

The Common Career
Technical Core
Alignment Study
State of New Jersey

The findings in this report are based on research and analysis independently conducted by Global Skills X-change (GSX). The results of the Common Career Technical Core (CCTC) Alignment Study are the sole expression of GSX based on analysis of the collected data. Alignment study results do not reflect the opinions or views of The National Association of State Directors of Career Technical Education Consortium (NASDCTEc).

GSX specializes in designing workforce education strategies and processes, which allow customers to meet their specific performance goals. Since 2003, GSX has supported clients in the federal, private, and education sectors with the development of customized tools in competency modeling, assessment and certification development, skill standards alignment, evaluation and training. GSX provides solutions through a flexible engagement process combining consulting expertise with the operational capacity to implement the developed strategies and tools.

NASDCTEc was established in 1920 to represent the state and territory heads of secondary, postsecondary and adult Career Technical Education (CTE) across the nation. NASDCTEc, through leadership, advocacy and partnerships, aims to support an innovative CTE system that prepares individuals to succeed in education and their careers, and poises the United States to flourish in a global, dynamic economy. In cooperation with the National Career Technical Education Foundation (NCTEF), NASDCTEc provides leadership and support for the National Career Clusters[®] Framework to deliver high-quality CTE programs through improved curriculum design and instruction. The ultimate goal: To elevate student success in college and career while strengthening the economy and driving America's competitiveness worldwide.

Copyright © 2013, National Association of State Directors of Career Technical Education Consortium.

ALIGNMENT RESULTS

The New Jersey Core Curriculum Content Standards (CCCS) describe what secondary students should know and be able to do in nine content areas, the ninth of which is 21st Century Life and Careers. This content area includes four major standards that provide local school districts with the critical information they need to systematically integrate 21st Century Life and Career Skills across the K-12 curriculum and CTE programs. The standards are:

- Standard 9.1 – 21st Century Life and Career Skills describes knowledge and skills that prepare all students to fully engage in civic and work life.
- Standard 9.2 – Personal Financial Literacy describes knowledge and skills that prepare all students for personal and civic financial literacy.
- Standard 9.3 – Career Awareness, Exploration, and Preparation describes knowledge and skills that prepare all students for career pursuits and lifelong learning.
- Standard 9.4 – Career and Technical Education describes knowledge and skills that prepare CTE students for postsecondary education, training, and employment in a chosen career pathway.

Each standard is divided into a number of *strands* that, in turn, are further subdivided into *content statements*. Finally, each *content statement* is further defined in terms of *cumulative progress indicators*. Standard 9.4, for example, consists of 16 strands based on the 16 Career Clusters in The National Career Clusters® Framework, each of which have embedded the Career Ready Practices. Each strand lists *content statements* that are either applicable to the whole Career Cluster or are Career Pathway specific.

Finally, the Core Curriculum Content Standards present *cumulative progress indicators* for each content statement. By doing so, the Core Curriculum Content Standards provide local school districts clear and specific benchmarks for student achievement upon completion of a secondary CTE program. For the purposes of this study, the *cumulative progress indicators* were used to conduct the alignment.

The Alignment Results by Career Cluster graph on the next page presents New Jersey's secondary alignment results. The section following this graph describes the results in detail.

New Jersey does not have formally adopted statewide postsecondary CTE standards; thus, no alignment was conducted.

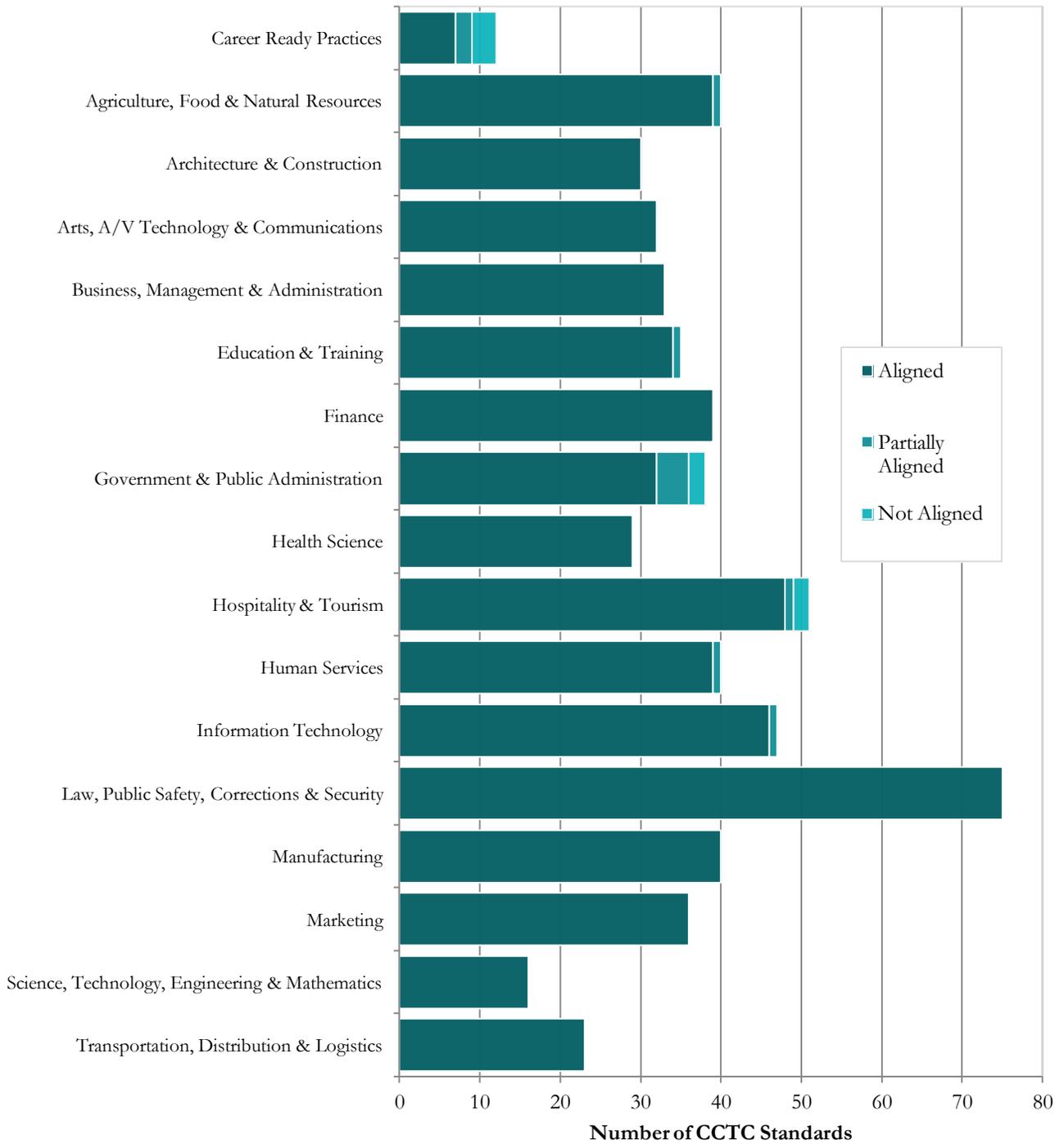
ALIGNMENT DEFINITIONS

Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.

Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.

Not Aligned indicates that the CCTC standard listed is not covered by the state standards.

Secondary Alignment Results by Career Cluster[®]



Secondary Alignment Results by Career Cluster

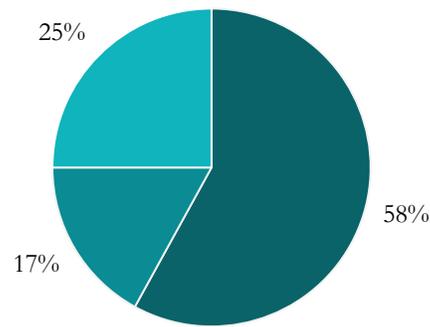
CAREER CLUSTER	# OF CCTC STANDARDS ADDRESSED	ALIGNED	PARTIALLY ALIGNED	NOT ALIGNED
Career Ready Practices	9/12	58%	17%	25%
Agriculture, Food & Natural Resources	40/40	98%	3%	0%
Architecture & Construction	30/30	100%	0%	0%
Arts, A/V Technology & Communications	32/32	100%	0%	0%
Business, Management & Administration	33/33	100%	0%	0%
Education & Training	35/35	97%	3%	0%
Finance	39/39	100%	0%	0%
Government & Public Administration	36/38	84%	11%	5%
Health Science	29/29	100%	0%	0%
Hospitality & Tourism	49/51	94%	2%	4%
Human Services	40/40	98%	3%	0%
Information Technology	47/47	98%	2%	0%
Law, Public Safety, Corrections & Security	75/75	100%	0%	0%
Manufacturing	40/40	100%	0%	0%
Marketing	36/36	100%	0%	0%
Science, Technology, Engineering & Mathematics	16/16	100%	0%	0%
Transportation, Distribution & Logistics	23/23	100%	0%	0%

See Appendix A for detailed results on the degree to which the individual CCTC standards are represented in New Jersey's secondary standards.

APPENDIX A: Full Secondary Alignment Results Tables Presented by Career Cluster[®]

DESCRIPTION

The Career Ready Practices component of the CCTC provides a framework for the developmental experiences necessary to becoming career ready; experiences that can be “practiced” using many different approaches in a variety of settings. Students refine these practices throughout their full continuum of learning: through their journey in school, college, the workforce and when they return to advance their education.



FINDINGS

New Jersey's standards either partially or fully address nine of the 12 CCTC Career

Ready Practices standards. The results show that 58 percent of the content standards were aligned with the New Jersey secondary CTE standards, 17 percent were partially aligned, and 25 percent were not aligned.

■ Aligned ■ Partially Aligned ■ Not Aligned

ALIGNMENT OF THE CAREER READY PRACTICES

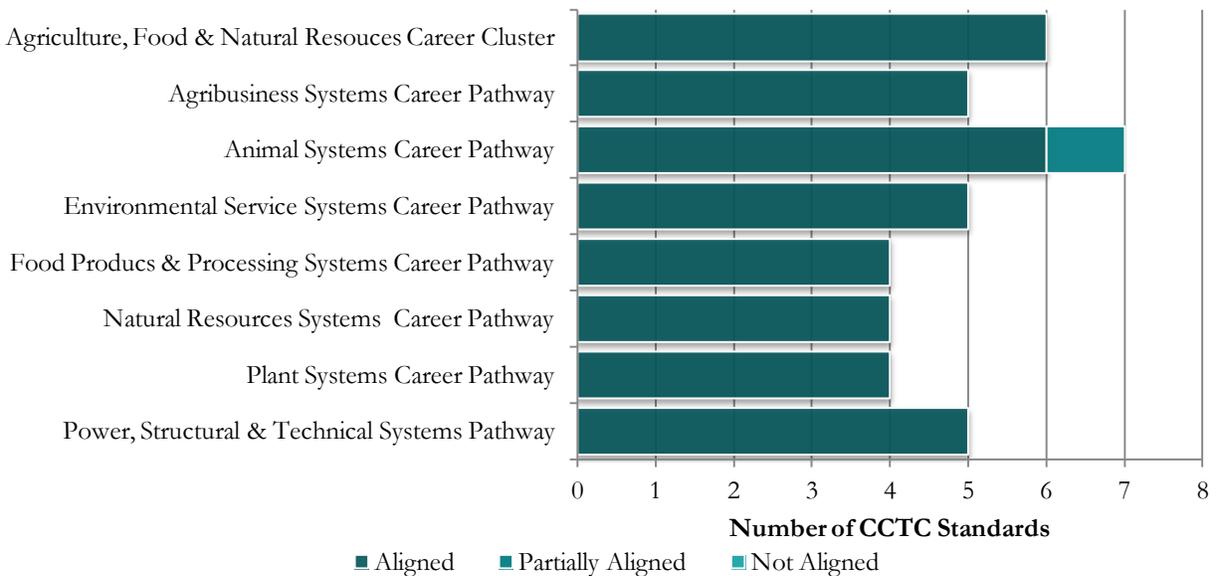
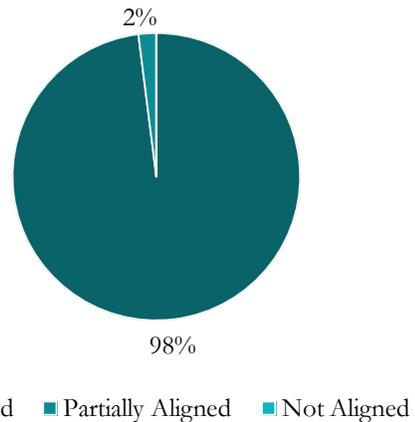
Act as a responsible and contributing citizen and employee	Partially Aligned
Apply appropriate academic and technical skills	Aligned
Attend to personal health and financial well-being	Aligned
Communicate clearly, effectively and with reason	Aligned
Consider the environmental, social and economic impacts of decisions	Aligned
Demonstrate creativity and innovation	Not Aligned
Employ valid and reliable research strategies	Aligned
Utilize critical thinking to make sense of problems and persevere in solving them.	Aligned
Model integrity, ethical leadership and effective management	Not Aligned
Plan education and career path aligned to personal goals	Aligned
Use technology to enhance productivity	Partially Aligned
Work productively in teams while using cultural/global competence	Not Aligned

DESCRIPTION

The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

FINDINGS

New Jersey's standards either partially or fully address 40 of the 40 CCTC standards in this Career Cluster. The results show that 98 percent of the content standards were aligned with the New Jersey secondary CTE standards and three percent were partially aligned.



ALIGNMENT OF AGRICULTURE, FOOD & NATURAL RESOURCES

Analyze how issues, trends, technologies and public policies impact systems in the Agriculture, Food & Natural Resources Career Cluster.	Aligned
Evaluate the nature and scope of the Agriculture, Food & Natural Resources Career Cluster and the role agriculture, food and natural resources (AFNR) play in society and the economy.	Aligned
Examine and summarize importance of health, safety and environmental management systems in AFNR organizations.	Aligned
Demonstrate stewardship of natural resources in AFNR activities.	Aligned
Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources Career Pathways.	Aligned
Analyze the interaction among ANFR systems in the production, processing and management of food, fiber and fuel and sustainable use of natural resources.	Aligned
Agribusiness Systems Career Pathway (AG-BIZ)	
Apply management planning principles in AFNR business enterprises.	Aligned
Use record keeping to accomplish AFNR business objectives, manage budgets, and comply with laws and regulations.	Aligned
Manage cash budgets, credit budgets and credit for an AFNR business using generally accepted accounting principles.	Aligned
Develop a business plan for an AFNR enterprise or business unit.	Aligned
Use sales and marketing principles common to agribusiness systems to accomplish AFNR business objectives.	Aligned
Animal Systems Career Pathway (AG-ANI)	
Analyze historic and current trends impacting the animal systems industry.	Aligned
Utilize best practice protocols for husbandry and welfare based upon animal behaviors.	Aligned
Design and provide proper animal nutrition given desired outcomes for performance, development, reproduction and/or economic production.	Aligned
Apply principles of animal reproduction given desired outcomes for performance, development and/or economic production.	Aligned
Evaluate environmental factors affecting animal performance and implement procedures for enhancing performance and animal health.	Aligned
Classify, evaluate and select animals based on anatomical and physiological characteristics.	Partially Aligned
Apply principles of effective animal health care.	Aligned
Environmental Service Systems Career Pathway (AG-ENV)	

Use analytic procedures and instruments to manage environmental systems activities.	Aligned
Evaluate the impact of public policies and regulations on environmental services facility operations.	Aligned
Develop proposed solutions to environmental issues, problems and applications using scientific principles of meteorology, soil science, hydrology, microbiology, chemistry and ecology.	Aligned
Demonstrate the operation of environmental service systems (e.g., pollution control, water treatment, wastewater treatment, solid waste management and energy conservation).	Aligned
Use tools, equipment, machinery and technology common to tasks in environmental system services.	Aligned
Food Products & Processing Systems Career Pathway (AG-FD)	
Develop and implement procedures to ensure safety, sanitation and quality in food product and processing facilities.	Aligned
Apply principles of nutrition, biology, microbiology, chemistry and human behavior to development of food products.	Aligned
Select and process food products for storage, distribution and consumption.	Aligned
Explain the scope of the food industry and the historical and current developments of food products and processing.	Aligned
Natural Resources Systems Career Pathway (AG-NR)	
Plan and conduct natural resource management activities that apply logical, reasoned and scientifically based solutions to natural resource issues and goals.	Aligned
Analyze interrelationships between natural resources and humans needed to manage natural resource systems.	Aligned
Develop plans to ensure responsible and sustainable production and processing of natural resources.	Aligned
Demonstrate responsible control and management procedures and techniques to protect or maintain natural resources.	Aligned
Plant Systems Career Pathway (AG-PL)	
Develop and implement a crop management plan for a given production goal that accounts for environmental factors.	Aligned
Apply the principles of classification, plant anatomy and plant physiology to plant production and management.	Aligned
Propagate, culture, and harvest plants and plant products based on current industry standards.	Aligned
Apply principles of design in plant systems to enhance an environment (e.g., floral, forest, landscape and farm).	Aligned
Power, Structural & Technical Systems Career Pathway (AG-PST)	

Apply physical science principles and engineering applications related to mechanical equipment, structures and biological systems to solve problems and improve performance in AFNR power, structural and technical systems.	Aligned
Operate and maintain mechanical equipment related to AFNR power, structural and technical systems.	Aligned
Service and repair mechanical equipment and power systems used in AFNR power, structural and technical systems.	Aligned
Plan, build and maintain AFNR structures.	Aligned
Use control, monitoring, geospatial and other technologies in AFNR power, structural and technical systems.	Aligned

Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.

Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.

Not Aligned indicates that the CCTC standard listed is not covered by the state standards.



