



Dr. John D. Barge  
State School Superintendent  
"Making Education Work for All Georgians"

# CTAE

Career, Technical and  
Agricultural Education

## ANNUAL REPORT 2010

# CTAE

Clusters:  
Peach State  
Pathways to  
Student Success





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Dr. John D. Barge, State School Superintendent



Dear Friends and Colleagues,

Thank you for your interest in learning more about the Georgia Department of Education's Career, Technical, and Agricultural Education (CTAE) programs. Our ongoing work continues to be focused on developing relevant career pathways aligned to the 21st century workplace. We are guided by our vision - Making Education Work for All Georgians. I strongly believe that we can accomplish that vision by providing students with the vast array of opportunities offered through our Career Cluster Pathways initiative.

One of the most fundamental obligations of any society is to prepare its young people to lead productive lives as adults. To help our students be successful in today's world of work, we must offer them the opportunity to gain a solid foundation of knowledge and skills before they leave high school. Our goal is to provide students, beginning with the elementary grades, with the appropriate preparation, career exploration, and supports necessary for success. Unfortunately, far too many students leave high school without a diploma because they can't see a connection between their program of study and tangible opportunities in the labor market. In Georgia, we are working diligently to address this critical issue.

Our vision of Making Education Work for All Georgians also benefits the business and industry communities because our CTAE Career Cluster Pathways are aligned to their workforce needs. We are also transforming student work-based learning opportunities and working to increase the number of students who graduate from high school with an industry certification credential.

Students who follow our Career Cluster Pathways are not only prepared for their chosen careers, but also are provided with a real-life connection to what is being taught in our core classes of mathematics, social studies, science, and English. Additionally, our pathways promote critical thinking and problem solving -- important skills for our nation's future leaders.

By blending core academics with our CTAE programs, I believe we are creating a road map to success for all students. I am proud to provide more details about our initiatives through this annual report. Your continued interest in our work will be appreciated as we move forward in our vision for Making Education Work for All Georgians.

Sincerely,

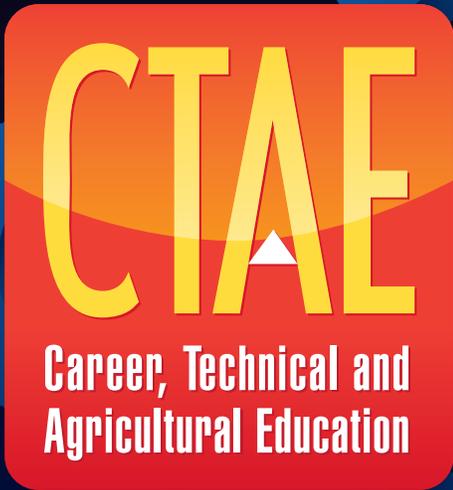
John D. Barge, Ed.D

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*"Making Education Work for All Georgians"*

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# Annual Report 2010



Parents, Students, and Stakeholders,

The future economic strength of Georgia and the economic strength of our great nation depend on the success of our students. The Georgia Department of Education Career, Technical and Agriculture Education (CTAE) programs will continue to aim toward our goal of ensuring that every student in Georgia graduates college and is career ready.



Thanks to the professionalism and hard work of our CTAE teachers, our students have again surpassed the state's graduation rate for all students. In FY10, our CTAE concentrators graduated at a rate of 91.80%. Many of our students come to school solely for the purpose of attending the CTAE classes where relevancy and the development of relationships are essential components in all daily lesson plans. **Our CTAE programs and pathways are making a difference in student achievement.**

Our Career and Technical Student Organizations (CTSOs) continue to grow in membership. These organizations are important because they offer opportunities for further growth in leadership and technical skills to our students outside of the classroom. The CTSOs are extensions of our programs.

Our Work-Based Learning programs continue to strive for excellence. Through Youth Apprenticeship, internships, and cooperative opportunities, approximately 19,000 CTAE students earned approximately \$25 million in FY10. Industry leaders are beginning to see that our students are better prepared for the 21st Century workforce with good work ethics and technical skills.

Industry certification of the CTAE programs continues to be very important. We appreciate industry leaders taking the time to review and recognize outstanding programs. Our CTAE programs have been blessed with the support of our Georgia Legislative members, our State School Board members, and our State School Superintendent, Dr. John Barge. They understand the significant contribution of our CTAE programs in the education of all Georgia students.

In the future, CTAE will continue to be the catalyst that ensures that 100% of Georgia's students graduate from high school. We have come a long way in the re-engineering of CTAE in Georgia over the past five years. Now we need to renew our spirit and motivation in creating, revising, and enhancing program opportunities for all students.

Sincerely,  


Audrey Bergeron, Director  
 Career, Technical and Agricultural Education

# Career, Technical and Agricultural Education Clusters...

## Peach State Pathways to Student Success

### CTAE At-A-Glance

#### Georgia Department of Education 2009-2010 Georgia Career, Technical and Agricultural Education Secondary Education—Grades 6-12

##### CTAE Programs

- 180 Local School Systems

##### Total Georgia Student Enrollment

- 519,700 Students in Grades 9-12
- 413,688 Students in Grades 6-8

##### Student Enrollment in CTAE Classes

(Students enrolled in one or more CTAE courses)

- 62.23% of all Students in Grades 9-12 Statewide (323,412 students)
- 55.95% of all Students in Grades 6-8 Statewide (231,438 students)

##### CTAE Enrollment by Gender in Middle and High Schools

- Male 51%
- Female 49%

##### CTAE Enrollment by Race

- Black 41.21%
- Hispanic 9.40%
- White 44.77%
- Other 5.62%

##### CTAE High School Concentrators

(3 or more classes in a Career Pathway)

- 78,831 Students

##### Graduation Rate for CTAE Concentrators

- 91.81%

##### Diploma Type Earned by CTAE High School Completers (35,620)

- College Prep 19.65%
- Technical/Career 36.75%
- Dual Seal 43.60%

Student Enrollment is the **unduplicated count**: Each student is counted once, although he/she could be enrolled in more than one CTAE program area.

Georgia Career, Technical and Agricultural Education (CTAE) career clusters are designed to ensure the success of each student. With a 91.81% graduation rate of CTAE High School Concentrators who take a sequence of three or more classes in a single Career Pathway, CTAE students graduate at a rate higher than all Georgia students (80.9%). Through CTAE classes and hands-on labs, Career Technical Student Organizations (CTSOs), college classes, and on-the-job experiences, students complete high school with marketable career skills and are prepared for employment, further training, and postsecondary education. CTAE students are on the pathway to successful and profitable careers that support the Georgia economy.

