible to take the National Registry of Emergency Medical Technicians (NREMT) Emergency Medical Responder (EMR) certification. Topics include: Preparatory; Anatomy and Physiology; Medical Terminology; Pathophysiology; Life Span Development; Public Health; Pharmacology; Airway; Management; Respiration and Artificial Ventilation; Assessment; Medicine; Shock and Resuscitation; Trauma; Special Patient Populations; EMS Operations; and Integration of Patient Assessment and Management.



**Link for teacher qualifications:**

<http://ems.ga.gov/programs/ems/emsdocs/FORM%20C-11-A%20EMS%20Instructor%20Application%201-2013.pdf>

**Link for national standards NHTSA:**

<http://www.ems.gov/EducationStandards.htm>

**Link for the required equipment:**

<http://dph.georgia.gov/sites/dph.georgia.gov/files/R-T-11-EMR-C%20Minimum%20Equipment%20Required%20for%20an%20EMR%20Initial%20Education%20Program.pdf>

**Link to become a training center:** <http://ems.ga.gov/programs/ems/emsdocs/PRO-T-06%20Request%20for%20EMS%20Program%20Site%20Code%201-10-07-1.pdf>

**Prerequisites:** *Introduction to Healthcare Science, Essentials of Healthcare*

**Prerequisites:** Law, Public Safety, Corrections and Security Cluster are Introduction to Law, Public Safety, Corrections & Security and Fire and Emergency Services

## **Hospitality and Tourism Career Cluster**

The Culinary Arts curriculum prepares students for positions as chefs, cooks, and food preparation workers who prepare, season, and cook a wide range of foods—from soups, snacks, and salads to entrees, side dishes, and desserts. They work in a variety of restaurants and other food services establishments. Students work with the latest tools and technologies in the curriculum. Occupational levels of education, salaries and demand vary across the concentration. Educational levels, salaries, and demand vary within the concentration.

### Culinary Arts Pathway

#### **20.53100 Introduction to Culinary Arts**

Introduction to Culinary Arts is a course designed to introduce students to fundamental food preparation terms, concepts, and methods in Culinary Arts where laboratory practice will parallel class work. Fundamental techniques, skills, and terminology are covered and mastered with an emphasis on basic kitchen and dining room safety, sanitation, equipment maintenance and operation procedures. Course also provides an overview of the professionalism in the culinary industry and career opportunities leading into a career pathway to Culinary Arts. **Prerequisite:** *None*

#### **20.53210 Culinary Arts I**

Culinary Arts I is designed to create a complete foundation and understanding of Culinary Arts leading to post-secondary education or a foodservice career. Building from techniques and skills learned in Foundation of Culinary Arts, this fundamentals course begins to involve in-depth knowledge and hands on skill mastery of Culinary Arts. **Prerequisite:** *Introduction to Culinary Arts*

#### **20.53310 Culinary Arts II**

Culinary Arts II is an advanced and rigorous in-depth course designed for the student who has continued the Culinary Arts Pathway and wishes to continue their education at the post-secondary level or enter the foodservice industry as a proficient and well-rounded individual. Strong importance is given to refining hands on production of the classic fundamentals in the commercial kitchen. **Prerequisites:** *Introduction to Culinary Arts, Culinary Arts I*

## Sports and Entertainment Marketing Pathway

### **08.47400 Marketing Principles**

Marketing Principles is the foundational course for the Marketing and Management, Fashion Merchandising and Buying, and Marketing Communications and Promotion Pathways. Marketing Principles addresses all the ways in which marketing satisfies consumer and business needs and wants for products and services. Students develop a basic understanding of Employability, Foundational and Business Administration skills, Economics, Entrepreneurship, Financial Analysis, Human Resources Management, Information Management, Marketing, Operations, Professional Development, Strategic Management, and Global Marketing strategies. Instructional projects with real businesses, work-based learning activities including School-Based Enterprises, and DECA application experiences should be incorporated in this course. **Prerequisite:** *None*

### **08.47800 Introduction to Sports and Entertainment Marketing**

This course introduces the student to the major segments of the Sports and Entertainment Industry and the social and economic impact the industry has on the local, state, national, and global economies. The products and services offered to consumers and the impact of marketing on these products and services are examined. Units include: Business Fundamentals, Product Mix, Product Knowledge, Product/Service Management, Business Regulations, Interpersonal Skill, Selling, Marketing Information Management, Economics, Distribution, Pricing, Advertising, Publicity/Public Relations, Sales Promotion, Business Risks, and Organization.

In order to increase the number of application experiences, students should participate in (1) Work-Based Learning (WBL) activities in the classroom and perhaps in a formal WBL Program; (2) DECA competitive events that are directly aligned with course standards and (3) a School-Based Enterprise. **Prerequisite:** *Marketing Principles*

### **08.48500 Advanced Sports and Entertainment Marketing**

This course provides students opportunities to develop managerial and analytical skills and deepen their knowledge in sports/entertainment marketing. Topical units include: Marketing-Information Management, Selling, Publicity/Public Relations, Sales Promotion, Management of Promotion, Product Mix, Pricing, Positioning, and Marketing Planning. In order to increase the number of application experiences, students should participate in (1) Work-Based Learning (WBL) activities in the classroom and perhaps in a formal WBL Program; (2) DECA competitive events that are directly aligned with course standards and (3) a School-Based Enterprise

**Prerequisites:** *Marketing Principles, Introduction to Sports and Entertainment Marketing*

## **Human Services Career Cluster**

The Human Services Career Cluster prepares individuals for employment activities related to family and human needs such as nutrition and food science, counseling and mental health services, family and community services, personal care, and consumer services.