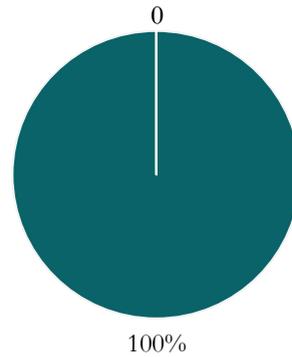
Architecture & Construction

DESCRIPTION

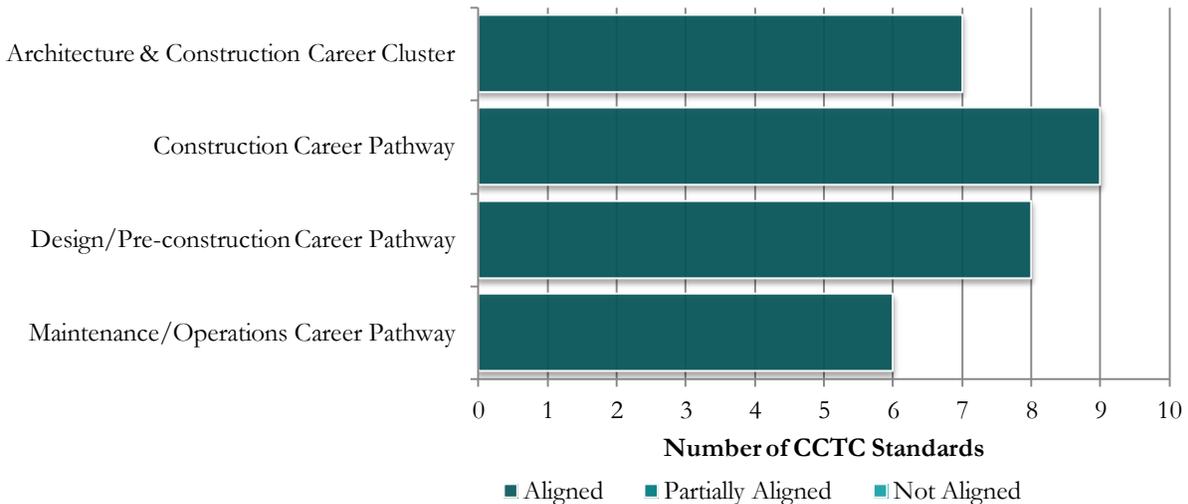
Careers in designing, planning, managing, building and maintaining the built environment.

FINDINGS

New Jersey's standards either partially or fully address 32 of the 32 CCTC standards in this Career Cluster. The results show that 100 percent of the content standards were aligned with the New Jersey secondary CTE standards.



■ Aligned ■ Partially Aligned ■ Not Aligned



ALIGNMENT OF ARCHITECTURE & CONSTRUCTION

Use vocabulary, symbols and formulas commonly used in design and construction.	Aligned
Use architecture and construction skills to create and manage a project.	Aligned
Comply with regulations and applicable codes to establish and manage a legal and safe workplace/jobsite.	Aligned
Understand the nature and scope of the Architecture & Construction Career Cluster and the role architecture and construction play in society and the economy.	Aligned
Understand the roles and responsibilities among trades and professions, including labor/management relationships.	Aligned
Read, interpret and use technical drawings, documents and specifications to plan a project.	Aligned
Evaluate a wide range of career pathway opportunities for success in architecture and construction careers.	Aligned
Construction Career Pathway (AC-CST)	
Understand contractual relationships with all parties involved in the building process to ensure successful build of a project.	Aligned
Understand approval procedures to ensure effective flow of information in the construction process.	Aligned
Understand and implement testing and inspection procedures to ensure successful completion of a construction project.	Aligned
Understand the purpose of scheduling as it relates to the successful completion of a construction project.	Aligned
Understand and apply practices and procedures required to maintain jobsite safety.	Aligned
Manage relationships with internal and external parties to successfully complete construction projects.	Aligned
Compare and contrast the building systems and components for a given project.	Aligned
Demonstrate the construction crafts required for each phase of a given project.	Aligned
Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.	Aligned
Design/Pre-construction Career Pathway (AC-DES)	
Justify design solutions through the use of research documentation and analysis of data.	Aligned
Use effective communication skills and strategies (listening, speaking, reading,	Aligned

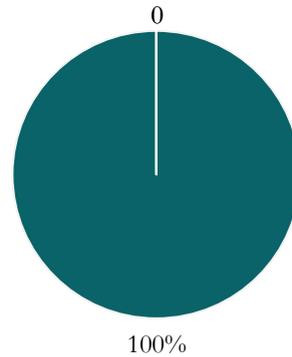
writing and graphic communications) to work with clients and colleagues.	
Understand the integral systems that impact the design of buildings and structures.	Aligned
Apply building codes, laws and rules in the design and construction of projects.	Aligned
Identify the diversity of needs, values and social patterns in project design, including accessibility standards, to appropriately meet client needs.	Aligned
Apply the techniques and skills of modern drafting, design, engineering and construction to projects.	Aligned
Employ appropriate representational media to communicate concepts and design.	Aligned
Apply principles, conventions, standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies for project design.	Aligned
Maintenance/Operations Career Pathway (AC-MO)	
Recognize and employ universal construction signs and symbols to function safely in the workplace.	Aligned
Use troubleshooting procedures when solving a maintenance problem to maintain buildings and structures.	Aligned
Apply construction skills when repairing, restoring or renovating existing structures.	Aligned
Determine work required to repair or renovate an existing building or structure.	Aligned
Plan and practice preventative maintenance activities to service existing structures.	Aligned
Maintain and inspect building systems to achieve safe and efficient operation of facilities.	Aligned
<p>Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.</p> <p>Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.</p> <p>Not Aligned indicates that the CCTC standard listed is not covered by the state standards.</p>	

DESCRIPTION

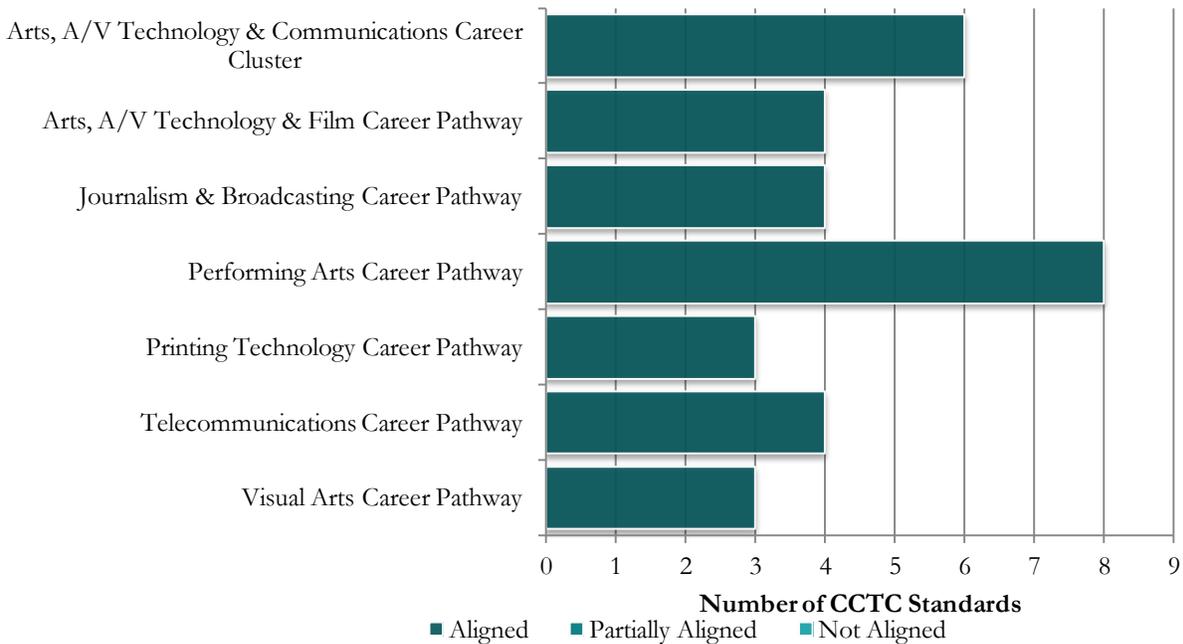
Designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

FINDINGS

New Jersey's standards either partially or fully address 32 of the 32 CCTC standards in this Career Cluster. The results show that 100 percent of the content standards were aligned with the New Jersey secondary CTE standards.



■ Aligned ■ Partially Aligned ■ Not Aligned



ALIGNMENT OF ARTS, A/V TECHNOLOGY & COMMUNICATIONS

Analyze the interdependence of the technical and artistic elements of various careers within the Arts, A/V Technology & Communications Career Cluster.	Aligned
--	---------

Analyze the importance of health, safety and environmental management systems, policies and procedures common in arts, audio/video technology and communications activities and facilities.	Aligned
---	---------

Analyze the lifestyle implications and physical demands required in the arts, audio/visual technology and communications workplace.	Aligned
---	---------

Analyze the legal and ethical responsibilities required in the arts, audio/visual technology and communications workplace.	Aligned
--	---------

Describe the career opportunities and means to achieve those opportunities in each of the Arts, A/V Technology & Communications Career Pathways.	Aligned
--	---------

Evaluate technological advancements and tools that are essential to occupations within the Arts, A/V Technology & Communications Career Cluster.	Aligned
--	---------

A/V Technology & Film Career Pathway (AR-AV)

Describe the history, terminology, occupations and value of audio, video and film technology.	Aligned
---	---------

Demonstrate the use of basic tools and equipment used in audio, video and film production.	Aligned
--	---------

Demonstrate technical support skills for audio, video and film productions.	Aligned
---	---------

Design an audio, video and/or film production.	Aligned
--	---------

Journalism & Broadcasting Career Pathway (AR-JB)

Describe the diversity and variety of functions within the Journalism & Broadcasting Career Pathway.	Aligned
--	---------

Demonstrate writing processes used in journalism and broadcasting media.	Aligned
--	---------

Plan and deliver a media production (e.g., broadcast, video, web, mobile).	Aligned
--	---------

Demonstrate technical support related to media production (e.g., broadcast, video, web, mobile).	Aligned
--	---------

Performing Arts Career Pathway (AR-PRF)

Describe the scope of the Performing Arts Career Pathway and the roles of various individuals and business principles.	Aligned
--	---------

Demonstrate the fundamental elements, techniques, principles and processes for various dance styles and traditions.	Aligned
---	---------

Demonstrate vocal and/or instrumental performances that include a varied repertoire of music representing diverse styles, cultures and historical periods.	Aligned
--	---------

Demonstrate knowledge of music theory by including fundamental themes and patterns in the art form.	Aligned
Explain key issues affecting the creation of characters, acting skills and individual roles for the presentation of a performing arts production.	Aligned
Create stage, film, television or electronic media scripts in a variety of traditional and current formats.	Aligned
Describe how technology and technical support enhances productions.	Aligned
Analyze all facets of stage and production management.	Aligned
Printing Technology Career Pathway (AR-PRT)	
Manage the printing process including customer service and sales, scheduling, production and quality control to deliver products that meet customer needs and expectations.	Aligned
Demonstrate the production of various print, multimedia or digital media products.	Aligned
Perform finishing and distribution operations related to the printing process.	Aligned
Telecommunications Career Pathway (AR-TEL)	
Demonstrate the use of industry specific terminology, tools and test equipment related to telecommunications.	Aligned
Demonstrate installation techniques and processes using appropriate telecommunication tools, materials, schematics diagrams, blueprints, and industry specific codes and regulations.	Aligned
Demonstrate decision making, problem-solving techniques and communication skills when providing services for customers.	Aligned
Demonstrate the installation, repair and delivery of network systems.	Aligned
Visual Arts Career Pathway (AR-VIS)	
Describe the history and evolution of the visual arts and its role in and impact on society.	Aligned
Analyze how the application of visual arts elements and principles of design communicate and express ideas.	Aligned
Analyze and create two- and three-dimensional art forms using various media.	Aligned
<p>Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.</p> <p>Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.</p> <p>Not Aligned indicates that the CCTC standard listed is not covered by the state standards.</p>	



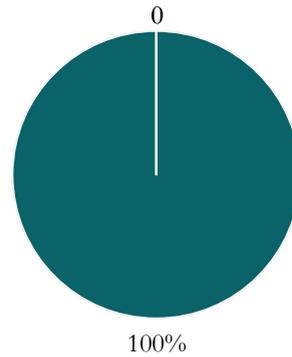
Business Management & Administration

DESCRIPTION

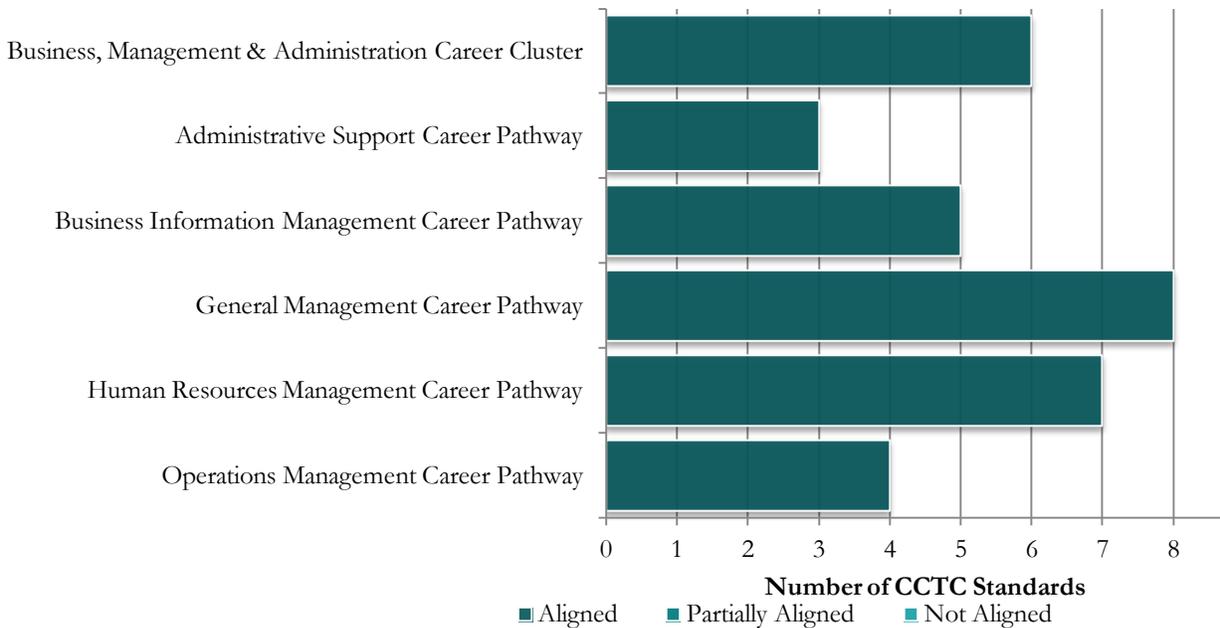
Careers in planning, organizing, directing and evaluating business functions essential to efficient and productive business operations.

FINDINGS

New Jersey's standards either partially or fully address 33 of the 33 CCTC standards in this Career Cluster. The results show that 100 percent of the content standards were aligned with the New Jersey secondary CTE standards.



■ Aligned ■ Partially Aligned ■ Not Aligned



ALIGNMENT OF THE BUSINESS, MANAGEMENT AND ADMINISTRATION

Utilize mathematical concepts, skills and problem solving to obtain necessary information for decision making in business.	Aligned
Describe laws, rules and regulations as they apply to effective business operations.	Aligned
Explore, develop and apply strategies for ensuring a successful business career.	Aligned
Identify, demonstrate and implement solutions in managing effective business customer relationships.	Aligned
Implement systems, strategies and techniques used to manage information in a business.	Aligned
Implement, monitor and evaluate business processes to ensure efficiency and quality results.	Aligned
Administrative Support Career Pathway (BM-ADM)	
Plan, staff, lead and organize human resources to enhance employee productivity and satisfaction.	Aligned
Access, evaluate and disseminate information for business decision making.	Aligned
Plan, monitor and manage day-to-day business activities.	Aligned
Business Information Management Career Pathway (BM-BIM)	
Describe and follow laws and regulations affecting business operations and transactions.	Aligned
Plan, monitor, manage and maintain the use of financial resources to ensure a business's financial well-being.	Aligned
Access, evaluate and disseminate information for business decision making.	Aligned
Plan, monitor and manage day-to-day business activities to sustain continued business functioning.	Aligned
Plan, organize and manage an organization/department to achieve business goals.	Aligned
General Management Career Pathway (BM-MGT)	
Describe and follow laws and regulations affecting business operations and transactions.	Aligned
Access, evaluate and disseminate information for business decision making.	Aligned
Apply economic concepts fundamental to global business operations.	Aligned
Employ and manage techniques, strategies and systems to enhance business relationships.	Aligned
Plan, monitor, manage and maintain the use of financial resources to ensure a business's financial wellbeing.	Aligned
Plan, monitor and manage day-to-day business activities to sustain continued business functioning.	Aligned

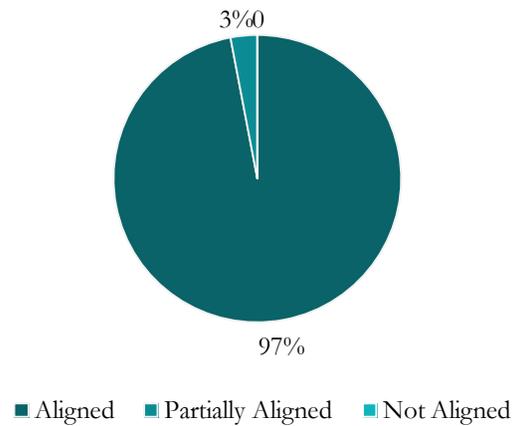
Plan, organize and manage an organization/department to achieve business goals.	Aligned
Create strategic plans used to manage business growth, profit and goals.	Aligned
Human Resources Management Career Pathway (BM-HR)	
Describe and follow laws and regulations affecting human resource operations.	Aligned
Access, evaluate and disseminate information for human resources management decision making.	Aligned
Motivate and supervise personnel to achieve completion of projects and business goals.	Aligned
Plan, monitor and manage the use of financial and human resources to ensure a business's financial wellbeing.	Aligned
Plan, staff, lead, and organize human resources to enhance productivity and satisfaction.	Aligned
Plan, monitor and manage day-to-day business activities to foster a healthy and safe work environment.	Aligned
Plan, organize and implement compensation, benefits, health and safety programs.	Aligned
Operations Management Career Pathway (BM-OP)	
Describe and follow laws and regulations affecting business operations and transactions.	Aligned
Develop and maintain positive customer relationships.	Aligned
Apply inventory tracking systems to facilitate operational controls.	Aligned
Plan, monitor and manage day-to-day business activities to maintain and improve operational functions.	Aligned
<p>Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.</p> <p>Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.</p> <p>Not Aligned indicates that the CCTC standard listed is not covered by the state standards.</p>	

DESCRIPTION

Planning, managing and providing education and training services, and related learning support services such as administration, teaching/training, administrative support, and professional support services.