The state career and technical education system consists of programs offered at the middle and secondary school level by the Career, Technical and Agricultural Education (CTAE) Division of the Georgia Department of Education (GaDOE) and at the postsecondary level by the Technical College System of Georgia (TCSG). Guidelines of the Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV) align the CTAE program with the academic indicators of the No Child Left Behind Act.

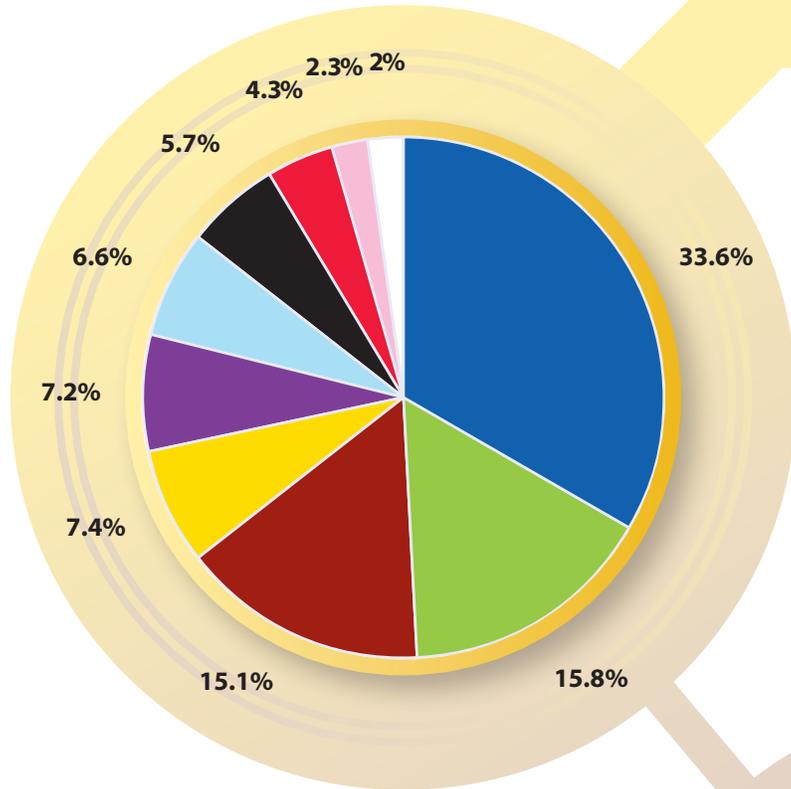
The CTAE programs with over 50 Career Pathways directly address the Georgia Department of Education Strategic Plan Goal 3 – Improve Workforce Readiness Skills. Each CTAE Career Pathway integrates a strong academic preparation with current and emerging career opportunities and workforce needs and skills. The CTAE Career Pathways are designed and updated on an ongoing basis, in concert with the Governor's Office of Workforce Development, State Workforce Investment Board, the state's colleges and universities, the Governor's Centers of Innovation, and recognized professional credentialing groups. Georgia Career Pathways, widely recognized as the best in the nation, develop a well-educated, technically trained and highly competitive workforce that stimulates Georgia's economy.

Programs of study under CTAE are:

- Incorporating and aligning secondary and postsecondary education
- Including academic and CTAE content in a coordinated, non-duplicative progression of courses
- Including the opportunity for secondary students to acquire postsecondary credits
- Leading to an industry-recognized credential or certificate at the postsecondary level, or an associate or baccalaureate degree
- Identifying and addressing current or emerging occupational opportunities

**CTAE Mission: To prepare students to be successful as they transition to college and the workforce.**

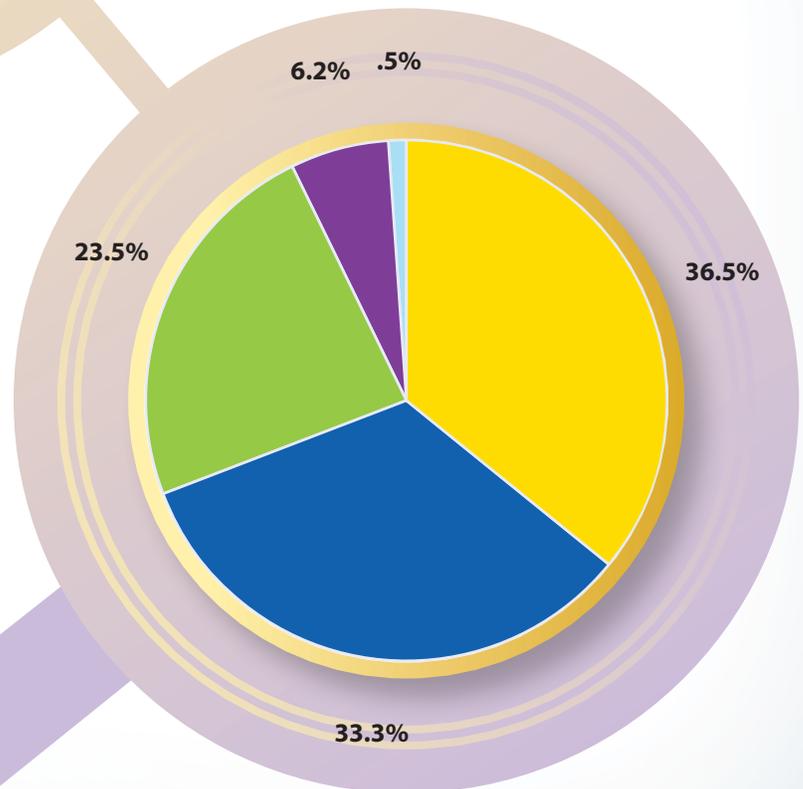
### High School Students (Grades 9-12) Enrolled in each Program Area in 2009-2010



Business and Computer Science	141,040
Family and Consumer Science	66,409
Architecture, Construction, Communications & Transportation	63,535
Engineering and Technology Education	31,153
Agricultural Education	30,422
Healthcare Science Education	27,537
Education	23,906
Marketing, Sales and Services Education	17,960
Culinary Arts	9,827
Government and Public Safety	8,148

Note: Student enrollment in each CTAE program area is an unduplicated count. A student could be counted more than once if enrolled in multiple programs.