## Food and Nutrition Pathway

### **20.41610 Foods, Nutrition, and Wellness**

Food, Nutrition and Wellness is the foundational course in the nutrition and food science pathway. The focus of the course is centered on healthy food and lifestyle choices. Students will investigate the interrelationship of food, nutrition and wellness to promote good health. Mastery of standards through project-based learning, technical skills practice, and leadership development activities of Family, Career and Community Leaders of America (FCCLA) will provide students with a competitive edge for either entry into the education global marketplace and/or the post-secondary institution of their choice to continue their education and training. Pre-requisite for this course is advisor approval. **Prerequisite:** *None*

### **20.41400 Food for Life**

Food for Life is an advanced course in food and nutrition that addresses the variation in nutritional needs at specific stages of the human life cycle: lactation, infancy, childhood, adolescence, and adulthood including elderly. The most common nutritional concerns, their relationship to food choices and health status and strategies to enhance well-being at each stage of the lifecycle are emphasized. This course provides knowledge for real life and offers students a pathway into dietetics, consumer foods, and nutrition science careers with additional education at the post-secondary level. **Prerequisite:** *Foods, Nutrition, and Wellness*

### **20.41500 Food Science**

Food science integrates many branches of science and relies on the application of the rapid advances in technology to expand and improve the food supply. Students will evaluate the effects of processing, preparation, and storage on the quality, safety, wholesomeness, and nutritive value of foods. Building on information learned in Nutrition and Wellness and Chemistry, this course illustrates scientific principles in an applied context, exposing students to the wonders of the scientific world. Related careers will be explored. **Prerequisites:** *Foods, Nutrition, and Wellness, Food for Life*

## Cosmetology Pathway

### **12.54400 Introduction to Personal Care**

This course introduces both fundamental theory and practices of the personal care professions including nail technicians, estheticians, barbers, and cosmetologists. Emphasis will be placed on professional practices and safety. Areas addressed in this course include: state rules and regulations, professional image, bacteriology, decontamination and infection control, chemistry fundamentals, safety, Hazardous Duty Standards Act compliance, and anatomy and physiology. Students will experience basic hands on skills in each area to help them determine the pathway they are most interested in pursuing. By completing courses in the personal care services pathways, students can potentially earn credit toward the hours required by the Georgia State Board of Barbering and/or Cosmetology or hours toward their license as an esthetician or nail technician. **Prerequisite:** *None*

### **12.41000 Cosmetology Services II**

After exploring the different areas of Personal Care Services in the introduction course, students may choose to pursue further training in cosmetology services. This course as well as additional advanced cosmetology courses is aligned with the Georgia State Board of Cosmetology requirements and licensure, and with the Technical College System of Georgia. This course is designed to enhance the understanding of anatomy of the skin and hair relating to the

Cosmetology Industry. Students will master shampooing, permanent waving, haircutting, basic skin care, and make-up application while maintaining safety and sanitation in the workplace set forth by OSHA standards. **Prerequisite:** *Introduction to Personal Care*

### **12.41100 Cosmetology Services III**

This course will cover haircutting, hair color, and relaxers. Both theory and practical work will be implemented for students to have basic entry level skills in the field of cosmetology. Safety and infection control will be applied throughout this course. Professional work ethics, communication skills, critical thinking skills, soft skills and professional image will be utilized during this course. This course aligns to the regulations and requirements of the State Board of Cosmetology. **Prerequisites:** *Introduction to Personal Care, Cosmetology Services II*

### Barbering Pathway

### **12.54400 Introduction to Personal Care**

This course introduces both fundamental theory and practices of the personal care professions including nail technicians, estheticians, barbers, and cosmetologists. Emphasis will be placed on professional practices and safety. Areas addressed in this course include: state rules and regulations, professional image, bacteriology, decontamination and infection control, chemistry fundamentals, safety, Hazardous Duty Standards Act compliance, and anatomy and physiology. Students will experience basic hands on skills in each area to help them determine the pathway they are most interested in pursuing. By completing courses in the personal care services pathways, students can potentially earn credit toward the hours required by the Georgia State Board of Barbering and/or Cosmetology or hours toward their license as an esthetician or nail technician. **Prerequisite:** *None*

### **12.42000 Barbering II**

This course is designed as an introductory level course for the Barbering Pathway and presents intermediate skills and knowledge related to barbering and scientific and mathematical corollaries. Clinical activities are included in this phase of study. Clinicals included in this course involve: individualized and precise designing, cutting, and shaping of the hair. Students will earn credit hours toward the completion of the 1500 credit hours required by Georgia State Board of Barbers. *According to the State Board of Barbering, each student must obtain 280 total hours of theory training before the student is allowed to render clinical services.* This course provides more in-depth competencies for the co-curricular student organization SkillsUSA and presents integral components that should be incorporated throughout instructional strategies. In addition, this course offers the possibility of meeting articulation alignment with the technical college standards. **Prerequisite:** *Introduction to Personal Care*

### **12.42100 Barbering III**

This course will provide higher level skills that the students can transfer to post-secondary barber schools. Students are required to meet both national and intrastate professional guidelines as designated by applicable regulatory agencies such as the Occupational Health and Safety Administration (OSHA) and the Georgia Board of Barbering. The knowledge and skills gained through this course will assist students in the analysis and performance of professional services such as haircutting and styling, mustache and beard design, facials, shaves and scalp treatments. In addition, this course offers the possibility of meeting articulation alignment with the technical college standards. This course is considered broad-based with high impact in the personal care service industry. Students will achieve technical content skills necessary to pursue a full range of careers in this program. **Prerequisite:** *Barbering II*

## Information Technology Career Cluster

The rapidly changing digital world of the Information Technology Career Cluster engages students in hands-on learning to prepare for careers that create, use, modify, and engage technology skills. Graphics, multimedia animation, web design, game and application development, networking, and computer repair are all possibilities.