FINDINGS

New Jersey's standards either partially or fully address 35 of the 35 CCTC standards in this Career Cluster. The results show that 97 percent of the content standards were aligned with the New Jersey secondary CTE standards and three percent were partially aligned



ALIGNMENT OF EDUCATION & TRAINING

Apply communication skills with students, parents and other groups to enhance learning and a commitment to learning.	Aligned
Demonstrate effective oral, written and multimedia communication in multiple formats and contexts.	Aligned
Use critical thinking to process educational communications, perspectives, policies and/or procedures.	Aligned
Evaluate and manage risks to safety, health and the environment in education and training settings.	Aligned
Demonstrate group collaboration skills to enhance professional education and training practice.	Aligned
Analyze ethical and legal policies of professional education and training practice.	Aligned
Explain legal rights that apply to individuals and practitioners within education and training settings.	Aligned
Demonstrate ethical and legal behavior within and outside of education and training settings.	Aligned
Describe state-specific professional development requirements to maintain employment and to advance in an education and training career.	Aligned
Apply organizational skills and logic to enhance professional education and training practice.	Aligned
Demonstrate group management skills that enhance professional education and training practice.	Aligned
Administration & Administration Support Career Pathway (ED-ADM)	
Use research-based practices to develop, communicate and enlist support for a vision of success for all learners.	Aligned
Identify behaviors necessary for developing and sustaining a positive learning culture.	Aligned
Create instructional programs to meet the learning organization's objectives.	Aligned
Identify instructional practices that meet the learning organization's objectives.	Aligned
Model leadership skills for personnel in order to improve the performance of the learning organization.	Aligned
Identify operations to meet the learning organization's objectives.	Partially Aligned
Plan strategically to meet the learning organization's objectives.	Aligned
Apply internal and external resources to meet the learning organization's objectives and learner needs.	Aligned
Describe advocacy strategies to promote the learning organization's needs.	Aligned
Professional Support Services Career Pathway (ED-PS)	

Identify strategies, techniques and tools used to determine the needs of diverse learners.	Aligned
Implement methods to enhance learner success.	Aligned
Identify resources and support services to meet learners' needs.	Aligned
Identify resources and support services available in the learning organization to enhance the learning environment.	Aligned
Teaching/Training Career Pathway (ED-TT)	
Use foundational knowledge of subject matter to plan and prepare effective instruction and design courses or programs.	Aligned
Employ knowledge of learning and developmental theory to describe individual learners.	Aligned
Use content knowledge and skills of instruction to develop standards-based goals and assessments.	Aligned
Identify materials and resources needed to support instructional plans.	Aligned
Establish a positive climate to promote learning.	Aligned
Identify motivational, social and psychological practices that guide personal conduct.	Aligned
Demonstrate organizational and relationship building skills used to manage instructional activities and related procedures.	Aligned
Demonstrate flexibility and adaptability in instructional planning.	Aligned
Utilize assessment and evaluation tools and data to advance learner achievement and adjust instructional plans.	Aligned
Evaluate teaching and training performance indicators to determine and improve effectiveness of instructional practices and professional development.	Aligned
Implement strategies to maintain relationships with others to increase support for the organization.	Aligned

Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.

Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.

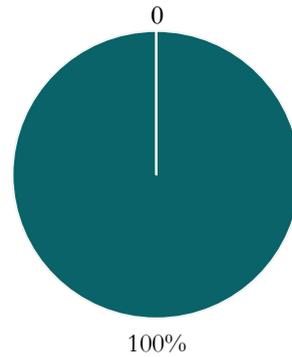
Not Aligned indicates that the CCTC standard listed is not covered by the state standards.

DESCRIPTION

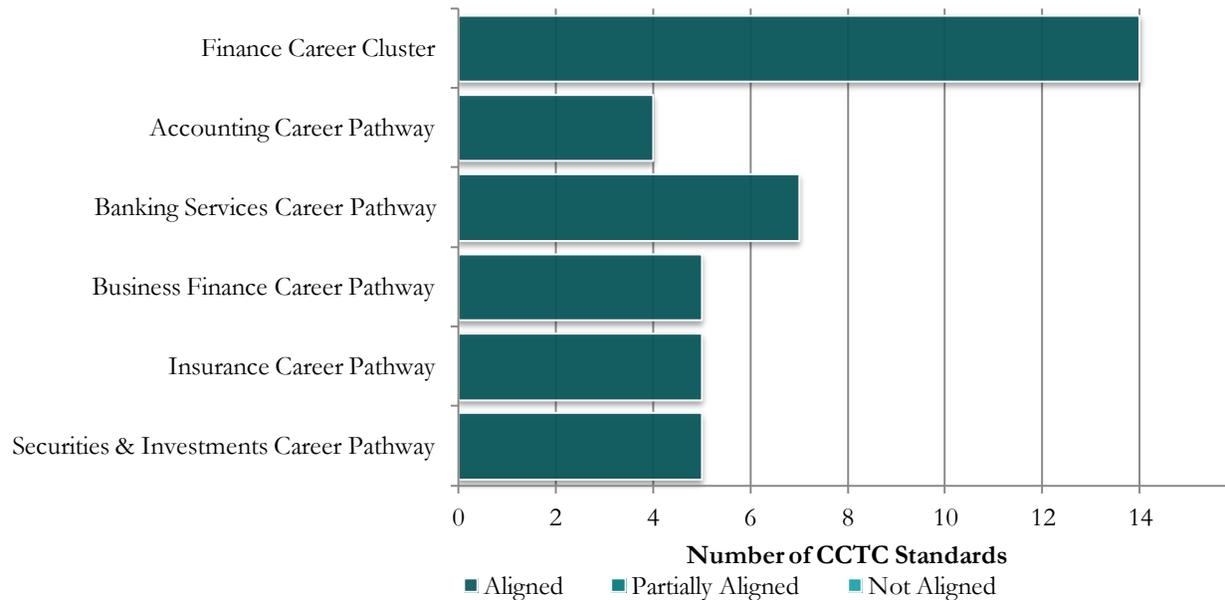
Planning and related services for financial and investment planning, banking, insurance, and business financial management.

FINDINGS

New Jersey's standards either partially or fully address 39 of the 39 CCTC standards in this Career Cluster. The results show that 100 percent of the content standards were aligned with the New Jersey secondary CTE standards.



■ Aligned ■ Partially Aligned ■ Not Aligned



ALIGNMENT OF FINANCE

Utilize mathematical concepts, skills and problem solving to obtain necessary information for decision making in the finance industry.	Aligned
Utilize tools, strategies and systems to plan, monitor, manage and maintain the use of financial resources.	Aligned
Plan, staff, lead and organize human resources in finance to enhance employee productivity and job satisfaction.	Aligned
Determine effective tools, techniques and systems to communicate and deliver value to finance customers.	Aligned
Create and maintain positive, ongoing relationships with finance customers.	Aligned
Plan, monitor and manage day-to-day activities to ensure effective and efficient finance operations.	Aligned
Implement safety, health and environmental controls to ensure a safe and productive finance work workplace.	Aligned
Describe and follow laws, regulations and ethical standards that affect finance operations and transactions.	Aligned
Plan, manage and maintain the use of financial resources to protect solvency.	Aligned
Plan, organize and manage a finance organization/department.	Aligned
Plan, monitor and manage day-to-day activities required to sustain continued business functioning.	Aligned
Access, evaluate and disseminate financial information to enhance financial decision-making processes.	Aligned
Manage a financial product or service mix in order to respond to market opportunities.	Aligned
Employ financial risk-management strategies and techniques used to minimize business loss.	Aligned
Accounting Career Pathway (FN-ACT)	
Describe and follow laws and regulations to manage accounting operations and transactions.	Aligned
Utilize accounting tools, strategies and systems to plan, monitor, manage and maintain the use of financial resources.	Aligned
Process, evaluate and disseminate financial information to assist business decision making.	Aligned
Utilize career-planning concepts, tools and strategies to explore, obtain and/or develop an accounting career.	Aligned
Banking Services Career Pathway (FN-BNK)	
Describe and follow laws and regulations to manage business operations and transactions in the banking services industry.	Aligned

Create and maintain positive, ongoing relationships with banking customers.	Aligned
Manage the use of financial resources to ensure business stability.	Aligned
Demonstrate the use of banking technology and equipment.	Aligned
Plan, monitor and manage the day-to-day activities within a banking organization to ensure secure operations.	Aligned
Utilize career-planning concepts, tools and strategies to explore, obtain and/or develop in a corporate finance career.	Aligned
Determine client needs and wants and respond through planned, personalized communication to guide purchase decisions and enhance future business opportunities in banking services.	Aligned
Business Finance Career Pathway (FN-BFN)	
Describe and follow laws and regulations to manage business operations and transactions in corporate finance.	Aligned
Manage the use of financial resources to ensure business stability.	Aligned
Utilize career-planning concepts, tools and strategies to explore, obtain and/or develop in a corporate finance career.	Aligned
Employ risk-management strategies and techniques in corporate finance to minimize business loss.	Aligned
Insurance Career Pathway (FN-INS)	
Describe and follow laws and regulations to manage business operations and transactions in the insurance industry.	Aligned
Plan, monitor and manage day-to-day insurance organization activities.	Aligned
Utilize career-planning concepts, tools and strategies to explore, obtain and/or develop a career in insurance.	Aligned
Demonstrate underwriting techniques and strategies to evaluate the risk posed by potential insurance clients.	Aligned
Determine client needs and wants and respond through planned, personalized communication to guide purchase decisions and enhance future insurance business opportunities.	Aligned
Securities & Investments Career Pathway (FN-SEC)	
Describe and follow laws and regulations to manage business operations and transactions in the securities and investments industry.	Aligned
Manage the use of financial resources to perform key duties in the securities and investments industry.	Aligned
Plan, monitor and manage day-to-day securities and investments operations.	Aligned
Utilize career-planning concepts, tools and strategies to explore, obtain and/or develop in a securities and investments career.	Aligned

Determine client needs and wants and respond through planned, personalized communication to guide purchase decisions and enhance future securities and investments opportunities.

Aligned

Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.

Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.

Not Aligned indicates that the CCTC standard listed is not covered by the state standards.



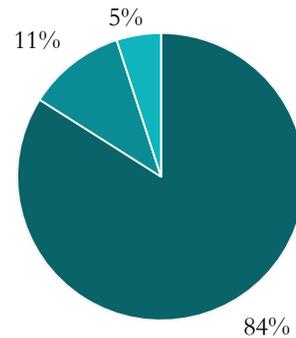
Government & Public Administration

DESCRIPTION

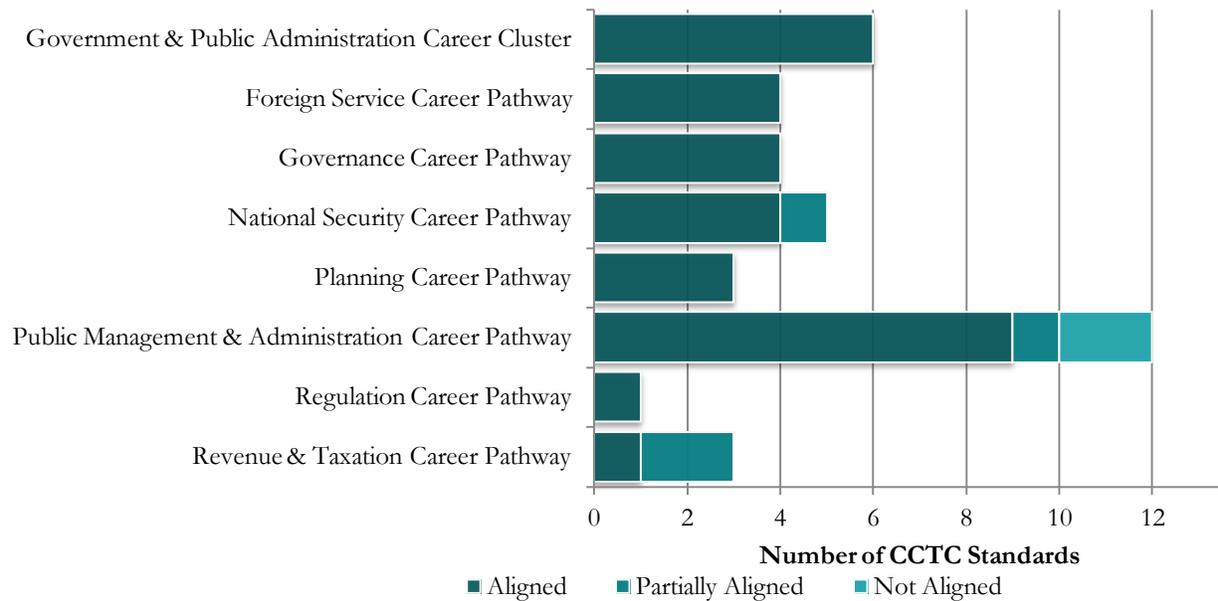
Planning and executing government functions at the local, state and federal levels, including governance, national security, foreign service, planning, revenue and taxation, and regulations.

FINDINGS

New Jersey's standards either partially or fully address 36 of the 38 CCTC standards in this Career Cluster. The results show that 84 percent of the content standards were aligned with the New Jersey secondary CTE standards, 11 percent were partially aligned, and five percent were not aligned.



■ Aligned ■ Partially Aligned ■ Not Aligned



ALIGNMENT OF GOVERNMENT & PUBLIC ADMINISTRATION

Explain the purpose and functions of government and public administration and the application of democratic principles in the process of governmental and administrative policymaking.	Aligned
Analyze the systemic relationships of government and public administration agencies.	Aligned
Describe health, safety and environmental management systems, as well as policies and procedures in government and public administration agencies.	Aligned
Describe the implementation of plans and policies to respond to public health, safety and environmental needs in government and public administration agencies.	Aligned
Describe career opportunities and the means to achieve those opportunities in each of the Government & Public Administration Career Pathways.	Aligned
Explain the administration of human, financial, material and information resources in government and public administration agencies.	Aligned
Foreign Service Career Pathway (GV-FOR)	
Apply the knowledge acquired from history, law, geography, science, language studies, social sciences (including economic and political science), business, foreign policy and culture to perform diplomatic functions.	Aligned
Describe the laws, customs and current administrative practices of the United States and host countries used to manage administrative, social and policy matters.	Aligned
Describe the application of United States and host country laws, regulations, policies and procedures used to manage consular administrative matters.	Aligned
Describe the application of host country laws, customs and effective administrative practices used to manage the conduct of diplomatic operations.	Aligned
Governance Career Pathway (GV-GOV)	
Employ research skills to gather and document factual information, analyze data and interpret statistics applicable to matters of public policy.	Aligned
Develop and articulate reasoned, persuasive arguments to support public policy options or positions.	Aligned
Select and apply appropriate political processes to gain consensus for the resolution of differing opinions and positions.	Aligned
Advocate to gain support for new laws, regulations, ordinances, programs or procedures; alternatively, advocate to gain support to reform or revoke existing laws, regulations, ordinances, programs or procedures.	Aligned
National Security Career Pathway (GV-SEC)	
Instruct persons who will perform tasks relating to national homeland security.	Aligned
Describe the appropriate duties, responsibilities and authority of a national security agency's personnel at all levels.	Aligned

Describe the leadership characteristics necessary to ensure compliance with rules of engagement and applicable ethical standards.	Aligned
Collect and analyze information from within and outside the United States to assess threats and opportunities regarding national security.	Aligned
Develop strategies to defend against and respond to the effects of chemical, biological, radiological, nuclear (CBRN) or other emergent events.	Partially Aligned
Planning Career Pathway (GV-PLN)	
Explain the planning process used to support the development and implementation of new and updated plans, programs and regulations for government and public administration agencies.	Aligned
Develop a comprehensive and focused strategic planning process for government and public administration agencies to manage change.	Aligned
Formulate plans and policies that meet the social, economic and physical needs of the public.	Aligned
Public Management & Administration Career Pathway (GV-MGT)	
Describe the organization of a government or public administration department or agency.	Aligned
Design strategies to maximize the potential of a government or public administration department or agency to meet its vision, mission and goals.	Aligned
Utilize fiscal management skills to manage budget and allocation processes to ensure that resources are applied in a manner consistent with the department or agency's vision, mission and goals.	Aligned
Facilitate the flow of ideas and information to keep the department or agency and its constituency informed of policies and operations.	Aligned
Create plans that utilize department or agency expertise to help elected officials and others identify, implement and achieve common goals and objectives.	Aligned
Use analysis, planning and fiscal services to fund department or agency priorities.	Aligned
Describe ethical and fiscally responsible procurement systems and procedures used to meet department or agency needs.	
Prepare procurement requirements, procedures and solicitations for bids or proposals.	Not Aligned
Evaluate bids and proposals consistent with the requirements of the procurement process.	Not Aligned
Describe the oversight of awarded contracts to ensure the ethical and optimal use of public funds.	Partially Aligned
Describe laws and policies that are used to protect or disclose information.	Aligned
Develop strategies that encourage a creative and innovative environment in a government or public administration department or agency.	Aligned
Regulation Career Pathway (GV-REG)	