Engineering & Technology Education	124,186
Business & Computer Science	113,182
Family & Consumer Sciences	79,714
Agricultural Education	21,126
Healthcare Science Education	1,682



### Middle School Students (Grades 6-8) Enrolled in each Program Area in 2009-2010



Georgia's bold vision is to equip all Georgia students, through effective teachers and leaders and through creating the right conditions in Georgia's schools and classrooms, with the knowledge and skills to empower them to 1) Graduate from high school, 2) Be successful in college and/or professional careers, and 3) Be competitive with their peers throughout the United States and the world.

— Governor Nathan Deal, State of Georgia

## CTAE Achievements in 2009-10

### Academic Achievements of CTAE Students

- **89.12%** of CTAE Concentrators who took the Georgia High School Graduation Test (GHS GT) met or exceeded state standards in **English/Language Arts**
- **72.46%** of CTAE Concentrators who took the Georgia High School Graduation Test met or exceeded state standards in **Mathematics**

### Graduation Rate for CTAE Concentrators

- **91.81%** graduated with regular diplomas in FY 2010
- CTAE **graduation rate of 91.81%** compares favorably with Georgia's overall graduation rate of **80.9%** in 2010

Georgia CTAE exceeded the **federal performance level targets** in 2 categories of Academic Attainment in FY 2010

	State FY 10 Target	Actual Performance
English/Language Arts (% passing GHS GT)	<b>88%</b>	<b>89.12%</b>
Mathematics (% passing GHS GT)	<b>73%</b>	<b>72.46%</b>
Graduation rate	<b>78%</b>	<b>91.81%</b>

### CTAE Postsecondary Transitions

- A total of **5,110** high school students **dual enrolled** in college-level CTAE courses at Georgia's technical colleges or other colleges with technical divisions
- A total of **959** high school students **joint enrolled** in college-level CTAE courses at Georgia's technical colleges or other colleges with technical divisions

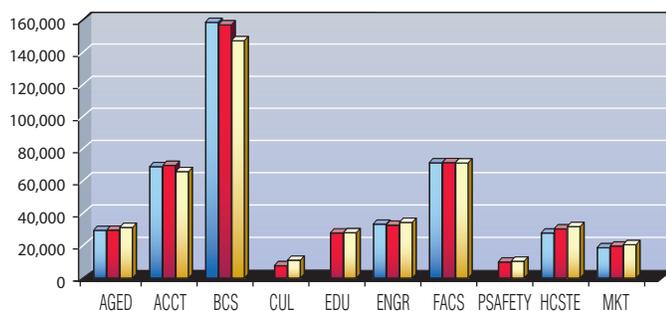
### CTAE Teacher Achievements

- **620 professional development workshops**, including onsite, distant learning, and Webinar sessions, were held with a total attendance of **7,978** CTAE educators throughout the state in FY 2010

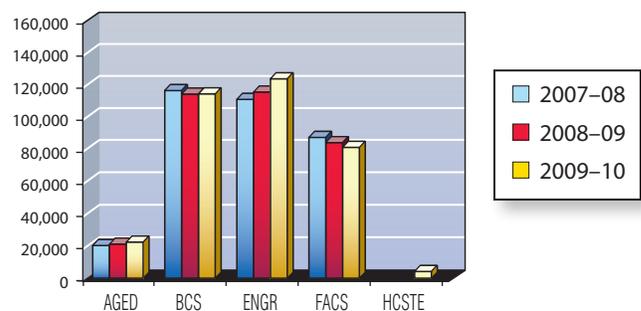
## CTAE Program Achievements

- **441** CTAE programs were **industry certified** in FY 2010
- **56%** of all **middle school** and **62%** of all **high school students** were enrolled in CTAE courses in FY 2010
- Student enrollment increased in the following **high school CTAE programs** compared to FY 2009
  - ◆ Culinary Arts (48%)
  - ◆ Agricultural Education (5.9%)
  - ◆ Engineering and Technology (5.8%)
  - ◆ Healthcare Science Education (5.4%)
  - ◆ Marketing, Sales & Services Education (4.9%)
  - ◆ Education (0.7%)
- Student enrollment increased in the following **middle school CTAE programs** compared to FY 2009
  - ◆ Engineering and Technology Education (6.6%)
  - ◆ Agriculture Education (6%)
  - ◆ Business and Computer Science (0.1%)
- **Healthcare Science Education program was established at the middle school level** in FY 2010 with **1,682** students participating
- **Student membership in Career Technical Student Organizations** numbered **147,214** in FY 2010 (a 6 % membership increase compared to FY 2009)
- **Student membership increased during 2010** in all the Georgia Career Technical Student Organizations
- **98%** of employers participating in the **Georgia Youth Apprenticeship Program** agreed that students performed at the level expected
- **97%** of employers participating in the **Georgia Youth Apprenticeship Program** found the program beneficial to their company, and **99.8%** of employers would recommend the program to other companies

CTAE High School Program Enrollment: Three Year Trends



CTAE Middle School Program Enrollment: Three Year Trends



## CTAE CAREER PATHWAYS -

*All the Right Programs...High School and Middle School Curriculum, Assessment, and Work-Based Learning... Working Together for Georgia's Student Success*

During the FY 2010 school year, the CTAE Division of the Georgia Department of Education conducted statewide field testing activities as a part of its End-of-Pathway Assessment (EOPA) implementation activities. School systems were asked to participate in field testing activities on a voluntary basis in the following five career pathway areas:

- ◆ **Accounting**
- ◆ **Architectural Drawing & Design**
- ◆ **Small Business Development**
- ◆ **Therapeutic Services: Medical Services**
- ◆ **Therapeutic Services: Nursing**

The following credentialing exams were offered to pathway completers:

- ◆ **Business Financial Management Assessment: National Occupational Competency Testing Institute (NOCTI)**
- ◆ **Architectural Drafting Assessment: SkillsUSA**
- ◆ **Fundamental Business Concepts Exam: Assessment of Skills and Knowledge (A\*S\*K Institute)**
- ◆ **Certified Nurse Aide (Assistant) Exam: Georgia Medical Care Foundation/Nurse Aide Competency Evaluation Service (NACES)**
- ◆ **National Healthcare Foundation Skills Assessment: National Consortium for Health Science Education (NCHSE)**

Only those students who had successfully completed the three designated courses in the above referenced career pathways participated in the field testing activities. The CTAE Division was pleased with the number of systems that volunteered to take part in this most worthwhile initiative. The participants included:

- ◆ **29 school systems with 40 high schools**
- ◆ **337 high school students who earned industry certified credentials**