### Web and Digital Design Pathway

#### **11.41500 Introduction to Digital Technology**

Introduction to Digital Technology is the foundational course for Web & Digital Communications, Programming, Advanced Programming, Information Support & Services, and Network Systems pathways. This course is designed for high school students to understand, communicate, and adapt to a digital world as it impacts their personal life, society, and the business world. Exposure to foundational knowledge in hardware, software, programming, web design, IT support, and networks are all taught in a computer lab with hands-on activities and project focused tasks. Students will not only understand the concepts, but apply their knowledge to situations and defend their actions/decisions/choices through the knowledge and skills acquired in this course. Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of both the employability skills standards and content standards for this course. Various forms of technologies will be highlighted to expose students to the emerging technologies impacting the digital world. Professional communication skills and practices, problem-solving, ethical and legal issues, and the impact of effective presentation skills are taught in this course as a foundational knowledge to prepare students to be college and career ready. The knowledge and skills taught in this course build upon each other to form a comprehensive introduction to digital world. **Prerequisite:** *None*

#### **11.45100 Digital Design**

Using web design as the platform for product design and presentation, students will create and learn digital media applications using elements of text, graphics, animation, sound, video and digital imaging for various format. The digital media and interactive media projects developed and published showcase the student skills and ability. Emphasis will be placed on effective use of tools for interactive multimedia production including storyboarding, visual development, project management, digital citizenship, and web processes. Students will create and design web sites that incorporate digital media elements to enhance content of web site. Various forms of technologies will be used to expose students to resources, software, and applications of media. Professional communication skills and practices, problem-solving, ethical and legal issues, and the impact of effective presentation skills are enhanced in this course to prepare students to be college and career ready. Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of the employability skills standard for this course.

**Prerequisite:** *Introduction to Digital Technology*

#### **11.45200 Web Design**

Can you think of any company that does not have a web presence? Taking this course will equip students with the ability to plan, design, and create a web site. Students will move past learning how to write code and progress to designing a professional looking web site using graphical authoring tools that contains multimedia elements. Working individually and in teams, students

will learn to work with web page layout and graphical elements to create a professional looking web site.

Various forms of technologies will be used to expose students to resources, software, and applications of web design. Professional communication skills and practices, problem-solving, ethical and legal issues, and the impact of effective presentation skills are enhanced in this course to prepare students to be college and career ready. Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of the employability skills standard for this course. **Prerequisites:** *Introduction to Digital Design, Digital Design*

### Programming Pathway

#### **11.41500 Introduction to Digital Technology**

Introduction to Digital Technology is the foundational course for Web & Digital Communications, Programming, Advanced Programming, Information Support & Services, and Network Systems pathways. This course is designed for high school students to understand, communicate, and adapt to a digital world as it impacts their personal life, society, and the business world. Exposure to foundational knowledge in hardware, software, programming, web design, IT support, and networks are all taught in a computer lab with hands-on activities and project focused tasks. Students will not only understand the concepts, but apply their knowledge to situations and defend their actions/decisions/choices through the knowledge and skills acquired in this course. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of both the employability skills standards and content standards for this course. Various forms of technologies will be highlighted to expose students to the emerging technologies impacting the digital world. Professional communication skills and practices, problem-solving, ethical and legal issues, and the impact of effective presentation skills are taught in this course as a foundational knowledge to prepare students to be college and career ready. **Prerequisite:** *None*

#### **11.47100 Computer Science Principles**

How can computing change the world? Computer Science (CS) Principles is an intellectually rich and engaging course that is focused on building a solid understanding and foundation in computer science. This course emphasizes the content, practices, thinking and skills central to the discipline of computer science. Through both its content and pedagogy, this course aims to appeal to a broad audience. The focus of this course will fall into these computational thinking practices: connecting computing, developing computational artifacts, abstracting, analyzing problems and artifacts, communicating, and collaborating. Various forms of technologies will be used to expose students to resources and application of computer science. Professional communication skills and practices, problem-solving, ethical and legal issues, and the impact of effective presentation skills are enhanced in this course to prepare students to be college and career ready. Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. **Prerequisite:** *Introduction to Digital Technology*

#### **11.47200 Programming, Apps, Games, and Society**

Are you ready to design and develop? The course is designed for high school students to strategize, design, and develop games and mobile and desktop applications that can be produced in the real world. Students will learn about life-cycles of project development and use models to develop applications. Attention will be placed on how user interfaces affect the usability and

effectiveness of a game or an application. Programming constructs will be employed which will allow students' applications to interact with "real world," stimuli. The course exposes students to privacy, legality, and security considerations with regards to the software industry.

Various forms of technologies will be used to expose students to resources, software, and applications of programming. Professional communication skills and practices, problem-solving, ethical and legal issues, and the impact of effective presentation skills are enhanced in this course to prepare students to be college and career ready. Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of the employability skills standard for this course. **Prerequisites:** *Introduction to Digital Technology, Computer Science Principles*

### Computer Science Pathway

#### **11.41500 Introduction to Digital Technology**

Introduction to Digital Technology is the foundational course for Web & Digital Communications, Programming, Advanced Programming, Information Support & Services, and Network Systems pathways. This course is designed for high school students to understand, communicate, and adapt to a digital world as it impacts their personal life, society, and the business world. Exposure to foundational knowledge in hardware, software, programming, web design, IT support, and networks are all taught in a computer lab with hands-on activities and project focused tasks. Students will not only understand the concepts, but apply their knowledge to situations and defend their actions/decisions/choices through the knowledge and skills acquired in this course. Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of both the employability skills standards and content standards for this course. Various forms of technologies will be highlighted to expose students to the emerging technologies impacting the digital world. Professional communication skills and practices, problem-solving, ethical and legal issues, and the impact of effective presentation skills are taught in this course as a foundational knowledge to prepare students to be college and career ready. The knowledge and skills taught in this course build upon each other to form a comprehensive introduction to digital world. **Prerequisite:** *None*

#### **11.47100 Computer Science Principles**

How can computing change the world? What is computer science? Engage your creativity, demonstrate and build your problem solving ability all while connecting the relevance of computer science to the society! Computer Science (CS) Principles is an intellectually rich and engaging course that is focused on building a solid understanding and foundation in computer science. This course emphasizes the content, practices, thinking and skills central to the discipline of computer science. Through both its content and pedagogy, this course aims to appeal to a broad audience. The focus of this course will fall into these computational thinking practices: connecting computing, developing computational artifacts, abstracting, analyzing problems and artifacts, communicating, and collaborating. Various forms of technologies will be used to expose students to resources and application of computer science. Professional communication skills and practices, problem-solving, ethical and legal issues, and the impact of effective presentation skills are enhanced in this course to prepare students to be college and

career ready. Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. **Prerequisite:** *Introduction to Digital Technology*