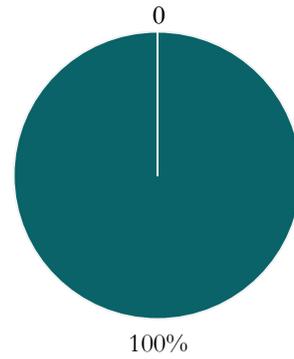
Describe enforcement of compliance with legal requirements and regulatory standards.	Aligned
Revenue & Taxation Career Pathway (GV-REV)	
Examine evidence and ensure revenue compliance by interpreting applicable laws, applying appropriate investigative principles and following relevant procedures.	Aligned
Acquire, analyze and disseminate information to facilitate clear and accurate communication with revenue and taxation stakeholders.	Partially Aligned
Design, develop, operate and review data analysis systems and procedures to minimize and eliminate revenue-related financial problems.	Partially Aligned
<p>Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.</p> <p>Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.</p> <p>Not Aligned indicates that the CCTC standard listed is not covered by the state standards.</p>	

DESCRIPTION

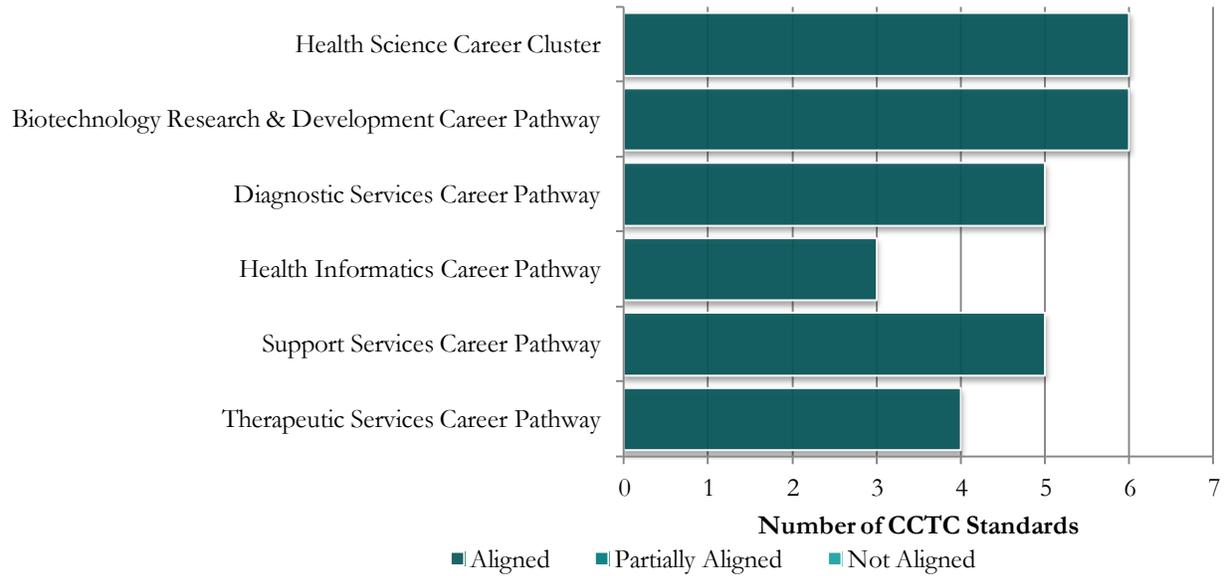
Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

FINDINGS

New Jersey's standards either partially or fully address 29 of the 29 CCTC standards in this Career Cluster. The results show that 100 percent of the content standards were aligned with the New Jersey secondary CTE standards.



■ Aligned ■ Partially Aligned ■ Not Aligned



ALIGNMENT OF HEALTH SCIENCE

Determine academic subject matter, in addition to high school graduation requirements, necessary for pursuing a health science career.	Aligned
Explain the healthcare worker's role within their department, their organization, and the overall healthcare system.	Aligned
Identify existing and potential hazards to clients, coworkers, visitors and self in the healthcare workplace.	Aligned
Evaluate the roles and responsibilities of individual members as part of the healthcare team and explain their role in promoting the delivery of quality health care.	Aligned
Analyze the legal and ethical responsibilities, limitations and implications of actions within the healthcare workplace.	Aligned
Evaluate accepted ethical practices with respect to cultural, social and ethnic differences within the healthcare workplace.	Aligned
Biotechnology Research & Development Career Pathway (HL-BRD)	
Summarize the goals of biotechnology research and development within legal and ethical protocols.	Aligned
Apply the fundamentals of biochemistry, cell biology, genetics, mathematical concepts, microbiology, molecular biology, organic chemistry and statistics to conduct effective biotechnology research and development of products.	Aligned
Demonstrate basic knowledge of recombinant DNA, genetic engineering, bioprocessing, monoclonal antibody production, nanotechnology, bioinformatics, genomics, proteomics and transcriptomics to conduct biotechnology research and development.	Aligned
Demonstrate the principles of solution preparation, sterile techniques, contamination control, and measurement and calibration of instruments used in biotechnology research.	Aligned
Determine processes for product design and production and how that work contributes to an understanding of the biotechnology product development process.	Aligned
Summarize and explain the larger ethical, moral and legal issues related to biotechnology research, product development and use in society.	Aligned
Diagnostic Services Career Pathway (HL-DIA)	
Communicate key diagnostic information to healthcare workers and patients in an accurate and timely manner.	Aligned
Assess and report patient's/client's health status in order to monitor and document patient progress.	Aligned
Demonstrate the principles of body mechanics for positioning, transferring and transporting of patients/clients, and perform them without injury to the patient/client or self.	Aligned
Explain procedures and goals to the patient/client accurately and effectively, using strategies to respond to questions and concerns.	Aligned

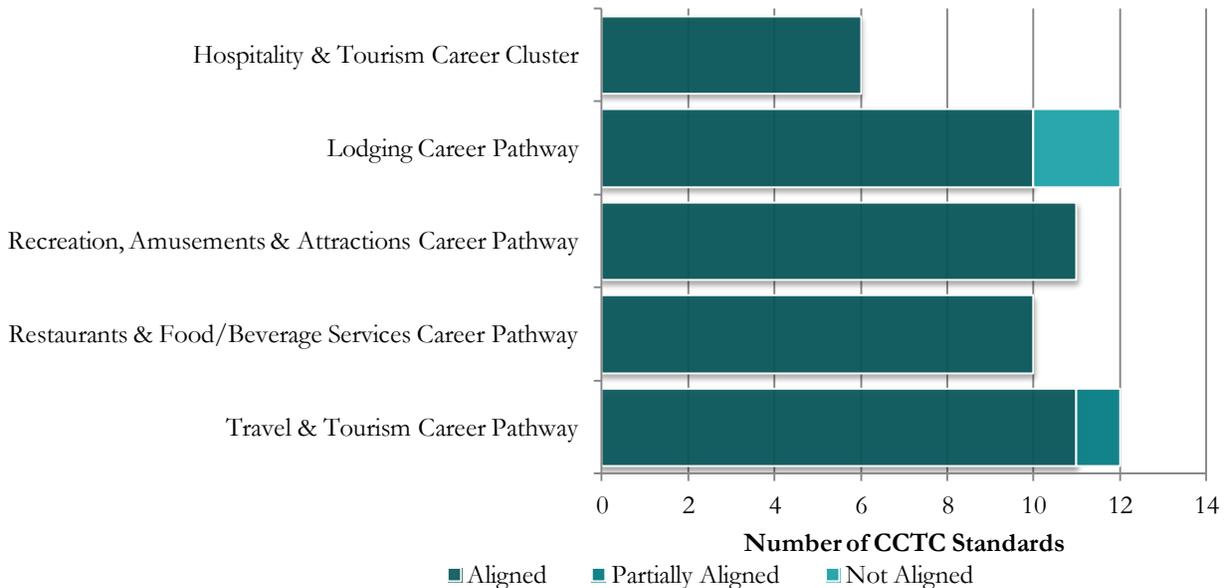
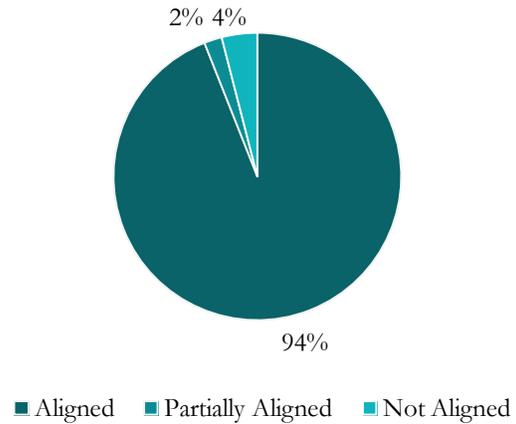
Select, demonstrate and interpret diagnostic procedures.	Aligned
Health Informatics Career Pathway (HL-HI)	
Communicate health information accurately and within legal and regulatory guidelines, upholding the strictest standards of confidentiality.	Aligned
Describe the content and diverse uses of health information.	Aligned
Demonstrate the use of systems used to capture, retrieve and maintain confidential health information from internal and external sources.	Aligned
Support Services Career Pathway (HL-SUP)	
Describe, differentiate and safely perform the responsibilities of healthcare support services roles.	Aligned
Demonstrate work practices that maintain a clean and healthy healthcare facility to reduce or eliminate pathogenic organisms.	Aligned
Follow established internal and external guidelines in order to provide high-quality, effective support services in the healthcare facility.	Aligned
Maximize available resources for proper care and use of healthcare equipment and materials.	Aligned
Implement healthcare facility standards in order to maintain high-quality healthcare facilities.	Aligned
Therapeutic Services Career Pathway (HL-THR)	
Utilize communication strategies to answer patient/client questions and concerns on planned procedures and goals.	Aligned
Communicate patient/client information among healthcare team members to facilitate a team approach to patient care.	Aligned
Utilize processes for assessing, monitoring and reporting patient's/clients' health status to the treatment team within protocol and scope of practice.	Aligned
Evaluate patient/client needs, strengths and problems in order to determine if treatment goals are being met.	Aligned
<p>Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.</p> <p>Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.</p> <p>Not Aligned indicates that the CCTC standard listed is not covered by the state standards.</p>	

DESCRIPTION

Preparing individuals for employment in career pathways that relate to families and human needs such as restaurant and food/beverage services, lodging, travel and tourism, recreation, amusement and attractions.

FINDINGS

New Jersey's standards either partially or fully address 49 of the 51 CCTC standards in this Career Cluster. The results show that 94 percent of the content standards were aligned with the New Jersey secondary CTE standards, two percent were partially aligned, and four percent were not aligned.



ALIGNMENT OF HOSPITALITY & TOURISM

Describe the key components of marketing and promoting hospitality and tourism products and services.	Aligned
Evaluate the nature and scope of the Hospitality & Tourism Career Cluster and the role of hospitality and tourism in society and the economy.	Aligned
Demonstrate hospitality and tourism customer service skills that meet customers' needs.	Aligned
Describe employee rights and responsibilities and employers' obligations concerning occupational health and safety in the hospitality and tourism workplace.	Aligned
Identify potential, real and perceived hazards and emergency situations and determine the appropriate safety and security measures in the hospitality and tourism workplace.	Aligned
Describe career opportunities and means to attain those opportunities in each of the Hospitality & Tourism Career Pathways.	Aligned
Lodging Career Pathway (HT-LOD)	
Use various communication technologies to accomplish work tasks in lodging facilities.	Aligned
Explain the role and importance of housekeeping operations to lodging facility.	Aligned
Allocate staff positions to meet the needs of various lodging departments.	Aligned
Describe the role and responsibilities of lodging managers.	Aligned
Compare the advantages and disadvantages of independently owned and chain-affiliated lodging facilities.	Aligned
Analyze the departmental interrelationships of a lodging facility.	Not Aligned
Explain various check-in and check-out procedures used in the lodging industry.	Aligned
Understand reservation procedures used in the lodging industry.	Aligned
Explain how room access policies and procedures ensure guest safety and minimize risks to the lodging facility.	Aligned
Explain how cash control procedures are used in the lodging industry.	Aligned
Explain how guests and property are protected to minimize losses or liabilities in the lodging facility.	Aligned
Explain the basic legal issues in lodging management.	Not Aligned
Recreation, Amusements & Attractions Career Pathway (HT-REC)	
Describe career opportunities in the Recreation, Amusements & Attractions Career Pathway.	Aligned
Explain admission and traffic control procedures used to manage and control individuals, groups and vehicles in recreation, amusement and attraction venues.	Aligned

Determine the maintenance and technology needs for various recreation, amusement and attraction venues.	Aligned
Describe safety and security issues unique to the Recreation, Amusements & Attractions Career Pathway.	Aligned
Compile a resource base to manage emergency situations in recreation, amusement and attraction venues.	Aligned
Identify safety and security issues for recreation, amusement and attraction venues that might require customer education.	Aligned
Compare different ticket sales options to maximize revenue for recreation, amusement and attraction venues.	Aligned
Describe the types of information and directions a guest would need at a recreation, amusement and attraction entry point.	Aligned
Develop marketing strategies for recreation, amusement and attractions venues.	Aligned
Analyze the merchandising, program and product potential for different recreation, amusement and attraction venues.	Aligned
Compare and contrast various types of recreation, amusement and attraction venues.	Aligned
Restaurants & Food/ Beverage Services Career Pathway (HT-RFB)	
Describe ethical and legal responsibilities in food and beverage service facilities.	Aligned
Demonstrate safety and sanitation procedures in food and beverage service facilities.	Aligned
Use information from cultural and geographical studies to guide customer service decisions in food and beverage service facilities.	Aligned
Demonstrate leadership qualities and collaboration with others.	Aligned
Research costs, pricing, market demands and marketing strategies to manage profitability in food and beverage service facilities.	Aligned
Explain the benefits of the use of computerized systems to manage food service operations and guest service.	Aligned
Utilize technical resources for food services and beverage operations to update or enhance present practice.	Aligned
Implement standard operating procedures related to food and beverage production and guest service.	Aligned
Describe career opportunities and qualifications in the restaurant and food service industry.	Aligned
Apply listening, reading, writing and speaking skills to enhance operations and customer service in food and beverage service facilities.	Aligned
Travel & Tourism Career Pathway (HT-TT)	
Apply information about time zones, seasons and domestic and international maps to create or enhance travel.	Aligned

Apply unit and time conversion skills to develop travel schedules and compute cost, distance and time (including travel time) factors.	Aligned
Analyze cultural diversity factors to enhance travel planning.	Partially Aligned
Assess the potential (real and perceived) hazards related to multiple environments, and recommend appropriate safety, health and security measures for travelers.	Aligned
Develop a safety and security plan containing proactive and reactive solutions to manage emergency situations for travelers and staff.	Aligned
Use common travel and tourism terminology used to communicate within the industry.	Aligned
Customize travel with diverse transportation, lodging, cruise and food options.	Aligned
Compare and contrast services and products from related industries to understand and evaluate how they impact the delivery of travel and tourism products and services to customers.	Aligned
Identify the community elements necessary to maintain cooperative tourism development efforts.	Aligned
Develop a travel product that matches customer needs, wants and expectations.	Aligned
Design promotional packages to effectively market travel and tourism.	Aligned
Select the most effective communication technique and media venue to convey travel marketing information to a target audience.	Aligned

Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.

Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.

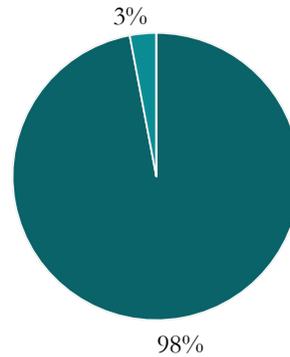
Not Aligned indicates that the CCTC standard listed is not covered by the state standards.

DESCRIPTION

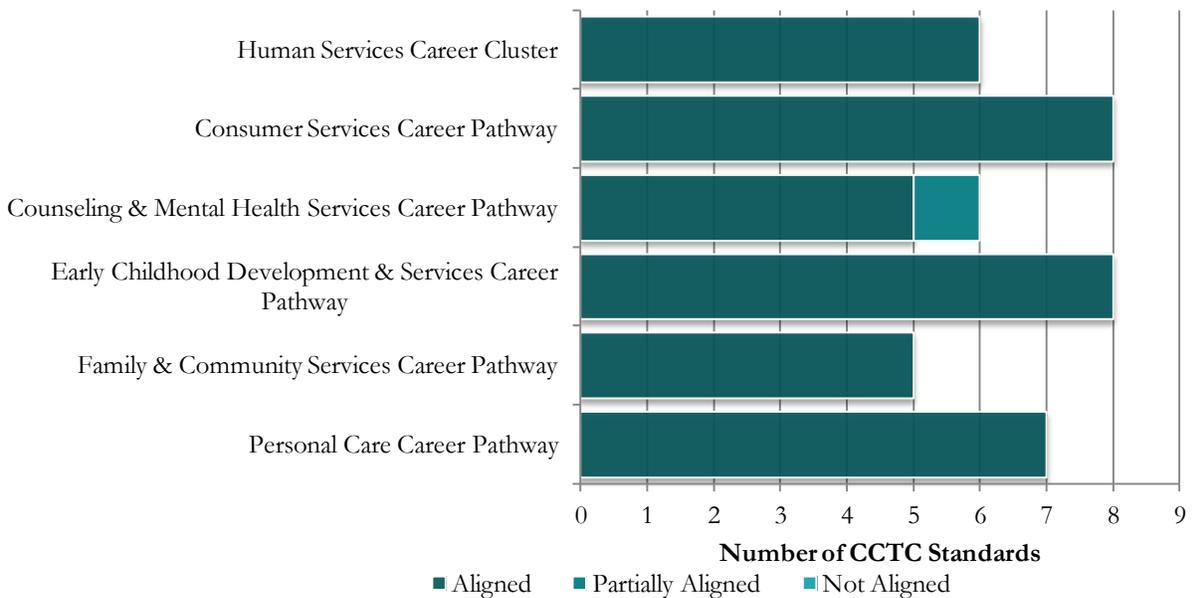
Preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care and consumer services.