### CTAE Career Pathways High School Foundation Skills

- ✦ **Technical Skills**
- ✦ **Academic Foundations**
- ✦ **Communications**
- ✦ **Problem Solving and Critical Thinking**
- ✦ **Information Technology Applications**
- ✦ **Organizational Systems**
- ✦ **Safety, Health and Environment**
- ✦ **Leadership and Teamwork**
- ✦ **Ethics and Legal Responsibilities**
- ✦ **Career Development**
- ✦ **Entrepreneurship**

**Selecting career pathway courses in middle and high school enables students to have a head start toward a successful future in their careers.**

### CTSO Core Values For Career Success

**Commitment** – To create among members, educators and business and industry an adherence and appreciation for all Career, Technical and Agricultural Education Programs

**Conviction** – To develop patriotism through knowledge of our nation's heritage and practice of democracy

**Education** – To create enthusiasm and empower students to become lifelong learners

**Integrity** – To deal honestly and fairly with one another

**Leadership** – To develop leadership abilities through participation in educational, professional, community and social activities

**Professionalism** – To promote high standards in career ethics, workmanship, scholarship and safety

**Recognition** – Appreciation of the value of achievement

**Service** – To cultivate a desire to contribute to the benefit and welfare of others

**Teamwork** – To enhance the ability of students to plan together, organize and carry out worthy activities and projects through the use of the democratic process

### Education-Career Partnership Initiative

Through the **Education-Career Partnership** the Georgia Department of Education, the Technical College System of Georgia, and the Georgia Board of Regents strengthen and expand seamless education opportunities to benefit Georgia high school students as they pursue their chosen careers. Georgia's technical colleges and other colleges and universities with technical divisions provide postsecondary education options for high school students that enhance their education in their identified Career Pathway. The Education-Career Partnership Initiative, an integral part of CTAE Program Career Pathways, makes it possible for high school students to participate in college classes through dual enrollment, joint enrollment, and articulated classes. Students may graduate high school with college credits and in some cases Certificates, Diplomas, or Associate Degrees in a career area.

**Number of High School Students  
Enrolled in College Level Courses FY 2010**

	Dual enrollment courses	Joint enrollment courses	Total student enrollment
Georgia Technical Colleges	4,940	959	5,899
Georgia Colleges with Technical Divisions	170	N/A	170
<b>Total student enrollment</b>	<b>5,110</b>	<b>959</b>	<b>6,069</b>

**AGRICULTURE EDUCATION (AGED) 2009-2010**



<p><b>Enrollment by Gender in Grades 9-12</b> (Unduplicated Count)</p>	<p><b>Total 30,422</b> <b>Male 19,604 (64%)</b> <b>Female 10,818 (36%)</b></p>
<p><b>High School Student Enrollment in Agriculture Education in FY 2010</b> (Duplicated Count)</p>	<p><b>Pathway-Related Course Enrollment – 104,530</b></p> <ul style="list-style-type: none"> <li>• Plant Science/Horticulture <b>17,303 (17%)</b></li> <li>• Agriculture Mechanics <b>16,495 (16%)</b></li> <li>• Agriscience <b>15,157 (15%)</b></li> <li>• Forestry &amp; Natural Resources <b>15,045 (14%)</b></li> <li>• Animal Science <b>14,968 (14%)</b></li> <li>• Veterinary Science <b>12,859 (12%)</b></li> <li>• Agribusiness Management <b>12,703 (12%)</b></li> </ul> <p><b>Other AGED Courses</b></p> <ul style="list-style-type: none"> <li>• <b>2,985</b></li> </ul>
<p><b>Grade 6-8 Student Enrollment in Agriculture Education Courses in FY 2010</b></p>	<p><b>21,126</b></p>
<p><b>Number of Industry-Certified Programs</b></p>	<p><b>Note:</b> AGED programs adopted new industry certification standards and is in the process of programs becoming industry certified.</p>
<p><b>Number of CTAE Teachers FY 2010</b></p>	<p><b>391 High School Teachers</b> <b>82 Middle School Teachers</b></p>



**AGRICULTURE EDUCATION (AgEd)** consists of three distinct but interrelated components. A basic component is classroom and laboratory experiences. In the classroom, students learn concepts and theories dealing with a broad spectrum of agricultural and agribusiness topics. The classroom is followed by the laboratory mode of instruction where concepts and theories are carried through to their application. Here, the students are taught “hands-on” skills to ensure that the skills learned are practical and usable. The third component, the FFA student organization, provides students an avenue for developing leadership skills. Both classroom and laboratory instruction are put to use in the Supervised Agricultural Experience Program (SAEP) component of the program. In this approach, students work and learn in a real-life situation where they obtain on-the-job skills.

***Mission: To be a premier learning system that delivers agricultural, environmental, and leadership education programs and services.***

**ARCHITECTURE, CONSTRUCTION, COMMUNICATIONS & TRANSPORTATION (ACCT) 2009-2010**

**ARCHITECTURE, CONSTRUCTION, COMMUNICATIONS & TRANSPORTATION (ACCT)** program activities include classroom and laboratory experiences that enable students to gain technical and academic skills in laboratories that simulate “real-world” work environments in their specific areas of interest. Students have opportunities with hands-on projects, on-the-job training, and challenging classroom curriculum that include relevant math, communications and computers. To gain real-world skill development in the work place, students may incorporate work-based learning experiences into their schedule. SkillsUSA, the ACCT student organization, provides co-curricular activities and opportunities that help students develop academic and technical skills and encourage them to become better citizens.



<p><b>Enrollment by Gender in Grades 9-12</b> (Unduplicated Count)</p>	<p><b>Total 63,535</b> <b>Male 43,574 (69%)</b> <b>Female 19,961 (31%)</b></p>
<p><b>High School Student Enrollment in Architecture, Construction &amp; Transportation Education in FY 2010</b> (Duplicated Count)</p>	<p><b>Pathway-Related Course Enrollment -- 84,057</b></p> <ul style="list-style-type: none"> <li>• Construction <b>12,835 (15%)</b></li> <li>• Broadcast/Video Production <b>12,077 (14%)</b></li> <li>• Transportation/Logistical Support – Ground Marine <b>10,909 (13%)</b></li> <li>• Transportation/Logistical Operations – Ground Marine <b>9,755 (12%)</b></li> <li>• Architectural Drawing &amp; Design <b>8,948 (11%)</b></li> <li>• Heating, Ventilation, Air Conditioning, and Refrigeration (HVACR) <b>8,270 (10%)</b></li> <li>• Graphic Design <b>7,765 (9%)</b></li> <li>• Graphic Communications <b>7,529 (9%)</b></li> <li>• Metals <b>4,597 (5%)</b></li> <li>• Flight Operations <b>596 (1%)</b></li> <li>• Collision Repair <b>529 (1%)</b></li> <li>• Aircraft Support <b>247 (less than 1%)</b></li> </ul> <p><b>Other ACCT Courses</b></p> <ul style="list-style-type: none"> <li>• <b>2,743</b></li> </ul>
<p><b>Number of Industry-Certified Programs:</b></p>	<p><b>126</b></p>
<p><b>Number of CTAE Teachers FY 2010</b></p>	<p><b>736 High School Teachers</b></p>



