



Student Guidance Handbook

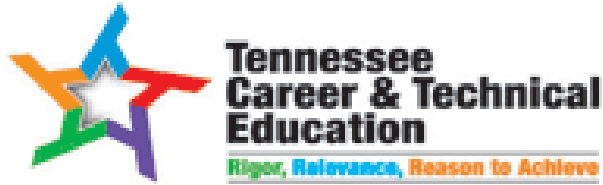


**Tennessee
Career & Technical
Education**

**Students
Parents
Counselors
Principals**

Programs of Study

The Road to Success



Career Clusters and Programs of Study

Tennessee's secondary Career & Technical Education (CTE) Division has adopted the National Career Clusters model of 16 career clusters and has developed programs of study within these clusters. Technological advances and global competition have transformed the nature of work. Tomorrow's jobs will require more knowledge, better skills, and more flexible workers than ever before. Tomorrow's workers must be prepared to change jobs and careers several times, continually updating their knowledge and skills. One key approach to this goal is to provide students with relevant contexts for learning. Career clusters link what students learn in school with the knowledge and skills they need for success in college and careers.

Career clusters identify programs of study from secondary school to technology centers, community colleges, four-year colleges, graduate schools, and the workplace, so students can learn in school what they can do in the future. This connection to future goals motivates students to work harder and enroll in more rigorous courses.

The Cluster and Programs of Study align course standards with the 16 career clusters. Stakeholders from education, business, and industry helped develop programs of study that transition into post-secondary education and career employment. The state has developed over 70 programs of study within the 16 National Career Clusters.

The clusters embrace the state's major economic areas to better prepare students for success after high school into post-secondary education and high-skill, high-wage, and/or high-demand careers. New Carl Perkins IV legislation mandates Career Cluster development.

NATIONAL DEFINITIONS

Introduction

When we talk about the States' Career Clusters Initiative with states and local schools, we talk about the need to have some common terms and definitions that are used consistently throughout the state or school. The terms below are used on the state and national level.

1. **Career Clusters:** In their simplest form, Career Clusters are groupings of occupations/career specialties used as an organizing tool for curriculum design and instruction. Occupations/career specialties are grouped into the Career Clusters based on the fact that they require a set of common knowledge and skills for career success. The Knowledge and Skills represented by Career Clusters prepare learners for a full range of occupations/career specialties, focusing on the holistic, polished blend of technical, academic and employability knowledge and skills. This approach enhances the more traditional approach to career and technical education in which instruction may focus on one or two occupations and emphasize only specific occupational skills.
2. **Program of Study (curriculum framework):** A program of study is a sequence of instruction (based on recommended standards and knowledge and skills) consisting of coursework, co-curricular activities, work-site learning, service learning and other learning experiences. This sequence of instruction provides preparation for a career.
3. **Personal Plan of Study:** A Personal Plan of Study is an individual learner's scope and sequence of coursework, co-curricular activities, worksite learning, service learning, and other learning experiences based upon his/her chosen career goals and aspirations. The Plan of Study should be revisited periodically (at least on an annual basis) to make adjustments as the interests and career aspirations of a learner change. This is a flexible resource designed to change in concert with the interests and needs of the learner. © 2010, States' Career Clusters Initiative.

Tennessee *Minimum* High School Graduation Requirements

Requirements for Students Beginning High School in Fall 2009	
TOTAL CREDITS REQUIRED: 22	
MATH: 4 Credits Including Algebra I, II, Geometry, and a fourth higher level math course	SCIENCE: 3 Credits Including Biology, Chemistry or Physics, and a third lab course
ENGLISH: 4 Credits	SOCIAL STUDIES: 3 Credits
PHYSICAL EDUCATION AND WELLNESS: 1.5 Credits	PERSONAL FINANCE: .5 Credits
FOREIGN LANGUAGE: 2 Credits FINE ARTS: 1 Credit May be waived for students not going to a university to expand and enhance the elective focus	ELECTIVE FOCUS: 3 Credits Math and Science, Career and Technical Education, Fine Arts, Humanities, Advanced Placement (AP) or International Baccalaureate (IB)

Personal Plan of Study

Name of Student

Name of School

Tennessee *Minimum* High School Graduation Requirements

Requirements for Students Beginning High School in Fall 2009

TOTAL CREDITS REQUIRED: 22

MATH: 4 Credits
 SCIENCE: 3 Credits
 ENGLISH: 4 Credits
 SOCIAL STUDIES: 3 Credits