FINDINGS

New Jersey's standards either partially or fully address 40 of the 40 CCTC standards in this Career Cluster. The results show that 98 percent of the content standards were aligned with the New Jersey secondary CTE standards and three percent were partially aligned.



■ Aligned ■ Partially Aligned ■ Not Aligned



■ Aligned ■ Partially Aligned ■ Not Aligned

ALIGNMENT OF HUMAN SERVICES

Evaluate principles of planning, development, implementation and evaluation to accomplish long-range goals in the human services.	Aligned
Evaluate the role of the family, community and human services in society and the economy.	Aligned
Use effective communication with human services clients and their families.	Aligned
Demonstrate ethical and legal conduct in human services settings.	Aligned
Evaluate career opportunities in each of the Human Services Career Pathways.	Aligned
Explain how human development principles enhance the wellbeing of individuals and families.	Aligned
Consumer Services Career Pathway (HU-CSM)	
Summarize necessary credentials, licensures or state-specific requirements to prepare for a career in consumer services.	Aligned
Communicate product or equipment features that meet the needs of clients and consumers.	Aligned
Make consumer services recommendations meeting the needs of clients or customers.	Aligned
Analyze financial/economic situations when making recommendations about consumer services.	Aligned
Use standard business processes or procedures to create consumer service information and facilitate client interactions.	Aligned
Use a variety of methods to educate audiences about consumer services.	Aligned
Demonstrate knowledge of ethical and legal responsibilities associated with providing consumer services.	Aligned
Apply business procedures and utilize equipment and facilities to produce satisfying client outcomes.	Aligned
Counseling & Mental Health Services Career Pathway (HU-CMH)	
Use clear written, spoken and nonverbal messages when communicating with clients about mental health services and the counseling process.	Aligned
Utilize functional and specialized assessments to evaluate needs and solutions for counseling and mental health.	Partially Aligned
Evaluate client motivation, strengths and weaknesses to develop a client treatment program.	Aligned
Demonstrate knowledge of an operational mental health or counseling program that meets organizational goals.	Aligned
Demonstrate the ethical and legal responsibilities of counseling and mental health services.	Aligned
Choose appropriate counseling and therapy techniques to serve identified needs.	Aligned

Early Childhood Development & Services Career Pathway (HU-EC)	
Demonstrate communication techniques with children to facilitate ongoing development and enhance learning.	Aligned
Communicate effectively with fellow staff members to facilitate child development activities.	Aligned
Maintain working knowledge of child development licensing and certification organizations to keep abreast of current procedures and changes.	Aligned
Create and maintain relationships between staff and parents/family members to encourage involvement and facilitate child development and learning.	Aligned
Evaluate safety and sanitation procedures associated with the early childhood education environment to assure compliance and prevent potential hazards.	Aligned
Adhere to ethical and legal responsibilities, laws and regulations to protect children and families.	Aligned
Apply principles of child growth and development, including social, emotional, physical and cognitive milestones, to provide comprehensive program offerings.	Aligned
Evaluate curriculum for inclusiveness of children with special needs.	Aligned
Family & Community Services Career Pathway (HU-FAM)	
Use formal and informal assessment practices to create and evaluate a prevention and/or treatment plan.	Aligned
Identify community resources to provide family and community services.	Aligned
Communicate effectively to gain support from the client's family and other support groups.	Aligned
Comply with laws and procedures that govern abuse, neglect, confidentiality and other health and safety situations.	Aligned
Evaluate crisis prevention, intervention and resolution techniques to formulate emergency plans.	Aligned
Personal Care Services Career Pathway (HU-PC)	
Analyze basic principles of biology, chemistry and human anatomy for safe and effective utilization and selection of personal care products and services.	Aligned
Evaluate an individualized personal care plan that reflects client preferences, needs and interests for a course of treatment/action.	Aligned
Utilize data and information to maintain electronic records of client services and make recommendations for personal care services.	Aligned
Demonstrate policies and procedures to achieve a safe and healthy environment for personal care services.	Aligned
Develop organizational policies, procedures and regulations that establish personal care organization priorities, accomplish the mission, and provide high-quality service to a diverse set of clients and families.	Aligned

Identify personal care business opportunities enhanced by community involvement, self-improvement and current trends.	Aligned
---	---------

Apply methods of obtaining feedback to understand expectations and promote high-quality personal care services standards.	Aligned
---	---------

Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.

Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.

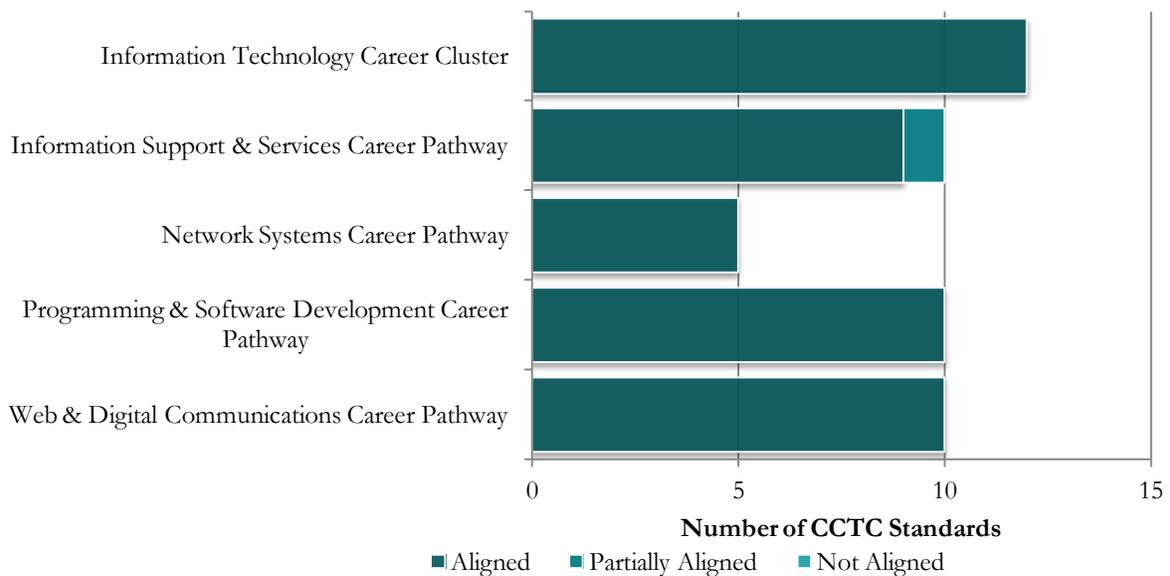
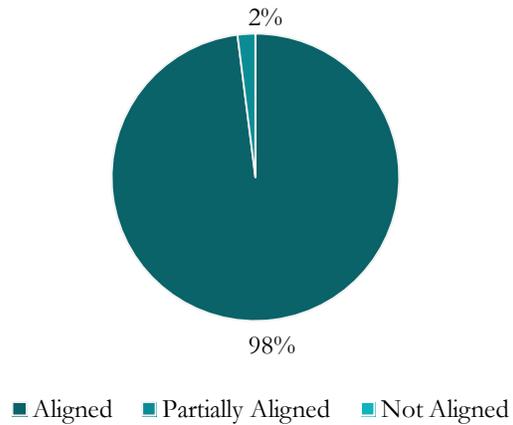
Not Aligned indicates that the CCTC standard listed is not covered by the state standards.

DESCRIPTION

Building linkages in IT occupations for entry level, technical and professional careers related to the design, development, support and management of hardware, software, multimedia and systems integration services.

FINDINGS

New Jersey's standards either partially or fully address 47 of the 47 CCTC standards in this Career Cluster. The results show that 98 percent of the content standards were aligned with the New Jersey secondary CTE standards and two percent were partially aligned.



ALIGNMENT OF INFORMATION TECHNOLOGY

Demonstrate effective professional communication skills and practices that enable positive customer relationships	Aligned
Use product or service design processes and guidelines to produce a quality information technology product or service	Aligned
Demonstrate the use of cross-functional teams in achieving IT project goals.	Aligned
Demonstrate positive cyber citizenry by applying industry accepted ethical practices and behaviors	Aligned
Explain the implications of IT on business development.	Aligned
Describe trends in emerging and evolving computer technologies and their influence on IT practices	Aligned
Perform standard computer backup and restore procedures to protect IT information	Aligned
Recognize and analyze potential IT security threats to develop and maintain security requirements.	Aligned
Describe quality assurance practices and methods employed in producing and providing quality IT products and services.	Aligned
Describe the use of computer forensics to prevent and solve information technology crimes and security breaches	Aligned
Demonstrate knowledge of the hardware components associated with information systems.	Aligned
Compare key functions and applications of software and determine maintenance strategies for computer systems.	Aligned
Information Support & Services Career Pathway (IT-SUP)	
Provide technology support to maintain service	Aligned
Manage operating systems and software applications, including maintenance of upgrades, patches and service packs	Aligned
Apply appropriate troubleshooting techniques in resolving computer hardware, software and configuration problems.	Partially Aligned
Perform installation, configuration and maintenance of operating systems	Aligned
Demonstrate the use of networking concepts to develop a network.	Aligned
Evaluate the effectiveness of an information system.	Aligned
Employ system installation and maintenance skills to setup and maintain an information system.	Aligned
Employ system administration and control skills to monitor the performance of an information system	Aligned
Employ technical writing and documentation skills in support of an information	Aligned

system	
Apply quality assurance processes to maximize information system operation	Aligned
Network Systems Career Pathway (IT-NET)	
Analyze customer or organizational network system needs and requirements	Aligned
Analyze wired and wireless network systems to determine if they meet specifications (e.g., IEEE, power, security).	Aligned
Design a network system using technologies, tools and standards.	Aligned
Perform network system installation and configuration.	Aligned
Perform network administration, monitoring and support to maintain a network system.	Aligned
Programming & Software Development Career Pathway (IT-PRG)	
Analyze customer software needs and requirements.	Aligned
Demonstrate the use of industry standard strategies and project planning to meet customer specifications.	Aligned
Analyze system and software requirements to ensure maximum operating efficiency.	Aligned
Demonstrate the effective use of software development tools to develop software applications.	Aligned
Apply an appropriate software development process to design a software application.	Aligned
Program a computer application using the appropriate programming language.	Aligned
Demonstrate software testing procedures to ensure quality products.	Aligned
Perform quality assurance tasks as part of the software development cycle.	Aligned
Perform software maintenance and customer support functions.	Aligned
Design, create and maintain a database.	Aligned
Web & Digital Communications Career Pathway (IT-WD)	
Analyze customer requirements to design and develop a web or digital communication product.	Aligned
Apply the design and development process to produce user-focused web and digital communications solutions.	Aligned
Write product specifications that define the scope of work aligned to customer requirements.	Aligned
Demonstrate the effective use of tools for digital communication production, development and project management.	Aligned
Develop, administer and maintain web applications.	Aligned

Design, create and publish a digital communication product based on customer needs.	Aligned
Evaluate the functionality of a digital communication product using industry accepted techniques and metrics.	Aligned
Implement quality assurance processes to deliver quality digital communication products and services.	Aligned
Perform maintenance and customer support functions for digital communication products.	Aligned
Comply with intellectual property laws, copyright laws and ethical practices when creating web/digital communications.	Aligned

Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.

Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.

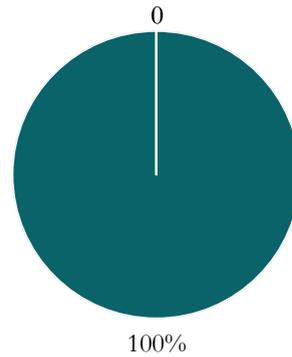
Not Aligned indicates that the CCTC standard listed is not covered by the state standards.

DESCRIPTION

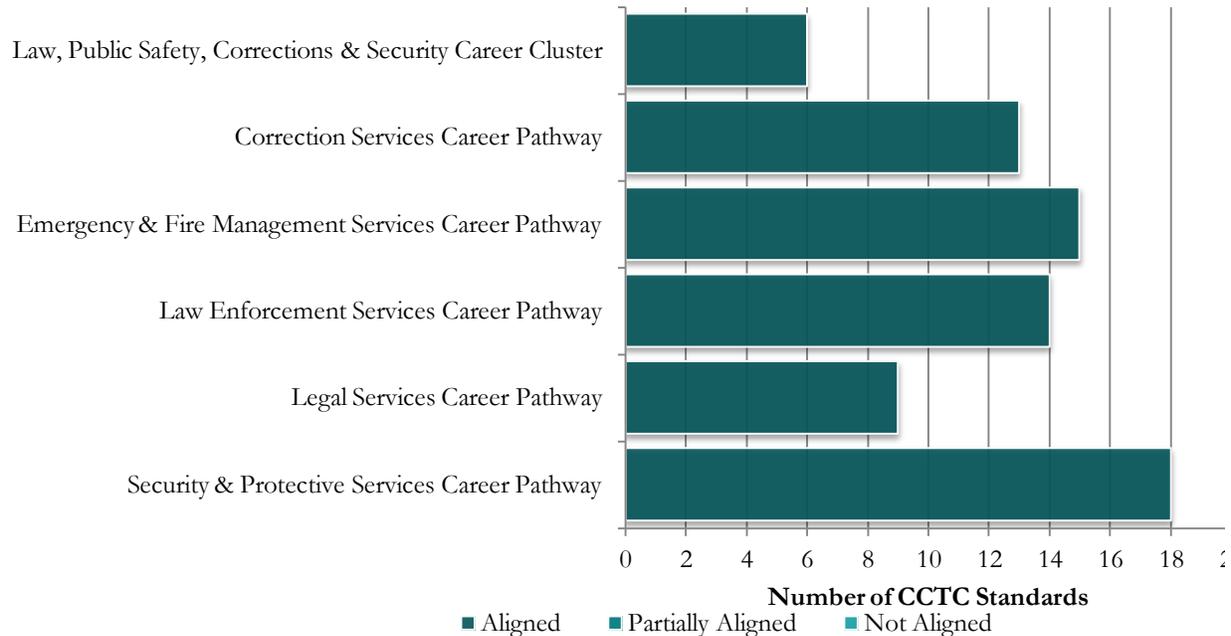
Planning, managing and providing legal, public safety, protective services and homeland security, including professional and technical support services.

FINDINGS

New Jersey's standards either partially or fully address 75 of the 75 CCTC standards in this Career Cluster. The results show that 100 percent of the content standards were aligned with the New Jersey secondary CTE standards.