*The automotive industry demands a rigid adherence to quality, and our product and manufacturing is considered highly technical. Combine this with a tight labor market, and it is critical that we have a well-educated workforce. The secondary technical education students have helped us considerably--they are motivated, well prepared, and appreciate being able to learn valuable job skills while they further their education. To date, we have had 19 students complete the program and become full-time employees.*

**—Elizabeth Umberson, Plant Manager  
ZF Industries  
Gainesville, Georgia**

**BUSINESS & COMPUTER SCIENCE (BCS) 2009-2010**



<b>Enrollment by Gender in Grades 9-12</b> (Unduplicated Count)	<b>Total</b> 141,040 <b>Male</b> 73,964 (52%) <b>Female</b> 67,076 (48%)
<b>High School Student Enrollment in Business and Computer Science in FY 2010</b> (Duplicated Count)	<b>Pathway-Related Course Enrollment – 242,401</b> <ul style="list-style-type: none"> <li>• Administration/Information Support <b>63,403 (26%)</b></li> <li>• Small Business Development <b>42,737 (18%)</b></li> <li>• Financial Mgmt. – Accounting <b>39,097 (16%)</b></li> <li>• Financial Mgmt. – Services <b>34,927 (14%)</b></li> <li>• Interactive Media <b>27,086 (11%)</b></li> <li>• Computing <b>17,469 (7%)</b></li> <li>• Computer Systems &amp; Support <b>16,649 (7%)</b></li> <li>• Computer Networking <b>1,033 (less than 1%)</b></li> </ul> <b>Other BCS Courses</b> <ul style="list-style-type: none"> <li>• <b>7,574</b></li> </ul>
<b>Grade 6-8 Student Enrollment in Business and Computer Science Courses in FY 2010</b>	<b>113,182</b>
<b>Number of Industry-Certified Programs:</b>	<b>133</b>
<b>Number of CTAE Teachers FY 2010</b>	<b>1,806 High School Teachers</b> <b>368 Middle School Teachers</b>



**BUSINESS and COMPUTER SCIENCE (BCS)** programs consist of three components: classroom/ laboratory experiences, which provide instruction that meets industry-validated standards; work-based learning directly related to classroom instruction in the form of internships, cooperative education, school-based enterprises, and youth apprenticeship; and the career and technical student organization of FBLA, which provides co-curricular activities within the program area to develop teamwork and leadership skills. BCS programs prepare students to become productive members of the business community and to enter a postsecondary institution after graduation. Students develop competencies in such areas of instruction as finance, legal operations of business, administrative support, information management, international business, entrepreneurship, and management.



*As an employer in a small, rural community, for more than 25 years we have experienced the results and realize the value of secondary technical education programs offered students in our schools. Students are given a chance to acquire skills needed in the workforce, giving them a way to be productive, self-supporting citizens. These students learn work ethics and build self-confidence in seeing the fruits of their efforts. Six of the students whom we hired from these programs have remained with us from high school through their adult careers as a viable, contributing part of our workforce."*

**—Jimmy Benefield, President  
Farmers and Merchants Bank, Lakeland, Georgia**

## CULINARY ARTS (CUL) 2009-2010

**CULINARY ARTS** is a growing program based on the American Culinary Federation Standards and has articulations with postsecondary institutions. Students in this field gain knowledge in diet, nutrition, food preparation, cost and budgets, and the science of food. Culinary Arts is designed for students to learn the “art” of cooking in many diverse roles, such as Sous Chef, Pastry Chef, Kitchen Manager, Garde Manager, Banquet Chef, and Restaurant Entrepreneur. Students participate in hands-on activities through the FCCLA student organization.



<b>Enrollment by Gender in Grades 9-12</b> (Unduplicated Count)	<b>Total</b> 9,827 <b>Male</b> 3,483 (35%) <b>Female</b> 6,344 (65%)
<b>High School Student Enrollment in Culinary Arts in FY 2010</b> (Duplicated Count)	<b>Pathway-Related Courses Enrollment – 9,153</b>
<b>Number of Industry-Certified Programs</b>	5
<b>Number of CTAE Teachers FY 2010</b>	119 High School Teachers

*The Culinary Arts curriculum is based on American Culinary Federation Standards, and has articulations with Technical Colleges in Georgia, as well as many of the finest Culinary Arts schools in the nation.*



## EDUCATION (EDU ) 2009-2010

**EDUCATION** is designed for students who are interested in pursuing a career in the education field. There are many diverse career opportunities, including school administrator, school counselor, elementary school teacher, special needs teacher, secondary teacher, post secondary teacher, career and technical teacher, preschool teacher, and paraprofessional. Students have two career pathways to choose from: Early Childhood Education & Teaching as a Profession. These pathways introduce the foundations of education combined with the knowledge and skills gained in both the classroom and in the workplace, and prepare students for a career in education.

<b>Enrollment by Gender in Grades 9-12</b> (Unduplicated Count)	<b>Total</b> 23,906 <b>Male</b> 2,908 (12%) <b>Female</b> 20,998 (88%)
<b>High School Student Enrollment in Education in FY 2010</b> (Duplicated Count)	<b>Pathway-Related Courses Enrollment – 24,068</b> <ul style="list-style-type: none"> <li>• Early Childhood Education 20,744 (81%)</li> <li>• Teaching as a Profession 4,874 (19%)</li> </ul>
<b>Number of Industry-Certified Programs</b>	5
<b>Number of CTAE Teachers FY 2010</b>	158 High School Teachers

*Education and how we can improve the education of our students is a major focus in Georgia, as well as many other states in the nation. The large number of educators that are at, or nearing, the age of retirement, combined with the small number of teacher educators graduating from college, is a concern. These are reasons this Education Program Area is important –we need to start growing our own teachers in communities across Georgia.*



**ENGINEERING AND TECHNOLOGY EDUCATION (ENGR)** concentration combines hands-on projects with a rigorous curriculum to prepare students for challenging careers. ENGR programs utilize computer and educational technology in the delivery of content related to systems of communication, energy/power, transportation, production, and bio-related technologies. Technology education develops technological literacy as a part of the students' fundamental education through an activity-based study of past, present, and future technological systems and their resources, processes, and impact on society. In addition to classroom and laboratory experiences, students participate in TSA student organization activities.