PHYSICAL EDUCATION & WELLNESS: 1.5 Credits
 FOREIGN LANGUAGE: 2 Credits
 PERSONAL FINANCE: .5 Credits
 FINE ARTS: 1 Credit
ELECTIVE FOCUS: 3 Credits

Grade 9		Grade 10		Grade 11		Grade 12	
Course Title	Credits	Course Title	Credits	Course Title	Credits	Course Title	Credits
1.		1.		1.		1.	
2.		2.		2.		2.	
3.		3.		3.		3.	
4.		4.		4.		4.	
5.		5.		5.		5.	
6.		6.		6.		6.	
7.		7.		7.		7.	
8.		8.		8.		8.	
9.		9.		9.		9.	
10.		10.		10.		10.	
11.		11.		11.		11.	
Total Credits		Total Credits		Total Credits		Total Credits	

Signatures			
Student	Student	Student	Student
Parent	Parent	Parent	Parent
Counselor	Counselor	Counselor	Counselor
Annual Review Date	Annual Review Date	Annual Review Date	Annual Review Date

Agricultural Education 2009-2015 Career Clusters & Programs of Study

Career Cluster	Program of Study	CTE Coursework			
		9 th grade	10 th grade	11 th grade	12 th grade
Agriculture, Food, and Natural Resources	Animal Systems – Pre-Veterinary	Agriscience* 5171 or Principles of Agricultural Sciences* 5154	Small Animal Care 5172	Horse Science 5168	Veterinary Science 5176
	Animal Systems – Production Animals	Agriscience* 5171 or Principles of Agricultural Sciences* 5154	Advance Principles of Agriculture 5155	Livestock Management 5177	Animal Biotechnology 5186
	Power, Structures and Technical Systems	Agriscience* 5171 or Principles of Agricultural Sciences* 5154	Agriculture Mechanics and Maintenance 5151	Agricultural Power and Equipment 5152	Agricultural Engineering 5178
	Agri-Business, Food Products and Process Systems	Agriscience* 5171 or Principles of Agricultural Sciences* 5154	Leadership Communications 5169	Agriculture Sales and Marketing 5153	Agricultural Business/Finance 5150 or Agricultural Economics** 5183
	Environmental and Natural Resources Systems	Agriscience* 5171 or Principles of Agricultural Sciences* 5154	Forestry Management 5165	Wildlife Management 5174	Plant and Soil Science 5161
	Plant Systems – Landscaping and Turf Science	Agriscience* 5171 or Principles of Horticultural Sciences* 5184	Landscaping & Turf Management 5163	Greenhouse Management 5167	Plant Biotechnology 5175
	Plant Systems – Horticulture Production	Agriscience* 5171 or Principles of Horticultural Sciences* 5184	Aqua/Hydro 5159 or Floral Design 5164**	Greenhouse Management 5167	Plant Biotechnology 5175
	Agricultural Education Systems ***	Agriscience* 5171 or Principles of Agricultural Sciences* 5154	Advance Principles of Agriculture 5155	Leadership Communications 5169	Plant and Soil Science **** 5161
Architecture and Construction	Landscape Design	Agriscience* 5171 or Principles of Horticultural Sciences* 5184	Landscaping & Turf Management 5163	CAD 3823 5788	Greenhouse Management 5167

* Indicates that credit can be earned in either one or the other course, not both. Agriscience satisfies one laboratory science credit in the area of life sciences required for graduation & college entrance and as a focus area and concentrator course.

** Requires a Special Program of Study Request to be included in an approved Program of Study.

*** System for students pursuing a career in teaching agricultural education or extension education.

**** Can select a different Dual Credit/Enrollment capstone course as a Special Program of Study. Can select from: Veterinary Science, Small Animal Care, Livestock Management, Agricultural Engineering, Agricultural Business/Finance, Agricultural Economics, or Greenhouse Management. (Note: Leadership Communication is already included in Program of Study.)