**AP Computer Science** (*Contact College Board for standards*)

**Prerequisites:** *Introduction to Digital Technology, Computer Science Principles*

### Game Design Pathway

**Four Course Options for Dual CTAE Pathway Completers:**

**11.42900 Game Design: Animation and Simulation**

Students completing this course will gain an understanding of the fundamental principles used at every stage of the game creation process. First, game genres and modes of play are explored in terms of the psychology of incentives, motivation to play, and social networking. Next, virtual characters and non-player characters are reviewed from concept drawing to 2D and 3D art, rigging, and animation. Next, level design, storytelling, and animation are added to develop a virtual world around the characters. These same techniques are at work in training simulator systems, virtual shopping experiences, augmented reality, and a number of other important career options. Schools offering this program can provide a foundation of traditional drawing, illustration, and art courses to make way for the 2D and 3D animation, storytelling, character development, audio, and game technology.

Students taking this program are strongly encouraged to add an internship to their curriculum which will give them real world experience, understanding how the computer game industry works. Game Design: Animation and Simulation is the third course in the Game Design pathway. Students enrolled in this course should have successfully completed Introduction to Digital Technology and Computer Science Principles. After mastery of the standards in this course, students should be prepared to earn an industry-recognized credential in this career area.

**Prerequisites:** *Introduction to Digital Technology, Computer Science Principles*

### Internet of Things Pathway

**Four Course Options for Dual CTAE Pathway Completers:**

**11.42700 Embedded Computing**

The demand for programming (software development) has gone well beyond desktop computers and the web, into a ubiquitous world of personal devices, smart cars, intelligent factories, and even more. These systems interact with us directly, as well as with each other. This course will focus on the interaction of programming and devices, using data from various sensors and sources in order to make decisions, take actions, and more. A common industry term to describe this work is Internet of Things. Students will show first-hand how programming and machines interact to accomplish common and essential tasks throughout our society.

Embedded Computing is the third course in the Internet of Things pathway. Students enrolled in this course should have successfully completed Introduction to Digital Technology and



Computer Science Principles. After mastery of the standards in this course, students should be prepared to earn an industry-recognized credential in this career area. **Prerequisites:** *Introduction to Digital Technology, Computer Science Principles*

### Programing Pathway

#### **Four Course Options for Dual CTAE Pathway Completers:**

##### **11.47200 Programming, Apps, Games, and Society**

Are you ready to design and develop? The course is designed for high school students to strategize, design, and develop games and mobile and desktop applications that can be produced in the real world. Students will learn about life-cycles of project development and use models to develop applications. Attention will be placed on how user interfaces affect the usability and effectiveness of a game or an application. Programming constructs will be employed which will allow students' applications to interact with "real world," stimuli. The course exposes students to privacy, legality, and security considerations with regards to the software industry.

Various forms of technologies will be used to expose students to resources, software, and applications of programming. Professional communication skills and practices, problem-solving, ethical and legal issues, and the impact of effective presentation skills are enhanced in this course to prepare students to be college and career ready. Employability skills are integrated into activities, tasks, and projects throughout the course standards to demonstrate the skills required by business and industry. Competencies in the co-curricular student organization, Future Business Leaders of America (FBLA), are integral components of the employability skills standard for this course. **Prerequisites:** *Introduction to Digital Technology, Computer Science Principles*

## **Law, Public Safety, Corrections, and Security Career Cluster**

The Law, Public Safety, Corrections, & Security Career Cluster prepares individuals for employment relating to emergency and fire services, legal services, protective services, and homeland security.

### Law Enforcement Services/Forensic Science Pathway

#### **43.45000 Introduction to Law, Public Safety, Corrections and Security**

Introduction to Law, Public Safety, Corrections, and Security (LPSCS) is the pre-requisite for all other courses within the Career Cluster. This course provides students with career focused educational opportunities in various LPSCS fields. It examines the basic concepts of law related to citizens' rights and the responsibilities, and students will receive instruction in critical skill areas including: communicating with diverse groups, conflict resolution, ethics, CERT (Citizens Emergency Response Training, or similar program), basic firefighting, report writing, terrorism, civil and criminal law. Career planning and employability skills will be emphasized.

**Prerequisite:** *None*

#### **43.45100 Criminal Justice Essentials**

Criminal Justice Essentials provides an overview of the criminal justice system. Starting with historical perspectives of the origin of the system, the course reviews the overall structure. Students will become immersed in criminal and constitutional law and will review basic law enforcement skills. The course ends with a mock trial to provide participants with a first-hand experience of the criminal justice system. The course will also provide in-depth competencies and components for the co-curricular SkillsUSA student organization that should be incorporated throughout instructional strategies of the course. Participation in additional student organizations that align with Law, Public Safety, Corrections and Security pathways (i.e. mock trial) is encouraged to enhance standards addressed in the curriculum. The prerequisite for this course is Introduction to Law, Public Safety, Corrections and Security. **Prerequisite:** *Introduction to Law, Public Safety, Corrections and Security*

#### **43.45200 Forensic Science and Criminal Investigations**

This course provides an analysis of the various careers in Security and Protective Services, including the history, procedures and objectives. Topics include: history and evolution of private security and private security services; regulatory and organizational guidelines; the impact of federal, state and local laws on security and protective services; public relations; strategies; supervision and management; intelligence analysis; and staffing. Prerequisites for this course include Introduction to Law, Public Safety, Corrections and Security, and Criminal Justice Essential. **Prerequisites:** *Introduction to Law, Public Safety, Corrections and Security, Criminal Justice Essentials*

### Firefighting and Emergency Services/Firefighting Pathway

#### **43.45000 Introduction to Law, Public Safety, Corrections and Security**

Introduction to Law, Public Safety, Corrections, and Security (LPSCS) is the pre-requisite for all other courses within the Career Cluster. This course provides students with career focused educational opportunities in various LPSCS fields. It examines the basic concepts of law related to citizens' rights and the responsibilities, and students will receive instruction in critical skill areas including: communicating with diverse groups, conflict resolution, ethics, CERT (Citizens Emergency Response Training, or similar program), basic firefighting, report writing, terrorism, civil and criminal law. Career planning and employability skills will be emphasized.