**ENGINEERING AND TECHNOLOGY EDUCATION (ENGR) 2009-2010**

<b>Enrollment by Gender in Grades 9-12</b> (Unduplicated Count)	<b>Total</b> 31,153 <b>Male</b> 24,609 (79%) <b>Female</b> 6,544 (21%)
<b>High School Student Enrollment in Engineering and Technology Education in FY 2010</b> (Duplicated Count)	<b>Pathway-Related Courses Enrollment -- 42,771</b> <ul style="list-style-type: none"> <li>• Engineering 19,051 (45%)</li> <li>• Energy Systems 13,205 (31%)</li> <li>• Engineering Graphics &amp; Design 8,214 (19%)</li> <li>• Electronics 1,356 (3%)</li> <li>• Manufacturing 945 (2%)</li> </ul> <b>Other ENGR Courses</b> <ul style="list-style-type: none"> <li>• 574</li> </ul>
<b>Grade 6-8 Student Enrollment in Engineering and Technology Education Courses in FY 2010</b>	<b>124,186</b>
<b>Number of Industry-Certified Programs:</b>	<b>51</b>
<b>Number of CTAE Teachers FY 2010</b>	<b>482 High School Teachers</b> <b>290 Middle School Teachers</b>



*I get so much more than just a paycheck. They make me feel like I am an important part of this Siemens plant and that the work I do is of high quality and needed by Siemens.*

*—Sean Carty, Apprenticeship Student  
Siemens Energy and Automation, Forsyth, Georgia*



**FAMILY AND CONSUMER SCIENCES (FACS) 2009-2010**

<p><b>Enrollment by Gender in Grades 9-12</b> (Unduplicated Count)</p>	<p><b>Total</b> 66,409  <b>Male</b> 16,879 (25%)  <b>Female</b> 49,530 (75%)</p>
<p><b>High School Student Enrollment in Family and Consumer Sciences Education in FY 2010</b> (Duplicated Count)</p>	<p><b>Pathway-Related Courses Enrollment – 32,356</b></p> <ul style="list-style-type: none"> <li>• Nutrition &amp; Food Science <b>25,353 (78%)</b></li> <li>• Interior &amp; Fashion Design <b>5,676 (18%)</b></li> <li>• Consumer Services <b>1,327 (4%)</b></li> </ul> <p><b>Other FACS Courses</b></p> <ul style="list-style-type: none"> <li>• <b>8,328</b></li> </ul>
<p><b>Grade 6-8 Student Enrollment in Family and Consumer Science Courses in FY 2010</b></p>	<p><b>79,714</b></p>
<p><b>Number of CTAE Teachers FY 2010</b></p>	<p><b>501 High School Teachers</b>  <b>203 Middle School Teachers</b></p>

**FAMILY AND CONSUMER SCIENCES (FACS)** education combines relevant coursework, classroom projects, internships, and student organization activities to offer a unique focus on families, work, and their interrelationships. FACS and the student organization FCCLA provide a solid foundation for success in a broad range of careers that require strong leadership, professional, and interpersonal skills. Students learn to manage resources to meet the essential needs of individuals and families, to promote optimal nutrition and wellness across the life span, and to accept responsibility for actions and success in family, work, and the diverse global society.



*The Family and Consumer Science program prepares students for postsecondary education and careers in the business related aspects of family and consumer sciences. It provides opportunities to develop the knowledge, skills, attitudes, and behaviors that students need to become responsible citizens and leaders; and to manage the challenges of living and working in a diverse global society.*

**GOVERNMENT & PUBLIC SAFETY (PSAFETY) 2009-2010**



<b>Enrollment by Gender in Grades 9-12</b> (Unduplicated Count)	<b>Total</b> 8,148 <b>Male</b> 4,538 (56%) <b>Female</b> 3,610 (44%)
<b>High School Student Enrollment in Government and Public Safety in FY 2010</b> (Duplicated Count)	<b>Pathway-Related Courses Enrollment – 8,194</b> <ul style="list-style-type: none"> <li>• Law and Justice <b>7,984 (98%)</b></li> <li>• Homeland Security &amp; Emergency Services <b>105 (1%)</b></li> <li>• Firefighting <b>105 (1%)</b></li> </ul>
<b>Number of Industry-Certified Programs</b>	<b>0</b>
<b>Number of CTAE Teachers FY 2010</b>	<b>83 High School Teachers</b>



The **GOVERNMENT & PUBLIC SAFETY** program concentration provides students with the basic technical skills and solid academic foundation required to pursue a career in a wide range of fast-growing career fields. Through classroom, laboratory, and on-the-job training, students learn about a variety of agencies and professions in law enforcement, private security, corrections, fire, and emergency management services. Choosing a career in the service industry provides students with a challenging pathway to their future. Students participate in related activities through SkillsUSA.

*If you visit a public safety program in Georgia, you may see a mock trial in progress, a simulated crime scene, CPR training, the fingerprinting process, a table top emergency plan, or a demonstration of fire rescue techniques, but you definitely will see students who are excited about learning.*

**COORDINATED CAREER ACADEMIC EDUCATION/PROJECT SUCCESS (CCA/PS) 2009-2010**



<b>Enrollment by Gender in Grades 9-12</b> (Unduplicated Count)	<b>Total</b> 6,936 <b>Male</b> 3,620 (52%) <b>Female</b> 3,316 (48%)
<b>Number of CTAE Teachers FY 2010</b>	<b>83 High School Teachers</b>

**COORDINATED CAREER ACADEMIC EDUCATION/PROJECT SUCCESS** provides educational and occupational services to assist students in becoming responsible, productive citizens. Through participation in the CCAE/PS support services, students in grades 9-12 learn about the world of work and employment skills they need to be successful. Throughout their school years, students have the opportunity to develop knowledge, attitudes and experiences that will serve as a substantial base for decision making when they reach points in their lives when they must make education or career decisions.