**Business Technology Education
2009 - 2012 Career Clusters & Programs of Studies**

Career Cluster	Program of Study	CTE Coursework			
		9 th grade	10 th grade	11 th grade	12 th grade
Business, Management, and Administration	Human Resources	Keyboarding 3710	eBusiness Communication 3704	Interactive Multimedia Presentation 3746	Integrated Input Technology 3730
	Business Management	Personal Finance 3766 Financial Planning 3717	Accounting I 3779	Business Management 3707	Virtual Enterprise International 3757 HQ 3762 CTE
	Business Financial Management and Accounting	Computer Applications 3718	Accounting I 3779	Accounting II 3780	Business Management 3707
	Business Analysis	Personal Finance 3766 Financial Planning 3717	Accounting I 3779	Business Economics 3755 CTE 3765 HQ	Banking and Finance 3756
	Administrative And Information Support	Keyboarding 3710 or Keyboarding Document Formatting 3775	Keyboarding/ Document Layout/Design 3727 or Database Design/ Management 3735	eBusiness Communication 3704	Administrative Management 3737
	Communications Development	Keyboarding/ Document Layout and Design 3727	eBusiness Communication 3704	Administrative Management 3737	Interactive Multimedia Presentation 3746
Finance	Financial Planning	Computer Applications 3718	Personal Finance 3766 Financial Planning 3717	Business Economics 3755 HQ 3765 CTE Or American Business Legal Systems 3719 HQ 3726 CTE	Banking and Finance 3756
	Banking and Finance	Computer Applications 3718	Accounting I 3779	Personal Finance 3766 Financial Planning 3717	Banking and Finance 3756

**Business Technology Education
2009 - 2012 Career Clusters & Programs of Studies**

Career Cluster	Program of Study	CTE Coursework			
		9 th grade	10 th grade	11 th grade	12 th grade
Government and Public Administration	Public/ Nonprofit Management and Administration	Personal Finance 3766 Financial Planning 3717	eBusiness Communication 3704	Administrative Management 3737	Business Management 3707
Information Technology	Electronic Publishing	Keyboarding/ Document Layout and Design 3727	eBusiness Communication 3704	Desktop Publishing 3741	Career Connection 3716
	Interactive Multimedia	Computer Applications 3718	Interactive Multimedia Presentation 3746	Desktop Publishing 3741	Integrated Input Technology 3730
	Networking Systems	Information Technology Foundations 3764	Computer Operating Systems/Hardware 3763	Networking Essentials 3778	Cabling Technology 5788
	Web Design	Computer Applications 3718	Website Foundations 3758	Webpage Design – Site Designer 3759	Web Design – eCommerce 3760
	Web/ Multimedia Management/ Webmaster	Computer Applications 3718	Interactive Multimedia Presentation 3746	Web Design Essentials 3768	Web Design Applications 3769
Law, Public Safety, Corrections & Security	Security and Protective Services	Information Technology Foundations 3764	Computer Operating Systems/ Hardware 3763	Networking Essentials 3778	Cabling Technology 5758

**Family & Consumer Sciences
2009-2015 Career Clusters & Programs of Study**

Career Cluster	Program of Study	CTE Coursework			
		9 th grade	10 th grade	11 th grade	12 th grade
Architecture & Construction	Interior Design	FACS* 5603 or PACE** 5624	Interior Design 5626	Housing 5614	Life Connections 5623
Arts, A/V Technology, & Communication	Fashion Design	FACS* 5603 or PACE** 5624	Fashion Design & Merchandising 5621	Textiles and Apparel 5619	Life Connections 5623
Education and Training	Teaching Training Services	FACS* 5603 or PACE** 5624	Child and Lifespan Development 5625	Life Connections 5623	Teaching as a Profession 5622
	Teaching Training Services – Pre K- Early Childhood Education	FACS* 5603 or PACE** 5624	Early Childhood Education Careers I 5650	Early Childhood Education Careers II 5660	Early Childhood Education Careers III 5661
Hospitality and Tourism	Food and Beverage Services	FACS* 5603 or PACE** 5624	Culinary Arts I 5656	Culinary Arts II 5657	Culinary Arts III 5658
Human Services	Consumer Services	FACS* 5603 or PACE** 5624	Consumer Economics 5602 HQ 5605 CTE	Personal Finance 5613	Life Connections 5623
	Counseling and Mental Health Services	FACS* 5603 or PACE** 5624	Child and Lifespan Development 5625	Family and Parenting 5606	Life Connections 5623
	Early Childhood Development and Services	FACS* 5603 or PACE** 5624	Early Childhood Education Careers I 5650	Early Childhood Education Careers II 5660	Early Childhood Education Careers III 5661
	Family and Community Services	FACS* 5603 or PACE** 5624	Child and Lifespan Development 5625	Nutrition and Foods 5609	Life Connections 5623
	Nutritional Counseling	FACS* 5603 or PACE** 5624	Nutrition and Foods 5609	Nutrition Science 5615 HQ 5616 HQ 5617 CTE 5618 CTE	Child and Lifespan Development 5625