**Prerequisite:** *None*

#### **43.46000 Essentials of Fire and Emergency Services**

This course addresses the essential components needed for fire and emergency services. Students will be prepared for their third-course options that include the following: firefighting, emergency medical responder, and public safety communications. Students will explore career options, interagency communications, medical services, and basic firefighting standards. The prerequisites for this course are Introduction to Law, Public Safety and Corrections and Security.

**Prerequisite:** *Introduction to Law, Public Safety, Corrections and Security*

#### **43.44000 Applications of Firefighting**

This course, along with the prerequisite courses, is designed to meet the requirements of NFPA® 1001, Fire Fighter I. After completing this course, the student will be able to sit for the exam to certify as a Firefighter I per National Fire Protection Association (NFPA®) 1001, Standard for Fire Fighter Professional Qualifications. This course is also based on the Basic Firefighting Training Program from the GA Public Safety Training Center (GPSTC). GPSTC has teacher-trainer resources (including skill sheets for those that are required) and recommended text. The

prerequisites for this course are Introduction to Law, Public Safety Corrections and Security, and Essentials of Fire and Emergency Services.

The Applications of Firefighting course requires strenuous physical activity. Students, parents, and school officials are encouraged to review and discuss the physical requirements prior to the student's enrollment in the course. Schools may choose to recommend that a student obtain a sports physical prior to the start of course activities. Components of this course require a student to be eighteen years of age for participation and completion of that component (i.e. live fire).

**Prerequisites:** *Introduction to Law, Public Safety, Corrections and Security, Essentials of Fire and Emergency Services*

## **Marketing Career Cluster**

Marketing is the process of anticipating, managing, and satisfying consumers' demand for products, services, and ideas. The Marketing Career Cluster generates the strategy that underlies advertising and promotional techniques, business communication, and business development. Students in this concentration develop knowledge and skills in the foundational areas of marketing (economics, human relations, and business basics) and the functional areas of marketing (product and service planning, marketing-information management, purchasing and pricing, selling and promotion, risk management, financing, and distribution/logistics).

### Marketing Pathway

#### **08.47400 Marketing Principles**

Marketing Principles is the foundational course for the Marketing and Management, Fashion Merchandising and Buying, and Marketing Communications and Promotion Pathways.

Marketing Principles addresses all the ways in which marketing satisfies consumer and business needs and wants for products and services. Students develop a basic understanding of Employability, Foundational and Business Administration skills, Economics, Entrepreneurship, Financial Analysis, Human Resources Management, Information Management, Marketing, Operations, Professional Development, Strategic Management, and Global Marketing strategies. Instructional projects with real businesses, work-based learning activities including School-Based Enterprises, and DECA application experiences should be incorporated in this course.

**Prerequisite:** *None*

#### **08.44100 Marketing & Entrepreneurship**

Entrepreneurship: Building a Business, an imperative component of a strong economy, is based on individuals who are creative thinkers and risk takers. Therefore, students in this entrepreneurship course focus on recognizing a business opportunity, starting a business based on the recognized opportunity, and operating and maintaining that business. This course begins by moving students from the typical "what is" educational focus to the "what can be" focus. Preparation of a business plan allows students to apply the functional areas of accounting, finance, marketing, and management to the planned business, as well as to the legal and economic environments in which a new venture operates. This course may be taken as a part of a student's Marketing Pathway or may serve as a stand-alone course for students in other disciplines wishing to explore business ownership. In order to increase the number of application experiences, students should participate in work-based learning activities and the

student organization, DECA, An Association of Marketing Students. It is highly advantageous for students to participate in a school-based enterprise where available. **Prerequisite:** *Marketing Principles*

### **08.44200 Marketing Management**

Marketing Management is the third course in the Marketing and Management pathway. Students assume a managerial perspective by applying economic principles in marketing, analyzing operation's needs, examining channel management and financial alternatives, managing marketing information, pricing products and services, developing product/service planning strategies, promoting products and services, purchasing, and professional sales. This course also includes global marketing where students analyze marketing strategies employed in the United States versus those employed in other countries. **Prerequisites:** *Marketing Principles, Marketing & Entrepreneurship*

## **Science, Technology, Engineering, Mathematics Career Cluster**

The Science, Technology, Engineering, Mathematics Career Cluster means planning, managing, and providing scientific research and professional and technical services.

### Engineering Drafting and Design Pathway

#### **48.54100 Intro to Engineering Drafting & Design**

Introduction to Engineering Drawing and Design is a foundation course that serves as an introduction to the drafting and design field and is a prerequisite to all other courses in the Engineering Drawing and Design program. Emphasis is placed on safety, geometric construction, fundamentals of Computer-Aided Drafting, and multi-view drawings. Students learn drafting techniques through the study of geometric construction at which time they are introduced to computer-aided drafting and design. The standards are aligned with the drafting and design standards in the Georgia's technical colleges, thus helping students qualify for advanced placement should they continue their education at the postsecondary level. Further, the standards are aligned with the national standards of the American Design Drafting Association (ADDA). Students who successfully complete this and other drafting courses should be prepared to take the Drafter Certification Examination from the ADDA. Competencies for the co-curricular student organization, SkillsUSA and/or TSA, are integral components of both the core employability skills standards and the technical skills standards. SkillsUSA and/or TSA activities should be incorporated throughout instructional strategies developed for the course.