■ Aligned ■ Partially Aligned ■ Not Aligned



ALIGNMENT OF LAW, PUBLIC SAFETY, CORRECTIONS & SECURITY

Analyze the nature and scope of the Law, Public Safety, Corrections & Security Career Cluster and the role law, public safety, corrections and security play in society and the economy.	Aligned
Formulate ideas, proposals and solutions to ensure effective and efficient delivery of law, public safety, corrections and/or security services.	Aligned
Assess and implement measures to maintain safe and healthy working conditions in a law, public safety, corrections and/or security environment.	Aligned
Conduct law, public safety, corrections and security work tasks in accordance with employee and employer rights, obligations and responsibilities, including occupational safety and health requirements.	Aligned
Analyze the various laws, ordinances, regulations and organizational rules that apply to careers in law, public safety, corrections and security.	Aligned
Describe various career opportunities and means to those opportunities in each of the Law, Public Safety, Corrections & Security Career Pathways.	Aligned
Correction Services Career Pathway (LW-COR)	
Evaluate the correctional environment for signs of potential problems and/or danger.	Aligned
Demonstrate leadership roles, responsibilities and collaboration in correctional environments.	Aligned
Analyze the impact of federal, state and local laws on correctional facilities.	Aligned
Describe the various roles and impacts of forensics and computer forensics in the resolution of crime in the correctional environment.	Aligned
Describe the legal, regulatory and organizational guidelines governing the correction services.	Aligned
Compare and contrast different career fields in the correction services.	Aligned
Demonstrate effective communication skills (e.g., writing, speaking, active listening and nonverbal communication) in the correctional environment.	Aligned
Analyze the techniques used to manage crisis situations and resolve conflicts in correctional environments.	Aligned
Demonstrate the protocols regarding the reduction or elimination of sexual harassment or abuse in the correctional environment.	Aligned
Analyze situations that require the use of force, including deadly force, to determine when varying degrees of force should be utilized in correctional facilities.	Aligned
Analyze the impact of the Fourth, Fifth, Sixth and Fourteenth Amendments in the correction services environment.	Aligned
Apply the ethical and legal responsibilities of correctional staff to various situations in the correction services environment.	Aligned
Describe the knowledge and technical skills needed to carry out the day-to-day operations at a correctional facility.	Aligned
Emergency & Fire Management Services Career Pathway (LW-EFM)	

Demonstrate effective communication skills (e.g., writing, speaking, listening and nonverbal communication) while utilizing communications equipment and platforms common to emergency and fire management services.	Aligned
Manage an incident scene as the first responder using emergency response skills.	Aligned
Utilize up-to-date technology equipment and applications to facilitate the management of emergency and fire management situations.	Aligned
Demonstrate an understanding of the objectives and a commitment to the mission of emergency and fire management services.	Aligned
Execute safety procedures and protocols associated with local, state and federal regulations.	Aligned
Develop an organizational professional growth plan including the development of team building and leadership skills within the emergency and fire management environment.	Aligned
Describe the legal, regulatory and organizational guidelines governing emergency and fire management services.	Aligned
Compare and contrast the different career fields in fire and emergency management services.	Aligned
Execute protocols for handling emergency situations that range from minor medical and fire emergencies to area-wide incidents.	Aligned
Demonstrate the use and various applications of the equipment commonly used in emergency and fire management services.	Aligned
Implement an appropriate Incident Command System to effectively manage an incident scene.	Aligned
Use common codes and icons to properly handle and transport potentially hazardous substances in fire and medical emergency scenes.	Aligned
Implement public relations plans to enhance public awareness and safety in fire and emergency situations.	Aligned
Describe the elements and issues involved in using the preparedness and response systems available to manage large-scale disasters.	Aligned
Analyze the key functions and techniques of critical infrastructure protection in cases of terrorism and/or natural disasters.	Aligned
Law Enforcement Services Career Pathway (LW-ENF)	
Demonstrate effective communication skills (e.g., writing, speaking, listening and nonverbal communication) required in law enforcement.	Aligned
Demonstrate proficiency in the operation of communication equipment used in an emergency telecommunications center.	Aligned
Utilize anger and conflict management strategies to resolve problems in law enforcement settings.	Aligned
Model behaviors that exhibit integrity and commitment to a code of conduct and ethics for law enforcement professionals.	Aligned
Analyze the impact of federal, state and local laws on law enforcement procedures.	Aligned

Execute established procedures to avoid the violation of the rights guaranteed by the Fourth, Fifth, Sixth and Fourteenth Amendments.	Aligned
Manage crime and loss prevention programs in collaboration with the community.	Aligned
Explain the appropriate techniques for managing crisis situations in order to maintain public safety.	Aligned
Evaluate for the signs of domestic violence, child abuse and neglect.	Aligned
Demonstrate the routine day-to-day tasks conducted by various law enforcement agencies.	Aligned
Describe law enforcement protocols and procedures designed to handle incidents related to homeland security, terrorism and other disaster situations.	Aligned
Demonstrate the procedures to properly protect, document and process the crime scene and all related evidence.	Aligned
Demonstrate procedures to assist individuals requiring special assistance from law enforcement personnel.	Aligned
Describe the behavioral symptoms of drug use and the inherent dangers associated with handling dangerous drugs.	Aligned
Legal Services Career Pathway (LW-LEG)	
Demonstrate effective communication skills (writing, speaking, listening and nonverbal communication) in the legal services environment.	Aligned
Interpret nonverbal communication cues in order to discern facts from fabrication.	Aligned
Produce written legal materials using writing strategies applicable to the legal services environment.	Aligned
Apply information technology tools to perform daily tasks assigned to legal services professionals.	Aligned
Analyze the role forensics plays in preventing and solving crimes.	Aligned
Use legal terminology to communicate within the legal services community.	Aligned
Compare and contrast different career fields in the legal services.	Aligned
Analyze the influence of the three branches of the U.S. Government (judicial, legislative and executive) on the legal services.	Aligned
Analyze the impact of the Fourth, Fifth, Sixth and Fourteenth Amendments on the provision of legal services.	Aligned
Security & Protective Services Career Pathway (LW-SEC)	
Demonstrate effective communications skills (e.g., writing, speaking, listening and nonverbal communication) when communicating security-related directives, technical concepts and other information.	Aligned
Utilize conflict resolution skills to resolve conflicts among individuals.	Aligned
Compare and contrast the roles, responsibilities, tools and techniques of the criminal justice and security fields.	Aligned
Describe the legal, regulatory and organizational guidelines governing the security and protective services.	Aligned

Analyze the impact of federal, state and local laws on the security and protective services field.	Aligned
Apply ethical and legal responsibilities of security and protective services personnel to various situations in the security and protective services field.	Aligned
Analyze the impact of the Fourth, Fifth, Sixth and Fourteenth Amendments on the security and protective services.	Aligned
Compare and contrast the different career fields in the security and protective services.	Aligned
Evaluate the application and relevance of crime prevention concepts and security assessments to security and protective services functions.	Aligned
Explain the application of risk management principles to the protection of assets in various settings.	Aligned
Describe the importance of utilizing good public relations techniques and building relationships in security and crisis situations.	Aligned
Describe the role of security systems in an overall security strategy.	Aligned
Explain the duties of security and protective services personnel in terrorism, homeland security and disaster preparedness.	Aligned
Apply basic management principles for the effective supervision and management of a security force or an organization's security program.	Aligned
Perform the roles and responsibilities of a security officer, including basic incident response.	Aligned
Compare types and techniques of security approaches within the public and private sectors.	Aligned
Demonstrate the concepts and techniques used to ensure the security of information-based and intangible assets.	Aligned
Summarize the importance and roles of intelligence analysis in crime prevention and homeland security.	Aligned

Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.

Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.

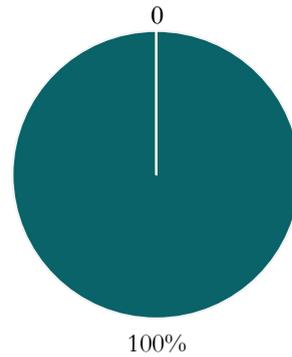
Not Aligned indicates that the CCTC standard listed is not covered by the state standards.

DESCRIPTION

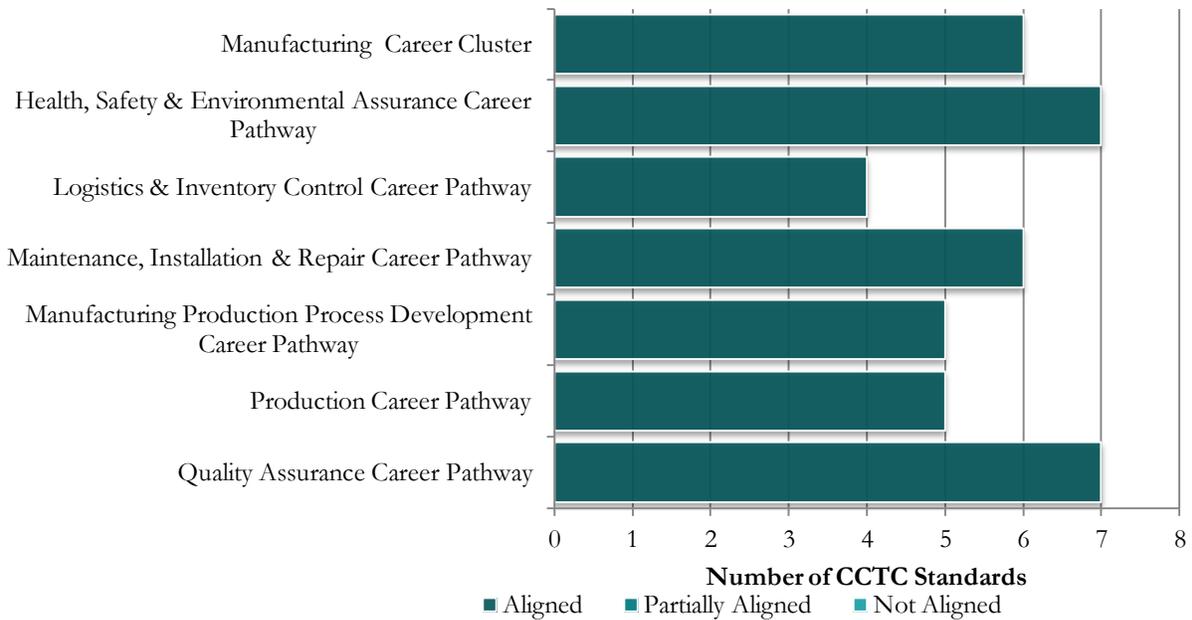
Planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.

FINDINGS

New Jersey's standards either partially or fully address 40 of the 40 CCTC standards in this Career Cluster. The results show that 100 percent of the content standards were aligned with the New Jersey secondary CTE standards.



■ Aligned ■ Partially Aligned ■ Not Aligned



ALIGNMENT OF MANUFACTURING

Evaluate the nature and scope of the Manufacturing Career Cluster and the role of manufacturing in society and in the economy.	Aligned
Analyze and summarize how manufacturing businesses improve performance.	Aligned
Comply with federal, state and local regulations to ensure worker safety and health and environmental work practices.	Aligned
Describe career opportunities and means to achieve those opportunities in each of the Manufacturing Career Pathways.	Aligned
Describe government policies and industry standards that apply to manufacturing.	Aligned
Demonstrate workplace knowledge and skills common to manufacturing.	Aligned
Health, Safety, & Environmental Assurance Career Pathway (MN-HSE)	
Demonstrate the safe use of manufacturing equipment.	Aligned
Develop safety plans for production processes that meet health, safety and environmental standards.	Aligned
Demonstrate a safety inspection process to assure a healthy and safe manufacturing environment.	Aligned
Evaluate a system of health, safety and/or environmental programs, projects, policies or procedures to determine compliance.	Aligned
Evaluate continuous improvement protocols and techniques in health, safety and/or environmental practices.	Aligned
Conduct job safety and health analysis for manufacturing jobs, equipment and processes.	Aligned
Develop the components of a training program based on environmental health and safety regulations.	Aligned
Logistics & Inventory Control Career Pathway (MN-LOG)	
Demonstrate positive customer service skills in regard to logistics and inventory control issues.	Aligned
Demonstrate proper handling of products and materials in a manufacturing facility.	Aligned
Develop a safety inspection process to assure a healthy and safe manufacturing facility.	Aligned
Manage inventory using logistics and control processes and procedures.	Aligned
Maintenance, Installation, & Repair Career Pathway (MN-MIR)	
Demonstrate maintenance skills and proficient operation of equipment to maximize manufacturing performance.	Aligned
Demonstrate the safe use of manufacturing equipment to ensure a safe and healthy environment.	Aligned
Diagnose equipment problems and effectively repair manufacturing equipment.	Aligned
Investigate and employ techniques to maximize manufacturing equipment performance.	Aligned

Implement a preventative maintenance schedule to maintain manufacturing equipment, tools and workstations.	Aligned
Implement an effective, predictive and preventive manufacturing equipment maintenance program.	Aligned
Manufacturing Production Process Development Career Pathway (MN-PPD)	
Produce quality products that meet manufacturing standards and exceed customer satisfaction.	Aligned
Research, design and implement alternative manufacturing processes to manage production of new and/or improved products.	Aligned
Monitor, promote and maintain a safe and productive workplace using techniques and solutions that ensure safe production of products.	Aligned
Implement continuous improvement processes in order to maintain quality within manufacturing production.	Aligned
Develop procedures to create products that meet customer needs.	Aligned
Production Career Pathway (MN-PRO)	
Diagnose production process problems and take corrective action to meet production quality standards.	Aligned
Manage safe and healthy production working conditions and environmental risks.	Aligned
Make continuous improvement recommendations based on results of production process audits and inspections.	Aligned
Coordinate work teams when producing products to enhance production process and performance.	Aligned
Demonstrate the safe use of manufacturing equipment.	Aligned
Quality Assurance Career Pathway (MN-QA)	
Evaluate production operations for product and process quality.	Aligned
Recommend and implement continuous improvement in manufacturing processes.	Aligned
Coordinate work teams to create a product that meets quality assurance standards.	Aligned
Employ project management processes using data and tools to deliver quality, value-added products.	Aligned
Perform safety inspections and training to ensure a safe and healthy workplace.	Aligned
Implement continuous improvement processes to maintain quality products.	Aligned
Identify inspection processes that ensure products meet quality specifications.	Aligned

Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.

Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.

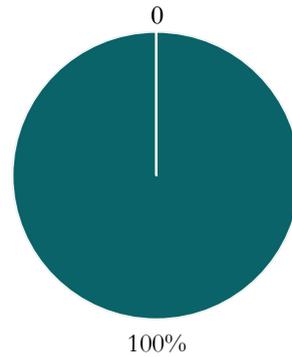
Not Aligned indicates that the CCTC standard listed is not covered by the state standards.

DESCRIPTION

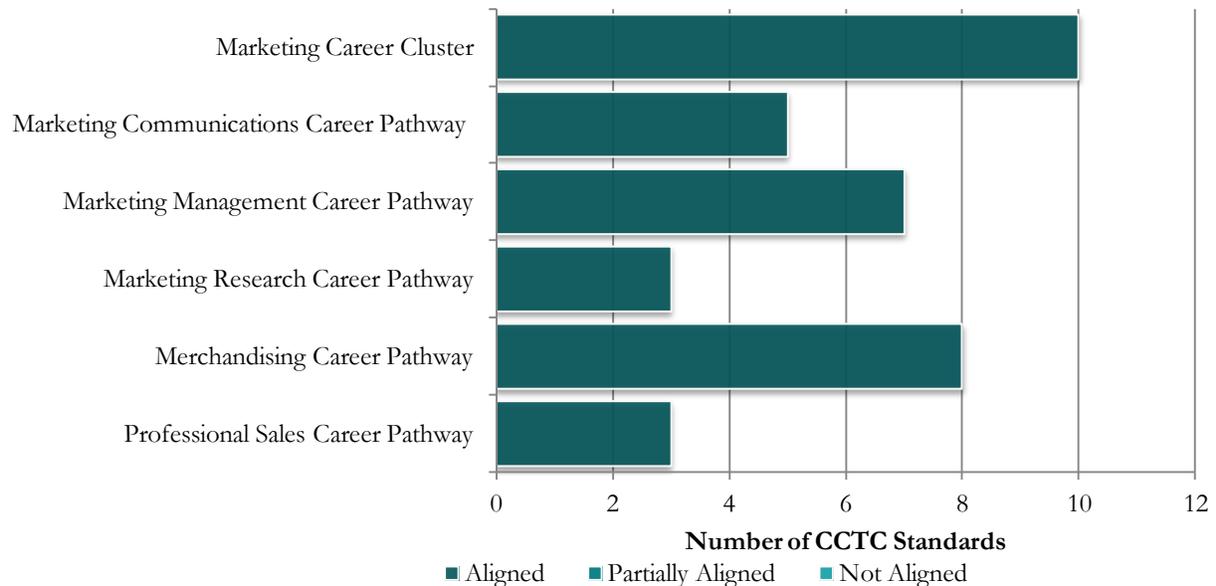
Planning, managing and performing marketing activities to reach organizational objectives such as brand management, professional sales, merchandising, marketing communications and market research.

FINDINGS

New Jersey's standards either partially or fully address 36 of the 36 CCTC standards in this Career Cluster. The results show that 100 percent of the content standards were aligned with the New Jersey secondary CTE standards.



■ Aligned ■ Partially Aligned ■ Not Aligned



ALIGNMENT OF MARKETING

Describe the impact of economics, economics systems and entrepreneurship on marketing.	Aligned
Implement marketing research to obtain and evaluate information for the creation of a marketing plan.	Aligned
Plan, monitor, manage and maintain the use of financial resources for marketing activities.	Aligned
Plan, monitor and manage the day-to-day activities required for continued marketing business operations.	Aligned
Describe career opportunities and the means to achieve those opportunities in each of the Marketing Career Pathways.	Aligned
Select, monitor and manage sales and distribution channels.	Aligned
Determine and adjust prices to maximize return while maintaining customer perception of value.	Aligned
Obtain, develop, maintain and improve a product or service mix in response to market opportunities.	Aligned
Communicate information about products, services, images and/or ideas to achieve a desired outcome.	Aligned
Use marketing strategies and processes to determine and meet client needs and wants.	Aligned
Marketing Communications Career Pathway (MK-COM)	
Apply techniques and strategies to convey ideas and information through marketing communications.	Aligned
Plan, manage and monitor day-to-day activities of marketing communications operations.	Aligned
Access, evaluate and disseminate information to enhance marketing decision-making processes.	Aligned
Obtain, develop, maintain and improve a marketing communications product or service mix to respond to market opportunities.	Aligned
Communicate information about products, services, images and/or ideas to achieve a desired outcome.	Aligned
Marketing Management Career Pathway (MK-MGT)	
Plan, organize and lead marketing staff to achieve business goals.	Aligned
Plan, manage and monitor day-to-day marketing management operations.	Aligned
Plan, manage and organize to meet the requirements of the marketing plan.	Aligned
Access, evaluate and disseminate information to aid in making marketing management decisions.	Aligned

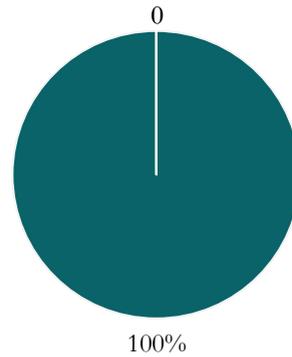
Determine and adjust prices to maximize return and meet customers' perceptions of value.	Aligned
Obtain, develop, maintain and improve a product or service mix in response to market opportunities.	Aligned
Communicate information about products, services, images and/or ideas.	Aligned
Marketing Research Career Pathway (MK-RES)	
Plan, organize and manage day-to-day marketing research activities.	Aligned
Design and conduct research activities to facilitate marketing business decisions.	Aligned
Use information systems and tools to make marketing research decisions.	Aligned
Merchandising Career Pathway (MK-MER)	
Plan, organize and lead merchandising staff to enhance selling and merchandising skills.	Aligned
Plan, manage and monitor day-to-day merchandising activities.	Aligned
Move, store, locate and/or transfer ownership of retail goods and services.	Aligned
Access, evaluate and disseminate marketing information to facilitate merchandising decisions and activities.	Aligned
Determine and adjust prices to maximize return and meet customers' perceptions of value.	Aligned
Obtain, develop, maintain and improve a product or service mix to respond to market opportunities.	Aligned
Communicate information about retail products, services, images and/or ideas.	Aligned
Create and manage merchandising activities that provide for client needs and wants.	Aligned
Professional Sales Career Pathway (MK-SAL)	
Access, evaluate and disseminate sales information	Aligned
Apply sales techniques to meet client needs and wants.	Aligned
Plan, organize and lead sales staff to enhance sales goals.	Aligned
<p>Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.</p> <p>Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.</p> <p>Not Aligned indicates that the CCTC standard listed is not covered by the state standards.</p>	

DESCRIPTION

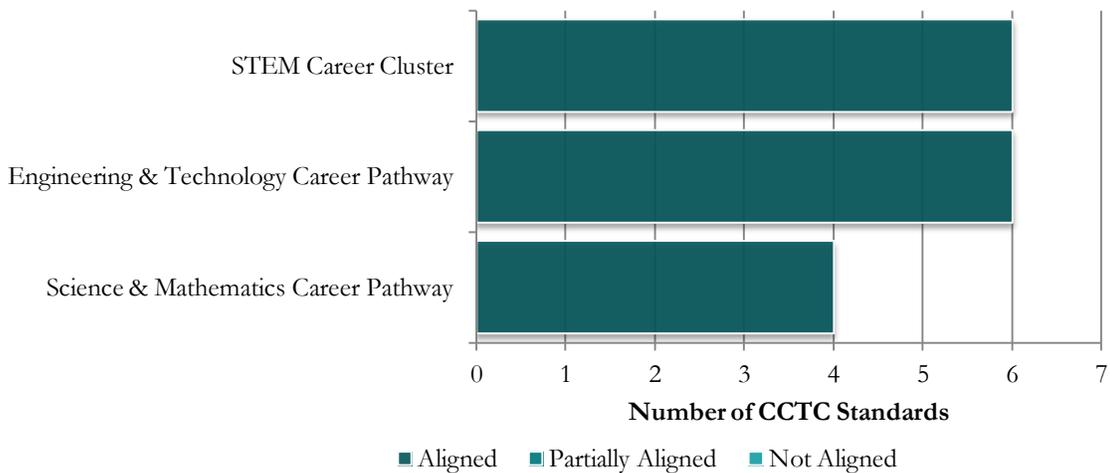
Planning, managing and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services and research and development services.