* FACS Family and Consumer Sciences Education foundation course

** PACE . . . Personal, Academic and Career Excellence, a freshman transition course structured for 9th grade only.

**Health Science Education
2009-2012 Career Clusters & Programs of Study**

Career Cluster	Program of Study	CTE Coursework			
		9 th grade	10 th grade	11 th grade	12 th grade
Health Science	Biotechnology Research and Development	Health Science Education 5504	Diagnostic Medicine 5511	Anatomy & Physiology 5509 HQ 5512 CTE	Forensic Science 5514
	Diagnostic Services	Health Science Education 5504	Rehabilitative Services 5503	Diagnostic Medicine 5511	Clinical Internship 5501
	Health Informatics	Health Science Education 5504	Diagnostic Medicine 5511	Health Informatics 5505	Clinical Internship 5501
	Support Services	Health Science Education 5504	Medical Therapeutics 5506	Support Services 5500	Clinical Internship 5501
	Therapeutic Services	Health Science Education 5504	Medical Therapeutics 5506	Anatomy and Physiology 5509 HQ 5512 CTE	Nursing Education 5507
	Therapeutic Emergency Services	Health Science Education 5504	Medical Therapeutics 5506	Anatomy & Physiology 5509 HQ 5512 CTE	Emergency Medical Services 5510

**Marketing Education
2009-2012 Career Clusters and Programs of Study**

Career Cluster	Program of Studies	CTE Coursework			
		9 th Grade	10 th Grade	11 th Grade	12 th Grade
Hospitality and Tourism	Hospitality Management and Lodging Services	Foundations of Hospitality and Tourism 5025 5380	Marketing I 5000 HQ 5030 CTE	Travel and Tourism 5003	Hospitality Management 5026
	Travel and Tourism	Foundations of Hospitality and Tourism 5025 5380	Marketing I 5000 HQ 5030 CTE	Travel and Tourism 5003	Services Marketing 5004 HQ 5034 CTE
	Recreation, Attractions, Sports and Entertainment	Exploration in Marketing 5014	Marketing I 5000 HQ 5030 CTE	Travel and Tourism 5003	Sports and Entertainment 5023
Marketing, Sales and Services	Channel Management	Exploration in Marketing 5014	Marketing I 5000 HQ 5030 CTE	Wholesale Logistics 5020 HQ 5050 CTE	Retail Operations 5022 HQ 5052 CTE
	Marketing Communication	Exploration in Marketing 5014	Marketing I 5000 HQ 5030 CTE	Marketing II 5001	Advertising and Public Relations 5016
	Marketing Management	Exploration in Marketing 5014	Marketing I 5000 HQ 5030 CTE	Marketing II 5001	Sales Management 5018
	Marketing Research	Exploration in Marketing 5014	Marketing I 5000 HQ 5030 CTE	Marketing II 5001	Market Research and Analysis 5017
	Merchandising	Exploration in Marketing 5014	Marketing I 5000 HQ 5030 CTE	Marketing II 5001	Retail Operations 5022 HQ 5052 CTE
	Selling and Sales Management	Exploration in Marketing 5014	Marketing I 5000 HQ 5030 CTE	Sales Management 5018	Service Marketing 5004 HQ 5034 CTE
	Financial Services Marketing	Exploration in Marketing 5014	Marketing I 5000 HQ 5030 CTE	Financial Services Marketing 5006 HQ 5030 CTE	Personal Finance & Building Wealth 5037 Or Personal Finance 5038

**Technology Engineering Education
2009-2015 Career Clusters & Programs of Study**

Cluster	Program of Study	CTE Coursework			
		9 th Grade	10 th Grade	11 th Grade	12 th Grade
Science, Technology, Engineering, and Mathematics	Engineering and Technology	Foundations of Technology 3835	Technological Issues 3836	Advanced Design Applications 3838	Engineering Design 3839
	Science And Mathematics	Foundations of Technology 3835	Technological Issues 3836	Advanced Technological Applications 3837	Problems and Solutions in Technology 3813
Information Technology	Web Design	Foundations of Technology 3835	Website Foundations 3815	Webpage Design – Site Designer 3816	Web Design – eCommerce 3817
Manufacturing	Production Design	Career Management Success (CMS) 5701	Computer Aided Drafting 3823	Advanced Computer Aided Drafting 3824	Principles of Engineering 5784 (Optional)
	Engineering	Principles of Engineering 3820	Introduction to Engineering Design 5793	Digital Electronics 3821 or Computer Integrated Manufacturing 5794	Engineering Design and Development 5798
	Production Design	Principles of Manufacturing 3818	Programming and Logic 5780	Principles of Machining and Manufacturing 3819	Manufacturing Applications 3827