**Prerequisite:** *None*

#### **48.54200 Survey of Engineering Graphics**

Engineering Concepts and Drawings is a one-credit course designed to further the development of student knowledge and skills in the Engineering Drawing and Design field. Students learn to illustrate more complex objects using the Computer-Aided Drafting (CAD) system and develop skills in dimensioning, tolerance, pictorials, sections, auxiliary views, and intersection and developments. While the term computer-aided design (CAD) does not appear in each competency, CAD tools and software should be used extensively throughout the course. The standards are aligned with the drafting and design standards in Georgia's technical colleges, thus helping students qualify for advanced placement should they continue their education at the postsecondary level. Further, the standards are aligned with the national standards of the American Design Drafting Association (ADDA). Students who successfully complete this and other drafting courses should be prepared to take the Drafter Certification Examination from the

ADDA. Competencies for the co-curricular student organization, SkillsUSA and/or TSA, are integral components of both the core employability skills standards and the technical skills standards. SkillsUSA and/or TSA activities should be incorporated throughout instructional strategies developed for the course.

**Prerequisite:** *Intro to Engineering Drawing & Design*

### **48.54300 3D Modeling and Analysis**

Solid Modeling is a one-credit course designed to further the development of student knowledge and skills in engineering and related mechanical design drafting areas. Emphasis is placed on 3-D working and assembly drawings including rendering and animation. While the term computer-aided design (CAD) does not appear in each competency, CAD tools and software should be used extensively throughout the course. The standards are aligned with the drafting and design standards in Georgia's technical colleges, thus helping students qualify for advanced placement should they continue their education at the postsecondary level. Further, the standards are aligned with the national standards of the American Design Drafting Association (ADDA). Students who successfully complete this and other drafting courses should be prepared to take the Drafter Certification Examination from the ADDA. Competencies for the co-curricular student organization, SkillsUSA and/or TSA, are integral components of both the core employability skills standards and the technical skills standards. SkillsUSA and/or TSA activities should be incorporated throughout instructional strategies developed for the course.

**Prerequisites:** *Intro to Engineering Drawing & Design, Survey of Engineering Graphics*

## Engineering and Technology Pathway

### **21.42500 Foundations of Engineering and Technology**

The Foundations of Engineering and Technology is the introductory course for the Engineering and Technology Education pathways. This STEM driven course provides the students with an overview of engineering and technology including the different methods used in the engineering design process developing fundamental technology and engineering literacy. Students will demonstrate the skills and knowledge they have learned through various project based activities while using an engineering design process to successfully master the "E" in STEM. **Prerequisite:** *none*

### **21.47100 Engineering Concepts**

Engineering Concepts is the second course in the Engineering and Technology Pathway. Students will learn to design technical solutions to engineering problems using a whole systems approach to engineering design. Students will demonstrate the application of mathematical tools, teamwork, and communications skills in solving various design challenges, while maintaining a safe work environment. **Prerequisite:** *Foundations of Engineering and Technology*

### **21.47200 Engineering Applications**

Engineering Applications is the third course in the Engineering and Technology Pathway. Students will apply their knowledge of Science, Technology, Engineering, and Math (STEM) to develop solutions to technological problems. Solutions will be developed using a combination of engineering software and prototype production processes. Students will use market research, cost benefit analysis, and an understanding of the design cycle to create and present design, marketing, and business plans for their solutions. A capstone project will allow students to demonstrate their depth of knowledge of the engineering design process and prepare them for future opportunities in the field of engineering. **Prerequisites:** *Foundations of Engineering and Technology, Engineering Concepts*

## **Transportation, Distribution, and Logistics Career Cluster**

The Transportation, Distribution & Logistics Career Cluster encompasses planning, managing, and moving people, materials, and goods by road, pipeline, air, rail, and water, and also includes other related professional and technical support services.

### Automobile Maintenance & Light Repair Pathway

#### **47.53110 Basic Maintenance and Light Repair**

This course is designed as the foundational course for the Automobile Maintenance and Light Repair pathway. Students in this course will learn the basic skills needed to gain employment as a maintenance and light repair technician. Students will be exposed to courses in automotive preventative maintenance and servicing and replacing brakes, and steering and suspension components. In addition, student will learn how to do general electrical system diagnosis, learn electrical theory, perform basic tests and determine necessary action. In addition, students will learn how to evacuate and recharge air-conditioning systems using the proper refrigerant. The hours completed in this course are aligned with ASE/NATEF standards and are a base for the entry-level technician. **Prerequisite:** *None*

#### **47.53210 Maintenance and Light Repair 2**

Students will learn the basic skills needed to gain employment as a maintenance and light repair technician and will expose students to automotive preventative maintenance and servicing, as well as replacing brakes, and steering and suspension components. Students will also learn general electrical system diagnosis, electrical theory, basic test requirements, and determining necessary action. In addition, students will learn how to evacuate and recharge air-conditioning systems using the proper refrigerant. Standards for this course are aligned with ASE/NATEF standards and are an excellent foundation for the entry-level technician. **Prerequisite:** *Basic Maintenance and Light Repair*

#### **47.53310 Maintenance and Light Repair 3**

Students will learn the basic skills needed to gain employment as a maintenance and light repair technician and will expose student to automotive preventative maintenance and servicing, replacing brakes, as well as steering and suspension components. Students will learn about general electrical system diagnosis, electrical theory, basic tests that are required, and determine the necessary action. In addition, students will learn how to evacuate and recharge air-conditioning systems using the proper refrigerant. The standards in this course are aligned with ASE/NATEF standards and are an excellent foundation for the entry-level technician.

**Prerequisite:** *Basic Maintenance and Light Repair 2*

### Flight Operations Pathway

#### **47.46000 Fundamentals of Aerospace**

This course is designed as the foundational course for both the Aviation Maintenance and the Flight Operations pathways. Students will gain a fundamental knowledge base in aviation history and regulations, the basic principles of flight, aerospace careers, and factors influencing work systems, aerospace technologies, and basic aviation meteorology. These concepts can later be applied to various aerospace occupations. Classroom and lab activities will assure students a thorough understanding of the aerospace environment.