FINDINGS

New Jersey's standards either partially or fully address 16 of the 16 CCTC standards in this Career Cluster. The results show that 100 percent of the content standards were aligned with the New Jersey secondary CTE standards.



■ Aligned ■ Partially Aligned ■ Not Aligned



ALIGNMENT OF SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS

Apply engineering skills in a project that requires project management, process control and quality assurance.	Aligned
Use technology to acquire, manipulate, analyze and report data.	Aligned
Describe and follow safety, health and environmental standards related to science, technology, engineering and mathematics (STEM) workplaces.	Aligned
Understand the nature and scope of the Science, Technology, Engineering & Mathematics Career Cluster and the role of STEM in society and the economy.	Aligned
Demonstrate an understanding of the breadth of career opportunities and means to those opportunities in each of the Science, Technology, Engineering & Mathematics Career Pathways.	Aligned
Demonstrate technical skills needed in a chosen STEM field.	Aligned
Engineering & Technology Career Pathway (ST-ET)	
Use STEM concepts and processes to solve problems involving design and/or production.	Aligned
Display and communicate STEM information.	Aligned
Apply processes and concepts for the use of technological tools in STEM.	Aligned
Apply the knowledge learned in the study of STEM to provide solutions to human and societal problems in an ethical and legal manner.	Aligned
Apply the elements of the design process.	Aligned
Apply the knowledge learned in STEM to solve problems.	Aligned
Science & Mathematics Career Pathway (ST-SM)	
Apply science and mathematics to provide results, answers and algorithms for engineering and technological activities.	Aligned
Apply science and mathematics concepts to the development of plans, processes and projects that address real world problems.	Aligned
Analyze the impact that science and mathematics has on society.	Aligned
Apply critical thinking skills to review information, explain statistical analysis, and to translate, interpret and summarize research and statistical data.	Aligned
<p>Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.</p> <p>Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.</p> <p>Not Aligned indicates that the CCTC standard listed is not covered by the state standards.</p>	



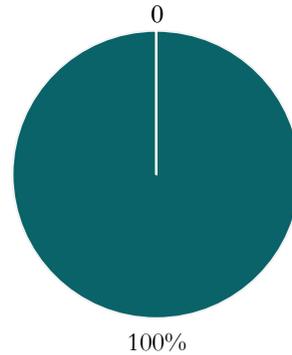
Transportation, Distribution & Logistics

DESCRIPTION

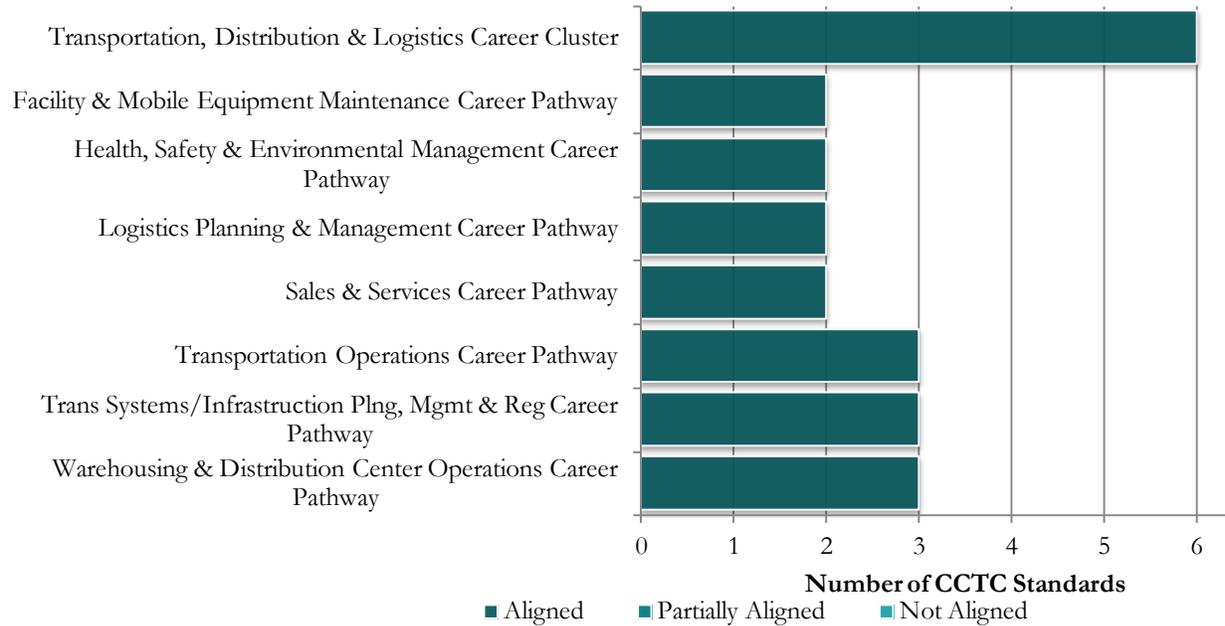
The planning, management and movement of people, materials and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

FINDINGS

New Jersey's standards either partially or fully address 23 of the 23 CCTC standards in this Career Cluster. The results show that 100 percent of the content standards were aligned with the New Jersey secondary CTE standards.



■ Aligned ■ Partially Aligned ■ Not Aligned



■ Aligned ■ Partially Aligned ■ Not Aligned

ALIGNMENT OF TRANSPORTATION, DISTRIBUTION & LOGISTICS

Describe the nature and scope of the Transportation, Distribution & Logistics Career Cluster and the role of transportation, distribution and logistics in society and the economy.	Aligned
Describe the application and use of new and emerging advanced techniques to provide solutions for transportation, distribution and logistics problems.	Aligned
Describe the key operational activities required of successful transportation, distribution and logistics facilities.	Aligned
Identify governmental policies and procedures for transportation, distribution and logistics facilities.	Aligned
Describe transportation, distribution and logistics employee rights and responsibilities and employers' obligations concerning occupational safety and health.	Aligned
Describe career opportunities and means to achieve those opportunities in each of the Transportation, Distribution & Logistics Career Pathways.	Aligned
Facility & Mobile Equipment Maintenance Career Pathway (TD-MTN)	
Develop preventative maintenance plans and systems to keep facility and mobile equipment inventory in operation.	Aligned
Design ways to improve facility and equipment system performance.	Aligned
Health, Safety, & Environmental Management Career Pathway (TD-HSE)	
Describe the health, safety and environmental rules and regulations in transportation, distribution and logistics workplaces.	Aligned
Develop solutions to improve performance of health, safety and environmental management services.	Aligned
Logistics Planning & Management Services Career Pathway (TD-LOG)	
Develop solutions to provide and manage logistics services for the company and customers.	Aligned
Analyze and improve performance of logistics systems to provide logistics planning and management services.	Aligned
Sales & Service Career Pathway (TD-SAL)	
Analyze the ongoing performance of transportation, logistics and distribution-related sales and service operations.	Aligned
Demonstrate the use of sales and ongoing service of products and services that are transportation related to promote development of existing and future clients and customers.	Aligned
Transportation Operations Career Pathway (TD-OPS)	
Develop and evaluate transportation plans to move people and/or goods to meet customer requirements.	Aligned

Analyze performance of transportation operations in order to improve quality and service levels and increase efficiency.	Aligned
Comply with policies, laws and regulations in order to maintain safety, security and health and mitigate the economic and environmental risk of transportation operations.	Aligned
Transportation Systems / Infrastructure Planning, Management & Regulation Career Pathway (TD- SYS)	
Develop plans to maintain and/or improve the transportation infrastructure.	Aligned
Assess, plan and manage the implementation of transportation services.	Aligned
Describe ways to improve the system utilization, flow, safety and environmental performance of transportation systems.	Aligned
Warehousing & Distribution Center Operations Career Pathway (TD-WAR)	
Demonstrate efficient and effective warehouse and distribution center operations.	Aligned
Describe ways to improve the performance of warehouse and distribution operations.	Aligned
Analyze compliance with company policies and government laws and regulations in warehouse and distribution operations.	Aligned
<p>Aligned indicates that the CCTC standard listed is covered by either one or more of the state standards.</p> <p>Partially Aligned indicates that the CCTC standard listed is partially covered by either one or more of the state standards.</p> <p>Not Aligned indicates that the CCTC standard listed is not covered by the state standards.</p>	

Appendix B: Study Methodology

The methodology for the Common Career Technical Core (CCTC) alignment study was developed by Global Skills X-Change to effectively produce an objective, third-party review of Career Technical Education (CTE) policy infrastructure and standards alignment to the CCTC for each state or territory. The research questions that drove the study included:

- What is the policy infrastructure of the state/territory's CTE Programs of Study and how are state secondary and postsecondary CTE standards developed, adopted, implemented and maintained?
- Are the state/territory's CTE standards aligned with the CCTC standards, including both the Career Cluster content standards and 12 Career Ready Practices?

For the purposes of this study, standards are defined as clear expectations of what students should know and be able to do at the end of a CTE program or course (i.e., verb + object + modifier¹ statements related to a Career Cluster, Career Pathway, or Career Ready Practice).

EXAMPLE STATE STANDARDS

- Discuss (verb) major operations that occur (object) in the food industry (modifier).
- Explain (verb) the hazards (object) associated with specific types of manufacturing (modifier) equipment and tools (object).
- Describe (verb) advertising and sales promotion techniques (object).
- Differentiate (verb) between ethical and legal issues (object) impacting healthcare (modifier).

Additionally, to be included in the analysis the standards must have been:

- Publicly available or provided by the State CTE Director/Staff;
- Acknowledged by the State Director during the interview;
- Approved/adopted by the state and used statewide at the secondary and/or postsecondary level; and
- Not reproductions of standards that are present elsewhere (e.g. industry/national standards)

Below, the key aspects of the study methodology are described in detail and in chronological order starting with the policy scan and leading to the alignment study. The methodology is concluded with a discussion of the study constraints and limitations, which are essential to appropriately interpreting the results of this study.

Outreach & Respondents

All State/Territory CTE Directors were invited to participate in the study by the National Association of State Directors of Career Technical Education Consortium (NASDCTEc) Executive Director via an invitation email. A subsequent invitation was sent by the research team to the State Directors (or designated point of contact) to schedule a one-hour interview. State Directors were informed that the purpose of the interview was to discuss the policy infrastructure regarding their state CTE standards.

¹ Modifiers are not necessary but common in standards statements. In many cases a verb + object standard statement is sufficient.

The research team requested that each state complete the Policy Scan Interview Protocol (hereafter the “Protocol”) in advance of the one-hour interview. If respondents did not complete the Protocol in advance, the interview was conducted by verbally examining the Protocol with the respondents over the phone.

State Directors were encouraged to include additional members of their team or partner agency who were knowledgeable of the CTE secondary and postsecondary standards and policy. Thus, in many cases multiple respondents compiled their responses to this interview in order to provide the most accurate and thorough data for the study. The opportunity for multiple respondents for each policy scan interview strengthens the reliability and validity of the policy scan results; however multiple respondents did not consistently occur across all states/territories due to variation in staffing and availability of state personnel.

Policy Scan

This portion of the study answered the following research question:

What is the policy infrastructure of the state/territory’s CTE Programs of Study and how are state secondary and postsecondary CTE standards developed, adopted, implemented and maintained?

DATA COLLECTION

The data collection phase of the policy scan for each state/territory included three steps, described below.

Initial Online Research

The research team conducted initial data collection of CTE policy and standards within secondary and postsecondary settings using resources publicly available online through each state/territory education website. Through this process, policy and programmatic information was archived for analysis.

Completion of the Policy Scan Interview Protocol

Three members of the research team led the policy scan interview data collection phase. The team was trained to use the Policy Scan Interview Protocol as a data collection tool with the respondents. As described above in the Outreach and Respondents section, the use of this tool was flexible based on the needs and preferences of each state/territory (i.e. respondents were free to complete the protocol in advance of the interview or complete the protocol on the phone with the researcher). This flexibility in method was preferable for all stakeholders involved in the study. It allowed the researchers to efficiently engage with the respondents to gather a predetermined set of information across all states in a limited amount of time so not to burden the respondents. Because the State Directors and associated respondents had the option to either complete the Protocol in advance of the interview in writing or verbally on the phone, the states/territories directly contributed to the richness of the data used for the analysis. All but one state participated in the policy scan interview process.

Respondent Validation of Policy Scan Interview Protocol and Documentation

Respondent validations² were used to improve the accuracy and validity of the results of the Protocol, whether written in advance or spoken over the phone. If the verbal interview was conducted, the notes were emailed to the respondents so they could correct or add additional information as needed. If the Protocol was completed in advance, the respondent validation was conducted during the one-hour interview time. Lastly, respondents were prompted to validate the results of the policy scan when they were asked to review the draft report for their state.

In sum, triangulation of three data sources that were corroborated using respondent validation informed the policy scan analysis:

1. Online/open source information
2. Policy Scan Interview Protocol responses from State Director and associated personnel
3. Associated policy documents provided by the State Director and associated personnel

DATA ANALYSIS

Data from the Policy Scan Interview Protocol were organized, coded and analyzed using an analytical framework referred to as the *CTE Standards Governance Framework*. The framework was based on the research question and includes four components: Development, Adoption, Implementation and Maintenance of state CTE standards.

A member of the research team used the CTE Standards Governance Framework to summarize and integrate the three data sources. Next, a senior policy researcher conducted a secondary analysis to validate the results of the initial analysis. Finally, respondent validation was used to corroborate the results of the policy scan. This was accomplished by sharing the draft results with the State Director and members of the NASDCTEc team with extensive policy analysis experience.

² Also called member check, respondent validation is a procedure largely associated with qualitative research, whereby a researcher submits materials relevant to an investigation for checking by the people who were the source of those materials.

Alignment Study

This portion of the study answered the following research question:

Are the state/territory's CTE standards aligned with the CCTC standards?

STANDARDS IDENTIFICATION

State/territory CTE standards were identified and initially verified with the State Director during the policy scan portion of the study.

For the purposes of this study, standards are defined as clear expectations of what students should know and be able to do at the end of a CTE program or course (i.e., verb + object + modifier statements related to a Career Cluster, Career Pathway or Career Ready Practice).

Additionally, to be included in the analysis the standards must have been:

- Publicly available or provided by the State CTE Director/staff
- Acknowledged by the State Director during the interview
- Approved/adopted by the state and used statewide at the secondary and/or postsecondary level
- Not reproductions of standards that are present elsewhere (e.g. industry/national standards)

In other words, the source state/territory standards used for the alignment study are considered *content standards* (e.g., what students need to know and be able to do if they participate in an Agriculture CTE program of study). In addition, *practice standards* (e.g. apply appropriate academic and technical skills) were identified to compare to the CCTC Career Ready Practices standards.

DISTINGUISHING STANDARDS

Some states do not have content standards that can be aligned to the CCTC. This could be, for example, because they have not been developed or because the state allows local districts to develop their own standards based on pre-set criteria (i.e., integration of national or local industry standards). In these cases, there is no one set of common, required standards in use consistently at the local level. Alignments between the CCTC and national, industry-developed standards were outside the scope of this study, given the extent and diversity of industry standards and the underlying intent to determine the alignment between the CCTC and state standards.