**Trade and Industry Education
2009-2012 Career Clusters & Programs of Study**

Career Cluster	Program of Study	CTE Coursework			
		9 th grade	10 th grade	11 th grade	12 th grade
Architecture & Construction	Carpentry	Career Management Success (CMS) 5701	Construction Core 5730	Carpentry I 5731	Carpentry II 5732
	Electrical	CMS 5701	Construction Core 5730	Electrical I 5733	Electrical II 5734
	HVAC/R	CMS 5701	Construction Core 5730	HVAC/R I 5741	HVAC/R II 5742
	Masonry/Concrete	CMS 5701	Construction Core 5730	Masonry I 5735 or Concrete I 5737	Masonry II 5736 or Concrete II 5738
	Plumbing	CMS 5701	Construction Core 5730	Plumbing I 5739	Plumbing II 5740
	Welding	CMS 5701	Construction Core 5730	Basic Principles of Welding 5786	Advanced Welding Applications 5787
	Design & Preconstruction	CMS 5701	Computer Aided Drafting 5788	Advanced Computer Aided Drafting 5789	Principles of Engineering 5784 (Optional)
Arts, A/V Technology, & Communication	Audio Technology	CMS 5701	Audio Technology I 5770	Audio Technology II 5771	
	Design Communications	CMS 5701	Visual Communications 5759	Digital Design & Imaging 5762	Digital Design & Imaging 5762
	Graphic Communications	CMS 5701	Visual Communications 5759	Graphic Communications I 5760	Graphic Communications II 5761
	Journalism & Broadcasting	CMS 5701	Media Concepts 5763	Electronic Media Production 5764	Electronic Media Management and Operations 5765
Government & Public Administration	National Security	CMS 5701	Criminal Justice I 5330	Criminal Justice II 5331	Criminal Justice III 5342
Hospitality and Tourism	Food and Beverage Services	CMS 5701	Culinary Arts I 5381	Culinary Arts II 5382	Culinary Arts III 5383
Human Services	Personal Care Services	CMS 5701	Principles of Cosmetology 5338	Design Principles of Cosmetology 5339	Chemistry of Cosmetology 5340
Information Technology	Networking Systems	Information Technology Foundations 5755	Computer Operating Systems and Hardware 5756	Networking 5757	Cabling Technology 5758

**Trade and Industry Education
2009-2012 Career Clusters & Programs of Study**

Career Cluster	Program of Study	CTE Coursework			
		9 th grade	10 th grade	11 th grade	12 th grade
Information Technology	Web Design		Website I – Foundations 5766	Web Page Design II – Site Designer 5767	Web Page Design III – eCommerce 5769
Law, Public Safety, Corrections and Security	Law Enforcement Services	CMS 5701	Criminal Justice I 5330	Criminal Justice II 5331	Criminal Justice III 5342
	Security & Protective Services	Information Technology Foundations 5755	Computer Operating Systems and Hardware 5756	Networking 5757	Cabling Technology 5758
Manufacturing	Engineering	Principles of Engineering 5791	Introduction to Engineering Design 5793	Digital Electronics 5792 or Computer Integrated Manufacturing 5794	Engineering Design and Development 5798
	Operations & Maintenance	CMS 5701	Principles of Manufacturing 5781	Basic Principles of Welding 5786	Advanced Welding Applications 5787
	Precision Productions	Principles of Manufacturing 5781	Programming and Logic 5780	Principles of Machining and Manufacturing 5782	Manufacturing Applications 5785
	Production Design	CMS 5701	Computer Aided Drafting 5788	Advanced Computer Aided Drafting 5789	Principles of Engineering 5784 (Optional)
Transportation	Automotive Technology	Transportation Core 5702	Brake Systems 5712	Suspension & Steering 5710	Electrical/ Electronics 5713
	Aviation Flight	CMS 5701	Transportation Core 5702	Introduction to Aerospace 5719	Theory of Flight 5720
	Aviation Maintenance	CMS 5701	Transportation Core 5702	Aviation Maintenance I 5703	Aviation Maintenance II 5704
	Collision Repair Technology	Transportation Core 5702	Collision Repair: Non-Structural 5707	Collision Repair: Structural 5708	Collision Repair: Painting and Refinishing 5709
	Diesel Technology	Transportation Core 5702	Diesel Preventative Maintenance 5714	Diesel Suspension & Steering 5716 or Brake Systems 5715	Diesel Electrical/ Electronics 5717
	Leisure Craft/Small Engine Technology	CMS 5701	Transportation Core 5702	Leisure Craft/ Small Engines 5705	Leisure Craft/ Small Engine Performance 5706

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