**Prerequisite:** *None*

#### **47.48800 Flight Operations I**

Navigation and Communication are essential to the safe operation of aircraft within the airspace system. This course provides a foundation that enables the student to apply the basics of aircraft navigation and utilize efficient communication methods for safe aircraft operations.

**Prerequisite:** *Fundamentals of Aerospace*

### **47.48900 Flight Operations II**

Atmospheric dynamics and concepts are addressed to build a meteorological foundation that will enable students to understand environmental variables that create and change the earth's weather. Meteorological techniques will be used in analyzing, charting, and forecasting weather patterns, and students will apply learned skills to the aeronautical needs and procedures of the air transportation industry. **Prerequisite:** *Flight Operations I*

## Aviation Maintenance Pathway

### **47.46000 Fundamentals of Aerospace**

This course is designed as the foundational course for both the Aviation Maintenance and the Flight Operations pathways. Students will gain a fundamental knowledge base in aviation history and regulations, the basic principles of flight, aerospace careers, and factors influencing work systems, aerospace technologies, and basic aviation meteorology. These concepts can later be applied to various aerospace occupations. Classroom and lab activities will assure students a thorough understanding of the aerospace environment. **Prerequisite:** *None*

### **47.46200 Aviation Maintenance I**

Aviation Maintenance I is the second course in the Aviation Maintenance career pathway. Students will build a solid knowledge base in the basics of aircraft maintenance, performance, and design. Classroom and laboratory activities assure a thorough understanding of the aviation environment. **Prerequisite:** *Fundamentals of Aerospace*

### **47.46300 Aviation Maintenance II**

Aviation Maintenance II is the third course in the Aviation Maintenance career pathway. Students continue to build and expand their solid knowledge base in the basics of aircraft maintenance, performance, and design. Classroom and laboratory activities assure a thorough understanding of the aviation environment. **Prerequisite:** *Aviation Maintenance I*

## **Work-Based Learning**

Work-Based Learning (WBL) placements represent the pinnacle of the Career-Related Education experience. To qualify for a WBL placement, a student must be in grades 11 or 12 and at least 16 years old. Students must also have a defined Career Pathway in order to participate in the Work-Based component of Career-Related Education. This is especially important for successful completion of a student's pathway in that their job placement is directly related to the curriculum of the Career and Technical Education classes they have completed or in which they are concurrently enrolled. There are several opportunities for students to participate in a work-based learning. These opportunities include:

- Employability Skill Development
- Cooperative Education
- Internship
- Youth Apprenticeship
- Clinical Experiences
- Great Promise Partnership (GPP)

## **COMPONENTS OF WORK-BASED LEARNING**

The State of Georgia Department of Education recognizes four areas of skill development: Employability Skill Development (ESD), Cooperative Education, Internship and Youth Apprenticeship. The CTAE Department, YAP Specialist, WBL Coordinators, Teachers, Counselors, Parents and Advisors work together to offer internal and external programs that foster work experiences to prepare students to compete in the global marketplace.

### ***Employability Skill Development (ESD)***

ESD students can work for up to one school year at a work-site which may or may not be linked to a specific career pathway. Unlike other forms of Work-Based Learning, ESD students may be involved in work activities that have only an indirect relationship to previous or current classroom studies. This placement opportunity exists in recognition of the fact that almost everyone at some point must experience entry-level work and begin to understand the culture of the workplace. Training plans for ESD students concentrate heavily on the skills and knowledge identified as being important to success on the job. An ESD placement lacks the curricular connection evident in other placements such as Cooperative Education, Internships or Youth apprenticeship because there is no current or completed CTAE coursework that aligns with the placement.

### ***Cooperative Education***

Students participate in a structured program that connects school-based occupational instruction and related paid work-site experiences. These educational experiences provide a rigorous and relevant curriculum with an occupational specialty. Co-op students are guided by a formal, written training plan that defines specific academic and workplace skills to be mastered. Students must be concurrently enrolled in a course directly related to the job placement.

### ***Internship/Practicum***

An internship or practicum (synonymous terms used for two similar models) can take two different forms. The first is a one-time, short-term placement which lasts any amount of time less than what would be required to earn 1/2 or more units of credit, typically one to six weeks. An effective Internship experience should run for at least 10 hours and no more than 120 hours per semester. The second, more involved internship may last for as long as one year. It should involve the equivalent number of hours that the student would have spent in class in order to qualify for course credit.

### ***Youth Apprenticeship Program (YAP)***

The central objective of the YAP can be characterized as preparing every student for a high-skill occupation and providing Georgia with a pool of highly trained, technologically sophisticated young workers. *The student must be working in the area of his/her stated career objective, with*



*the ability/opportunity to gain 720 hours of work, and have the opportunity to gain a certification within the career area.* Department of Education changed the criteria for youth apprentice placements, which would allow students a better opportunity to complete the 720 hours prior to graduation, however, it is not necessary to do so. WBL coordinators are responsible for tracking students through postsecondary education to determine if the student remains in the program, and when the student becomes a YAP Completer.