## HEALTHCARE SCIENCE EDUCATION (HCSTE) 2009-2010

**HEALTHCARE SCIENCE EDUCATION** programs prepare students to enter and succeed in a wide variety of expanding healthcare careers. Students learn basic concepts of health, wellness, and preventive care, medical terminology, microbiology, life-support skills, and the ethical and legal responsibilities of healthcare providers, as well as problem solving and decision making skills. Students may participate in HOSA or SkillsUSA student organizations. According to the Georgia Department of Labor, by the year 2014, health services will account for one in every 12 jobs in Georgia. The healthcare field is projected to increase by almost 100,000 jobs. Based on this projection, there will be more than 420,000 jobs in healthcare by 2014.



<b>Enrollment by Gender in Grades 9-12</b> (Unduplicated Count)	<b>Total</b> 27,537 <b>Male</b> 4,967 (18%) <b>Female</b> 22,570 (82%)	
<b>High School Student Enrollment in Healthcare Science Education (HCSTE) Education in FY 2010</b> (Duplicated Count)	<b>Pathway-Related Course Enrollment – 134,547</b> <ul style="list-style-type: none"> <li>• Therapeutic Services- Nursing <b>24,407 (18%)</b></li> <li>• Therapeutic Services- Medical <b>22,799 (17%)</b></li> <li>• Therapeutic Services- Emergency <b>17,075 (13%)</b></li> <li>• Health Informatics <b>16,654 (12%)</b></li> <li>• Diagnostic Services <b>16,114 (12%)</b></li> <li>• Physical Medicine <b>16,070 (12%)</b></li> <li>• Biotechnology Research &amp; Development <b>16,101 (12%)</b></li> <li>• Personal Care Services -- Cosmetology <b>5,327 (4%)</b></li> </ul>	
<b>Grade 6-8 Student Enrollment in Healthcare Science Education Courses in FY 2010</b>	1,682	
<b>Number of Industry-Certified Programs:</b>	56	
<b>Number of CTAE Teachers FY 2010</b>	275 High School Teachers (Healthcare) 84 High School Teachers (Cosmetology) 9 Middle School Teachers	

*A new middle school curriculum is now being offered in some schools to start students thinking about Healthcare at an even earlier age. Employment in the healthcare industry will provide students with a financially stable and rewarding career of service to others. Having a chance to begin this quest while still in middle or high school is a wonderful way for students to prepare for their future.*

## CAREER AND TECHNICAL INSTRUCTION (CTI) 2009-2010

**CAREER AND TECHNICAL INSTRUCTION** is designed to support students with disabilities enrolled in CTAE classes and in participation in Career Technical Student Organizations. The goal of the secondary level support services is to provide students with employment opportunities at the completion of their CTAE experience.

<b>Enrollment by Gender in Grades 9-12</b> (Unduplicated Count)	<b>Total</b> 5,920 <b>Male</b> 3,770 (64%) <b>Female</b> 2,150 (36%)
<b>Number of CTAE Teachers FY 2010</b>	278 High School Teachers

**MARKETING, SALES AND SERVICES EDUCATION (MKT) 2009-2010**



**MARKETING, SALES AND SERVICES EDUCATION** programs develop student knowledge and skills in the foundation 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). In addition, students study international marketing, management, and entrepreneurship. DECA provides students with a variety of real-world experiences. Students are prepared to enter careers in marketing, management, and entrepreneurship, as well as to pursue postsecondary education.



<b>Enrollment by Gender in Grades 9-12</b> (Unduplicated Count)	<b>Total</b> 17,960 <b>Male</b> 7,915 (44%) <b>Female</b> 10,045 (56%)
<b>High School Student Enrollment in Marketing, Sales and Services Education (MKT) in FY 2010</b> (Duplicated Count)	<b>Pathway-Related Course Enrollment – 51,120</b> <ul style="list-style-type: none"> <li>• Marketing &amp; Management <b>12,533 (22%)</b></li> <li>• Fashion Marketing <b>12,147 (21%)</b></li> <li>• Sports &amp; Entertainment Marketing <b>11,784 (21%)</b></li> <li>• Travel Marketing &amp; Lodging Management <b>10,433 (18%)</b></li> <li>• Marketing Communication &amp; Promotion <b>10,223 (18%)</b></li> </ul> <b>Other MKT Courses</b> <ul style="list-style-type: none"> <li>• 546</li> </ul>
<b>Number of Industry-Certified Programs:</b>	<b>65</b>
<b>Number of CTAE Teachers FY 2010</b>	<b>150 High School Teachers</b>

*The American Marketing Association and the Georgia Department of Education continue to refine the standards by which exemplary Marketing Education Programs are evaluated and certified. The strength of these business partnerships ensures that curriculum meets industry specifications.*

**JUNIOR RESERVE OFFICERS TRAINING CORPS (JROTC) 2009-2010**

<b>High School Student Enrollment in JROTC-Related Courses in FY 2010 by Type of Service</b>	<ul style="list-style-type: none"> <li>• U.S. Army <b>16,565</b></li> <li>• U. S. Air Force <b>7,736</b></li> <li>• U.S. Navy <b>6,976</b></li> <li>• U.S. Marines <b>2,244</b></li> </ul>
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**JUNIOR RESERVE OFFICERS TRAINING CORPS** offers the opportunity for high school students to be enrolled in a citizenship program that combines classroom instruction and practical application with extracurricular activities. The curriculum teaches leadership, time management, and organizational procedures, the rights, responsibilities, and privileges of citizenship, and how our military serves our government. It provides leadership opportunities and helps the student cadet develop a sense of personal responsibility and build life skills. JROTC, under the umbrella of the Career, Technical and Agricultural Education Division of the Georgia Department of Education, offers courses that satisfy pathway concentration provisions as students earn credit toward graduation. ROTC students earn scholarship rewards and contribute hours of community service locally.