It is also common for states/territories to outline “standards” for establishing a CTE program in a school or standards for CTE course approval. These “standards” may not specify what students need to know or be able to do, but they instead are linked to accreditation or program approval processes (common in postsecondary settings). This type of state “standard” document was useful for the policy scan portion of the study but not for alignment of state/territory *content* or *practice standards* to the CCTC, as it does not meet the present definition of standards.

In the event where a state/territory did not have standards that could be aligned to the CCTC, a case-study approach was used to describe the state's CTE policy infrastructure, their specific approach to standards, and if they intend to adopt or adapt the CCTC in the future; however, no alignment results could be generated in comparison to the CCTC content and practice standards. A number of states with statewide secondary and/or postsecondary standards were not included in the alignment part of the study because

they had standards that were not publicly available (more often the case at the postsecondary level), were in the process of revising their standards during the alignment study and chose not to submit those drafts, or used very different formats across Career Cluster areas, making a consistent review impossible. In total, the secondary standards of 46 states and territories and the postsecondary standards of 11 states and territories were included in the study.

STANDARDS EXTRACTION

Once the standards were identified, the research team convened to determine the key elements of the state standards appropriate for alignment to the CCTC. This is termed “extraction” because the relevant state standards needed to be extracted from the source document into a database.

The level of extraction required an initial analysis of the state standards structure. Some standards have multiple levels, for example:

Competency

Descriptors

[Optional Descriptors]

In most cases the highest level of the standard, **Competency** in the example above, would be selected for alignment to the CCTC because these broad competencies were most likely to align to the CCTC statements which are also broad in nature. For some state standards the **Competency** level was not consistent throughout Career Clusters or even Career Pathways. For example, one Career Cluster may display the **Competency** level as a sentence (e.g., *The student will be able to demonstrate positive work behaviors and personal qualities*), which would be used for the alignment study (i.e. this statement meets our definition of a standard).

However, others may simply state a competency as a subject area (e.g., *Performing Arts*) or a noun (e.g., *Technology*). When subject areas or nouns are presented as standards, this does not meet the definition of a standard. That is, there is no description of what a student should be able to do using a verb, and there is no description of what a student should know using a clear object and modifier (if applicable).

In cases of standards inconsistency across and within Career Clusters, the lower level of the standard would be incorporated, such as the *Descriptors* in the example provided above. In no instance were the *Optional Descriptors*, or other **suggested or elective** standards, benchmarks or competencies, used for alignment to the CCTC, as they are not consistent and accurate reflections of what the state expects CTE students to know and be able to do at the end of a POS or course.

Once standards were identified for the alignment, they were extracted and placed into a database categorized by The National Career Clusters Framework, which is comprised of 16 Career Clusters and their related 79 Career Pathways, as well as the 12 Career Ready Practices. For states that do not organize their standards based on The National Career Cluster Framework, the research team made determinations about which standards were appropriate for aligning to which Career Cluster(s) and placed the standards in the corresponding Career Cluster Excel file, so the alignment determination to the appropriate Career Cluster(s) could be made. This was often facilitated by states using The National Career Clusters Framework as a way of organizing their standards conceptually (e.g., externally) if not in practice.

A number of states organized their standards using six Career Clusters (e.g., Environmental & Agricultural Systems; Business Marketing & Management; Human Services & Resources; Health Sciences; Industrial, Manufacturing & Engineering Systems and Communication & Information Systems) or a variation of a similarly condensed organization scheme. In this case, the research team analyzed the standards to determine whether they were a) further differentiated into The National Career Clusters Framework or b) integrated standards. If option b) was determined, standards were applied to all Career Clusters applicable. For example, if a state integrated Business, Management & Administration; Finance and Marketing standards into one Career Cluster, these standards would be applied to all three Career Clusters in the alignment analysis.

ALIGNMENT ANALYSIS

Upon completion of standards identification and extraction, the alignment analysis process consisted of two stages:

Automated algorithm to determine the extent to which the CCTC content is represented in the state standards

The GSX Alignment Tool³ was employed to assist in determining the extent to which CCTC content is represented in the state standards by scoring the match between two bodies of text by searching the first body of text (the state standards) for keywords associated with a second body of text (the CCTC). The research team developed the keywords after a careful review of the CCTC content and an extensive testing and optimization phase. These keywords included not only the objects and modifiers included in the CCTC statements but also synonyms and commonly used associated objects and modifiers. The use of technology to support standard and curriculum alignment has been documented in the educational community.⁴

The GSX Alignment Tool searched each state standard for keywords based on each CCTC standard. The GSX Alignment Tool then assigned a score indicating the degree to which the particular CCTC standard is represented by the state standards for that Career Cluster, based on the number of keyword matches. This score was then used to preliminarily place the results for a CCTC standard into one of three categories (Aligned, Partially Aligned, Not Aligned). The tool performed this matching task for all possible pairs of CCTC standards and state standards within each Career Cluster. If there were no corresponding standards for the entire Career Cluster, then alignment results were not generated for that Career Cluster. It is important to understand that when a result is not presented, that does not necessarily indicate that the state is “Not Aligned” to the CCTC as some states simply do not have corresponding standards for specific Career Clusters or Career Pathways by design.

Human-driven quality assurance (QA) process to ensure the validity of the automated algorithm results

Trained standards professionals reviewed the best matches for each CCTC standard to ensure that the CCTC standard was properly assigned to its category (Aligned, Partially Aligned, Not Aligned). Experience in examining the keyword matches over multiple states suggested that alignment (if it was

³ The GSX Alignment Tool is a proprietary alignment analysis research tool developed by Global Skills X-Change (GSX).

⁴ See the following articles and citations for a review of algorithmic alignment tools:

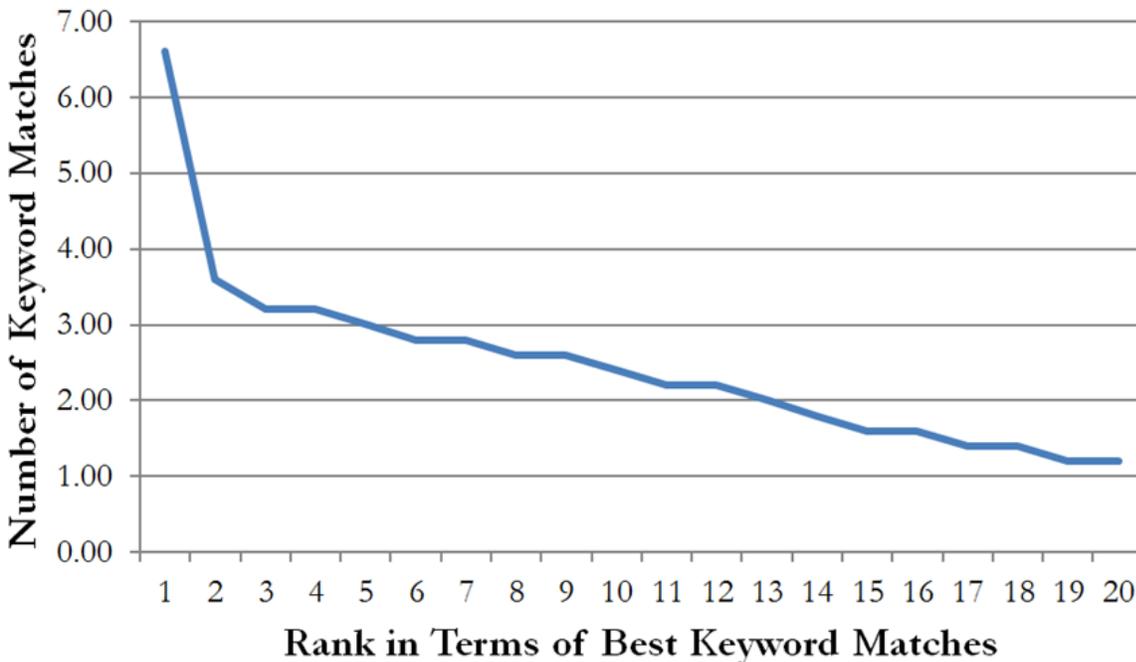
http://people.oregonstate.edu/~marshaby/Papers/ReitsmaMarshallChart_StandardsCrosswalking_JASIST2012.pdf

http://digitalcommons.usu.edu/itds_facpub/20/

genuine) would typically be found among the best two or three matches to a CCTC standard. The figure below shows a typical scree plot of keyword matches for an aligned standard.

This scree plot reflects the drop in the probability of an alignment after the first few best matches. To reduce the likelihood of missing a matching standard, however, the researchers reviewed the top five matching standards. CCTC standards that were well represented were placed in the “Aligned” category, CCTC standards that were only partially addressed by the state standards were placed in the “Partially Aligned” category, and CCTC standards that had little or no match in the state standards were deemed “Not Aligned.”

Typical Scree Plot of Keyword Matches for an Aligned Standard



DEFINING ALIGNMENT

During the alignment analysis two stages occurred: 1) an automated keyword search and 2) a determination of alignment.

The results of stage one are what can be considered a “crosswalk” of content based on carefully developed keywords. A crosswalk is an approach commonly used in educational settings that consists of a simple determination of whether particular content is being covered in standards or curricula.

It is in stage two where the alignment determinations took place and are of particular use and interest to state CTE leaders. ***Alignment, as defined in the present study, requires both the content (objects and modifiers) and verbs (level of proficiency).*** For example, educators would agree that “Develop a business plan in Agriculture, Food and Natural Resources (AFNR)” is not the same standard as “Understand components of a business plan in AFNR”. Therefore, in order for a state standard to be fully aligned to a particular CCTC standard there must be agreement between all components of the standards. The table below highlights the rules for determining Aligned, Partially Aligned and Not Aligned.

LEVELS OF ALIGNMENT			
	VERB	OBJECT	MODIFIER
ALIGNED	✓	✓	✓
PARTIALLY ALIGNED		✓	✓
NOT ALIGNED			

Therefore, alignment should be interpreted in light of both content and level of proficiency. The unit of analysis in the present study was the CCTC statements that are defined as end-of-program of study standards. As such, it is unlikely that standards targeting specifically the secondary (and not postsecondary) learner level would align to the CCTC in its entirety. A more in-depth discussion on the limitations, scope and assumptions of the study is presented next in order to guide the reader's interpretation of the results.

Interpreting the Results: Limitations, Scope & Assumptions of the Study

Each individual state/territory report should be reviewed in light of the limitations of the current study. Only then can the reader fully understand the results. The breadth of the study was considerable in that it strove to analyze CTE standards and associated policies established in both secondary and postsecondary programs across all states and territories in the United States during a short period of study (February 2013 – July 2013). The purpose of this study was to (a) provide a high-level overview of the policies supporting each state/territory's CTE standards and (b) to determine the degree to which the state CTE standards align to the CCTC standards and Career Ready Practices. In accordance with the vast breadth of the study and short timeframe allocated for research, a high-level scan of the policies of each state was conducted, as was an alignment study that was assisted using technology (the GSX Alignment Tool).

The data and the analyses are meant to be descriptive (based on the standards-related data collected for each state at the time of the study), and not evaluative. The results are presented to provide state/territory CTE stakeholders with technical information that might assist them if they choose to align their standards to the CCTC.

The research team was asked to collect data using methods that minimized the burden on the states. For example, researchers were permitted to conduct a one-hour interview with each CTE State Director and associated staff (if available). Any additional data were to be collected without burden on the state, and was therefore collected from the state website during the period of February through July of 2013. Some State Directors were just starting their tenure at the time of the interview and may have had limited institutional knowledge, and state websites may not have been updated with the latest information. Thus, it is possible that the State Director and the data available on the website may not have been sufficient to adequately portray the policies or fully define the appropriate state CTE standards.

To ensure proper instrumentation of the research, the researchers included only the data that met the criteria listed in Exhibit A. Also, in accordance with the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins) definition of CTE Programs of Study, only secondary and postsecondary policies

and standards were included, and those standards and policies were included mainly if they were acknowledged by the State Director during the one-hour interview.

EXHIBIT A

Criteria for Data Inclusion

State CTE Standards	<ul style="list-style-type: none"> • Clearly defined expectations of what students should know and be able to do at the end of a CTE program (i.e., verb + object statements related to a Career Cluster, Career Pathway, or Career Ready Practice) • Publicly available or provided by the CTE State Director/Staff • Acknowledged by the State Director during the interview • Approved/adopted by state • Not reproductions of standards that are present elsewhere (e.g. industry/national standards; The National Career Clusters Knowledge & Skill Statements)
Policy Information	Obtained in the interview with State Director/Staff or through supporting policy documentation provided by State Director/Staff. Given that state websites may not have the updated policy information, researchers used information gleaned from websites in a supporting role only.

The alignment portion of the study addresses the degree to which the state/territory standards of what students should know and be able to do are represented in the CCTC standards. Alignment studies of educational material, in general, tend to contain limitations related to the subjectivity of the term “alignment.” In the level-of-alignment table presented previously, the definition of alignment for the present study is highlighted (i.e., agreement between the state standards and the CCTC statements in verb, object and modifier) and goes beyond what is traditionally used to determine alignment—a “crosswalk” of content.

The methodology used in the present study strives to reduce the subjectivity by using advanced algorithms that are free of random human error and that are validated by trained standards professionals to make final alignment determinations. It was found that the advanced algorithms coupled with the trained standards professionals were the most reliable method of generating valid alignment determinations. Subject matter expert variability in judgments posed a risk to reliability and consistency within and across states, while standards professionals coupled with the advanced algorithms were evidenced as more reliable and as valid in their judgments while still maintaining an objective, third-party stance.

Alignment was conducted within Career Clusters only. In other words, only those CTE standards assigned to a particular Career Cluster were used to judge the alignment of CCTC Standards within that Career Cluster or Career Clusters. In the event that a state did not list their CTE standards in terms of the 16 Career Clusters or 79 Career Pathways aligned with The National Career Clusters Framework, researchers assigned the standards to Career Clusters. Typically, standards were assigned to one Career Cluster (or to the Career Ready Practices area) only. However, if the standard made explicit reference to a career clearly listed in the definition of a second Career Cluster, that standard was also applied in that second Career Cluster. Thus, with the exception of Career Ready Practices, the analysis provides for

assignment of CTE standards to multiple Career Clusters only when those standards explicitly refer to careers in those other Career Clusters.

State CTE standards vary in their format and specificity, and the rules developed to address this variance have important implications for the alignment judgments provided. A CCTC standard was judged as “Aligned” only if a particular state CTE standard addressed the CCTC standard with a verb, object and modifier equal to or greater than the CCTC standard. Thus, if the CTE Standards included multiple relevant statements that, by themselves did not address the breadth and depth of the CCTC standard, a judgment of “Partially Aligned” was applied. The definitions of each alignment level are provided in Exhibit B.

EXHIBIT B

Definitions of Different Levels of Alignment

The degree to which the statements in the CCTC standards and Career Ready Practices are represented in the state standards provided.

- ***Aligned* indicates that the State Standards address the CCTC standard.**
- ***Partially Aligned* indicates that the State Standards address the CCTC standard in part due to granularity differences and/or terminology differences.**
- ***Not Aligned* indicates that the State Standards are not addressing the CCTC standard based on the data provided.**

The extent to which a CCTC standard is considered aligned is dependent on a variety of factors related to the input (i.e., state standards) as well as what the state standards are being compared to (i.e., CCTC standards). One important factor to consider is that the CCTC are meant to be end-of-program of study standards. That is, these are standards that a student should meet after postsecondary education in the Career Cluster/Career Pathway. Importantly, most state standards are course-level, occupation-specific standards that are narrower in scope than, and therefore unlikely to be fully aligned to, the CCTC standards. Many state standards are pegged completely at the secondary level, while the CCTC are at the program-of-study level. As such, it should **not** be expected that all standards in a CCTC Career Cluster be 100% aligned with CTE standards designated to secondary students. Therefore, the results, especially the secondary results, should be interpreted with caution.

Lastly, the percentage of standards aligned, partially aligned and not aligned are presented for each Career Cluster in the state reports. These percentages are not related to passing or failing markers or categorizations such as A, B, C, D or F. For example, if 20% of standards are aligned for a particular Career Cluster, this does **not** imply a failing “grade.” The purpose of these results is to provide additional insight into alignment so that state/territory CTE stakeholders can make informed decisions about their CTE standards.

State-Specific Details: NEW JERSEY

KEY POLICY DOCUMENTS COLLECTED

- NJAC, Title 6A, Chapter 8 – Core Curriculum Content Standards, Implementation of the Core Curriculum Content Standards, Implementation of the Statewide Assessment System, Implementation of Graduation Requirements
- NJAC, Title 6A, Chapter 19 (proposed Amendments), Career and Technical Education Programs and Standards – General Provisions; Provision of Career and Technical Education; Development, Approval, and Delivery of Career and Technical Education; Career and Technical Education Accountability System
- Application for Approval/Re-approval of Career and Technical Education Programs and Programs of Study
- Higher Education Restructuring Act of 1994, as amended, Title 18A – New Jersey Presidents’ Council
- New Jersey Administrative Code, Title 6A, Chapter 19 (proposed Amendments), Career and Technical Education Programs and Standards – Career and Technical Education Accountability System
- New Jersey Five-Year Career and Technical Education State Plan

NEW JERSEY’S STANDARDS EXTRACTION

To determine the extent to which the New Jersey standards aligned with the CCTC, the *cumulative progress indicators* (CPIs) associated with all four New Jersey standards (i.e., Standards 9.1, 9.2, 9.3, and 9.4) were evaluated. CPIs from Standards 9.1, 9.2, and 9.3 along with CPIs for each Standard 9.4 strand were extracted and then compared to the corresponding CCTC Career Cluster- and Career Pathway-level standards and the CCTC’s Career Ready Practices.