## **Resources:**

Changes within CTAE for high school pathways/courses located at:

<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Cluster-AFNR.aspx>

End of the Pathway Assessments blueprints located at: <http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/CTAE-Georgia-Assessments.aspx>

Middle School Courses are located at:

[http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/Career\\_Pathway\\_Chart\\_080612.pdf](http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/Career_Pathway_Chart_080612.pdf)

Georgia Common Core Standards located at:  
<https://www.georgiastandards.org>

The CTAE Resource Network is a statewide organization supporting Career, Technical, and Agricultural Education initiatives in Georgia's public school systems.  
<https://www.ctaern.org/>

## **Alphabet Soup**

Understanding Acronyms

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### **A**

- ABC – Associated Builders and Contractors
- ACTE – Association for Career and Technical Education
- AECA - Atlanta Electrical Contractors Association

- AGC – Associated General Contractors
- ARC – Atlanta Regional Commission

## **B**

- BRIDGE – Building Resourceful Individuals to Develop Georgia’s Economy

## **C**

- CCMC – Clayton County Ministers Conference
- CCPS – Clayton County Public Schools
- CCRPI – College and Career Ready Performance Index
- CDHS – Charles Drew High School
- CEFGA – Construction Education Foundation of Georgia
- COOP – Cooperative Education
- CRCT – Criterion-Referenced Competency Test
- CTAE – Career Technical & Agricultural Education
- CTAERN – Career Technical & Agricultural Resource Network
- CTAERN.org –
  - The CTAE Resource Network is a statewide organization supporting Career, Technical, and Agricultural Education initiatives in Georgia’s public schools.
- CTAE Industry Certification -
  - When a program became industry certified, it received a "stamp of excellence", which represents the apex of program quality. Only those programs that have successfully undergone rigorous reviews by leaders from business and industry are recognized with this distinction. The State Department of Education is committed to the industry certification process as a part of its effort to strengthen technical and academic standards for all Career, Technical and Agricultural Education (CTAE) programs.
- CTSO – Career and Technical Student Organization

## **D**

- DECA – Distributive Education Clubs of America
  - DECA prepares emerging leaders and entrepreneurs in marketing, finance, hospitality and management.
- DJJ – Department of Juvenile Justice (Georgia)
- DE – Dual Enrollment

## **E**

- ECP – Education and Career Partnership
- EOCT – End of Course Test
- EOPA – End of Pathway Assessments
  - EOPA test-taker – A student who has completed three sequential/required courses in a career pathway and sat for an industry recognized exam to gain industry credentials or test results that prove competency in varied skills/trades; through test vendors such as: *NOCTI, SkillsUSA, National Automotive Student Skills Standards Assessment*.
- ESD – Employability Skill Development
- ESEA – Elementary and Secondary Education Act
- Extended Day –
  - The extended day grant funded by the CTAE division of GaDOE is for work performed beyond the regular school by teachers in state-approved CTAE program areas. Pay for the

extended day grant salary is based on the minimum hourly rate on the state approved 190-day base salary schedule.

Full and Half Extended Day -

- The minimum hourly rate is calculated as one hour per day based on an eight hour workday. Teachers who work one hour beyond the school day for a 190-day school year receive “full extended day” pay whereas teachers working 95 hours per year receive “half extended day” pay. For simplicity the hours to be worked have been standardized into 20 hours per month for full extended day and 10 hours per month for half extended day.

## F

- FACS – Family and Consumer Sciences
- FBLA- $\phi$ B $\Lambda$  - Future Business Leaders of America-Phi Beta Lambda
- FCCLA – Family, Career and Community Leaders of America
- FFA – Future Farmers of America, Agriculture Education
- FPHS – Forest Park High School

## G

- GAA – Georgia Alternate Assessment
- GAcollge411 – Free website provided by the State of Georgia that helps Georgia students plan, apply, and pay for college.
- GaDOE – Georgia Department of Education
- GaDOL – Georgia Department of Labor
- GAIEF – Georgia Apartment Industry Education Foundation
- GACTE – Georgia Association for Career and Technical Education
- GCIS – Georgia Career Information System
- GEICC - Georgia Energy and Industrial Construction Consortium
- GHSGT – Georgia High School Graduation Tests
- GHSWT – Georgia High School Writing Tests
- GKIDS – Georgia Kindergarten Inventory of Developing Skills
- GOWD – Governor’s Office of Workforce Development
- GSFC – Georgia Student Finance Commission
- GUCA – Georgia Utility Contractors Association

## H

- HOSA –Health Occupations Students of America

## I

- IEC – Independent Electrical Contractors
- IDEA – Individuals with Disabilities Education Act

## J

- JHS – Jonesboro High School

## K

## L

- LHS – Lovejoy High School

## **M**

- MAG – Masonry Association of Georgia
- MCA – Mechanical Contractors Association
- MOU – Memorandum of Understanding
- MOWR – Move on When Ready
- Monthly Report -
  - By rule, the POW, Monthly Report and Annual Report for each teacher on extended day must be “maintained in the office of the vocational supervisor and/or vocational director.”
- MMHS – Mundy’s Mill High School
- MRW – Mike Rowe Works Foundation
- mikeroweWORKS – Mike Rowe Works
- MZHS – Mt. Zion High School

## **N**

- NAEP – National Assessment of Education Progress
- NATP – Nurse Aide Training Program
- NCDG – National Career Development Guidelines
- NCHS - North Clayton High School
- NE – Nursing Essentials
- NTHA – National Technical Honor Association

## **O**

## **P**

- PAC – Performing Arts Center
- Perry – Perry Learning Center, Open Campus
- PLC - Professional Learning Center (Truett Cathy)
- POW – Program of Work.
  - Outlines the activities to be performed beyond the school day. The POW exists as an extension of the teacher’s profile on the CTAE Resource Network (CTAERN) website.
- PPACA – Patient Protection and Affordable Care Act

## **Q**

## **R**

- RHS – Riverdale High School

## **S**

- SkillsUSA – Partnership of students, teachers and industry working together to ensure America has a skilled workforce.
- SBOE – State Board of Education

## **T**

- TAA – Teachers as Advisors

- TABE – Test of Adult Basic Education
- TCC – Technical Certificate of Credit
- TEFGA – Transportation Education Foundation of Georgia
- TSA – Technology Student Association

## U

- USDOE – United States Department of Education
- USGBC – United States Green Building Council

## V

## W

- WBL – Work Based Learning
- WIA – Workforce Investment Act
- WIP – Workforce Incentive Plan

## X

## Y

- YAP – Youth Apprenticeship Program

## Z



**Clayton County Public Schools**  
Dr. Morcease J. Beasley, Superintendent of Schools