Career Technical Student Organizations (CTSO)	CTAE Program	FY 2010 Membership
 <p><b>Membership in the Georgia Future Farmers of America (FFA) was at an all-time high in FY 2010 and Georgia ranked 3rd in the nation.</b> The FFA makes a positive difference in the lives of students by developing their potential for premier leadership, personal growth, and career success through agricultural education.</p>	Agriculture	30,269
 <p><b>SkillsUSA of Georgia</b> is a partnership of students, teachers, and industry representatives working together to ensure America has a skilled work force. The organization helps each student excel. SkillsUSA is a national nonprofit organization serving teachers and high school students who are preparing for careers in trade, technical and skilled service occupations. <b>Georgia membership is the 13th largest in the nation.</b></p>	Architecture, Construction, Communication & Transportation, Cosmetology, Government & Public Safety	6,966
 <p><b>Future Business Leaders of America (FBLA)</b> is the largest and oldest business student organization in the world, preparing students for careers in business and business-related fields. The mission is to bring business and educators together in a positive working relationship through innovative leadership and career development programs. <b>Both middle and high school students may participate.</b></p>	Business and Computer Science	25,466
 <p>The <b>Technology Student Association (TSA)</b> is the oldest student organization dedicated exclusively to students enrolled in engineering and technology education classes in grades K-12. TSA promotes engineering and technology education as a means of preparing students for the dynamic world, and invites them to become critical thinkers, problem solvers, and technologically literate leaders. Members of TSA are given the opportunity to demonstrate their abilities and learn new skills.</p>	Engineering & Technology	28,107
 <p><b>Family, Career and Community Leaders of America (FCCLA)</b> is a dynamic and effective national student organization that helps young men and women become leaders and address important personal, family, work, and societal issues through Family and Consumer Services Education. It is the only career and technical student organization with the family as its central focus. Participation in national programs and chapter activities helps members become strong leaders in their families, careers, and communities. <b>The Georgia FCCLA has the largest membership of all CTSO organization in the state and placed 3rd overall for the State Achievement Award.</b></p>	Family & Consumer Sciences	32,730
 <p>The mission of <b>Health Occupations Students of America (HOSA)</b> is to enhance the delivery of compassionate, quality health care by providing opportunities for knowledge, skill and leadership development for all health science technology education students. HOSA students will help meet the growing needs of the health care community.</p>	Healthcare Science Technology	8,476
 <p>The mission of <b>Distributive Education Club of America (DECA)</b> is to enhance the co-curricular education of students with interests in Marketing, Management and Entrepreneurship. DECA helps students develop skills and competence for Marketing careers, build self esteem, experience leadership and practice community experience. <b>DECA membership in Georgia ranks 3rd in the nation.</b></p>	Marketing, Sales & Service	11,688
 <p><b>Georgia Career Student Association (GCSA)</b> helps students learn about the world of work and the employment skills they need to be successful. GCSA assists students in reaching their potential and becoming well-rounded individuals. Members develop confidence and maturity through meeting challenges and completing projects.</p>	Coordinated Career Academic Education	3,512

As the Georgia economy changes and expands, the Georgia Department of Education CTAE programs will continue to evolve to ensure that every student in Georgia graduates from high school with the academic skills, hands-on experience in real work environments, and intensive career guidance required to succeed in college, employment, and life-long learning. During FY 2011 and beyond CTAE has identified several areas for special ongoing focus:

- ▶ CTAE programs will be integrated with **STEM Georgia (Science, Technology, Engineering, and Math)**. STEM education encourages a curriculum driven by problem solving, discovery, exploratory learning, and student-centered development of ideas and solutions. The ultimate goal of the competencies (21st Century Skills) is to prepare students for the careers essential for the 21st Century workplace.
- ▶ **CTAE End-of-Pathway Assessments** will continue to be identified and implemented for all career pathways.
- ▶ **Non-Traditional Career Pathways** will be promoted based on enrollment data, including attracting female students to enroll in the career areas of Architecture, Construction, Communication and Transportation; Agriculture; and Engineering and Technology Education; and attracting male students to enroll in Family and Consumer Sciences, Education, and Healthcare Science.
- ▶ **Industry Certification** will be expanded to include additional Career Pathways.
- ▶ **Curriculum Guides** will be developed to support all Career Pathways.
- ▶ **In-Service Education Opportunities** will continue to provide high-level professional development for CTAE educators and counselors.
- ▶ **Opportunities for postsecondary education during high school** will continue and expand as an integrated part of CTAE Career Pathways.
- ▶ Georgia CTAE will reorganize the Peach State Career Pathways to align with the **16 Career Clusters and Pathways** recognized nationally: Agricultural & Natural Resources; Architecture & Construction; Arts, A/V Technology & Communications; Business & Administration; Education & Training; Finance; Government & Public Administration; Health Science; Hospitality & Tourism; Human Services; Information Technology; Law & Public Safety; Manufacturing; Marketing, Sales & Service; Scientific Research/Engineering; and Transportation, Distribution & Logistics.



**Agriculture**

**Georgia Program Concentrations**

Architecture, Construction, Communications & Transportation

**Healthcare Science Pathways**

- Biotechnology Research & Development
- Diagnostic Services
- Health Informatics
- Therapeutic Services—Emergency Services
- Therapeutic Services—Medical Services
- Therapeutic Services—Nursing
- Personal Care Services—Cosmetology
- Physical Medicine

**Agriculture Pathways**

- Agribusiness Management
- Agriscience
- Agricultural Mechanics
- Animal Science
- Forestry/Natural Resources
- Plant Science/Horticulture
- Veterinary Science

**Architecture, Construction, Communication, Transportation Pathways**

- Aircraft Support
- Architectural Drawing & Design
- Broadcast/Video Production
- Climate Control Systems Technology (HVACR)
- Collision Repair
- Construction
- Flight Operations
- Graphic Communications
- Graphic Design
- Marine Engine Technology
- Maritime Studies
- Metals Technology
- Transportation Logistical Operations (Ground/Marine)
- Transportation Logistical Operations (Ground/Marine)

Engineering & Technology

**Arts & Humanities**

**Arts & Humanities Pathways**

- Journalism
- Foreign Language
- Performing Arts
- Visual Arts

**Family & Consumer Science Pathways**

- Consumer Services
- Family, Community & Global Leadership
- Interior Design
- Nutrition & Food Science



**Engineering & Technology Pathways**

- Electronics
- Energy Systems
- Engineering
- Engineering Graphics & Design
- Manufacturing

**Culinary Arts**

**Culinary Arts Pathways**

- Culinary Arts

**Education Pathways**

- Early Childhood Education
- Teaching As A Profession

**Government & Public Safety Pathways**

- Firefighting
- Homeland Security & Emergency Services
- Law & Justice
- JROTC – Air Force, Army, Marine Corps, Navy

**Government & Public Safety**

**Business & Computer Science Pathways**

- Administrative/Information Support
- Computer Networking
- Computer Systems and Support Computing
- Financial Management—Accounting
- Financial Management—Services
- Interactive Media
- Small Business Development

**Business & Computer Science**

**Marketing Sales & Services Pathways**

- Fashion Marketing
- Marketing Communications & Promotion
- Marketing & Management
- Sports & Entertainment Marketing
- Travel Marketing & Lodging Management

**Marketing Sales & Services**



*Dr. John D. Barge, State School Superintendent*  
*"Making Education Work for All Georgians"*

# CTAE

## Career, Technical and Agricultural Education

Georgia Career, Technical and Agricultural Education

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