

TODAY'S SKILLS

TOMORROW'S CAREERS

**Career Clusters, Career Pathways,
Sample Occupations, and Programs of Study**



Connecticut State Department of Education
November 2019

Connecticut State Department of Education

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Perkins V

On July 31, 2018, President Trump signed the [Strengthening Career and Technical Education for the 21st Century Act](#) into law. This bill amends the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV) and this amended act is now referred to as Perkins V. The passage of Perkins V provides new opportunities to improve Career and Technical Education (CTE) and enables more flexibility for Connecticut to meet the unique needs of our learners, educators, and employers.

The Connecticut State Department of Education's (CSDE) vision demands that all Connecticut's students have access today to flexible CTE pathways that will position them to graduate tomorrow as innovators equipped with adaptable, transferable skills that will contribute to the growth of Connecticut's high-knowledge economy.

Career Clusters, Career Pathways, and Programs of Study

What are Career Clusters?

There are 16 National Career Clusters found in the [National Career Clusters Framework](#) developed in 1996 by the U.S. Department of Education, the Office of Vocational and Adult Education (OVAE), the National School-to-Work Office (NSTWO), and the National Skill Standards Board (NSSB). These clusters provide standardization and consistency across an ever-evolving labor market.

Career Clusters assist secondary and postsecondary institutions with:

- developing programs of study bridging secondary and postsecondary curricula;
- creating individual student plans of study for a complete range of career options; and
- empowering students to choose the Career and Technical Education (CTE) pathway that can lead to success in their academic and career endeavors.

Secondary and postsecondary institutions in Connecticut may offer courses and programs in any of the 16 clusters. However, Perkins V funds must be utilized on programs aligned with priorities in Connecticut that are informed by labor market data and projections. Each of the clusters has merit, yet when placed against the workforce data including Connecticut's long-term industry and occupational projections for 2016–2026, the following 12 Connecticut Perkins V Career Clusters best fit the workforce needs of Connecticut:

- Agriculture, Food, and Natural Resources;
- Architecture and Construction;
- Business Management and Administration;
- Education and Training;
- Finance;
- Health Science;
- Hospitality and Tourism;
- Information Technology;
- Manufacturing;
- Marketing;
- Science, Technology, Engineering, and Mathematics; and
- Transportation, Distribution and Logistics.

These 12 clusters will drive the pathways and programs or programs of study to be funded, supported, developed, or improved at the State and local levels under Perkins V. Previously, the Connecticut State Department of Education called these clusters “approved program areas.”

How did the CSDE choose the approved CTE Career Clusters?

The CSDE convened a core Perkins V leadership group consisting of key stakeholders to analyze Connecticut workforce needs, establish Program Career Clusters and Pathways, and inform the CTE Transition and State Plans. This workgroup consists of representatives from the Connecticut:

- Association of Boards of Education (CABE);
- Association of Public School Superintendents (CAPSS);
- Association of Schools (CAS);
- business and industry;
- Business and Industry Association (CBIA);
- Career and Technical Student Organizations (CTSO);
- Council of Administrators of Special Education (ConnCASE);
- Council for Education Reform (CCER);
- Department of Economic and Community Development (CDECD);
- Department of Higher Education (DHE);
- Department of Labor (CT-DOL);
- district Perkins administration;
- Office of Workforce Competitiveness;
- parent organization;
- Regional Education Service Centers (RESC);
- State Department of Education (CSDE);
- teachers' organizations (AFT and CEA);
- Women's Education and Legal Fund (CWELF); and
- Workforce Investment Boards (WIBs).

In February 2019, the leadership group analyzed the occupational areas of growth pertaining to Connecticut's long-term industry and occupational projections for 2016–2026, using [labor market data provided by the Connecticut Department of Labor](#). After this meeting, Perkins stakeholders reviewed proposed clusters and provided additional feedback. After consideration of the Perkins V leadership group analysis, stakeholder feedback, and the National Forum on Educational Statistics (NCES) and the School Courses for the Exchange of Data (SCED) coding system, the 12 approved Perkins V Connecticut Career Clusters were found to best fit the needs of Connecticut and will drive the pathways and programs or programs of study (POS) to be supported, developed, or improved at the State and local levels.

What do these Connecticut Career Clusters mean in regard to Perkins V funds?

Eligible secondary and postsecondary recipients shall only utilize their Perkins V funds for programs and activities that support the approved Connecticut Career Clusters.

What is a Career Pathway?

In Perkins V, the term “career pathways” has the meaning given to the term in Section 3 of the Workforce Innovation and Opportunity Act (29 U.S.C. 3102). A career pathway is defined as a combination of rigorous and high-quality education, training, and other services that:

- A. align with the skill needs of industries in the economy of the State or regional economy involved;
- B. prepare an individual to be successful in any of a full range of secondary or postsecondary education options, including apprenticeships registered under the Act of August 16, 1937 (commonly known as the “National Apprenticeship Act”; 50 Stat. 664, chapter 663; 29 U.S.C. 50 et seq.) (referred to individually in this Act as an “apprenticeship”, except in section 3226 of this title);
- C. include counseling to support an individual in achieving the individual’s education and career goals;
- D. include, as appropriate, education offered concurrently with and in the same context as workforce preparation activities and training for a specific occupation or occupational cluster;
- E. organize education, training, and other services to meet the particular needs of an individual in a manner that accelerates the educational and career advancement of the individual to the extent practicable;
- F. enable an individual to attain a secondary school diploma or its recognized equivalent, and at least one recognized postsecondary credential; and
- G. helps an individual enter or advance within a specific occupation or occupational cluster.

Thus, a career pathway is a **coordinated program of rigorous, high-quality education and work-related training** that aligns to industry needs and advances students in their career of choice. A career pathway is seamless and includes multiple possibilities leading to an industry-recognized credential, certificate or licensure, and/or an associate or baccalaureate degree and beyond.

To assist students in navigating various career choices aligned to Connecticut workforce needs, there are pathways organized by Connecticut Career Clusters. Eligible secondary and postsecondary recipients shall only utilize their Perkins V funds for programs and activities that support the approved Connecticut Career Clusters.

What is a Program of Study (POS)?

The CSDE believes all students must have access to career pathways that lead to success in college, career, and civic life. A POS is part of a student’s career pathway and consists of a non-duplicative sequence of academic and technical content at the secondary and postsecondary level. The POS progresses in specificity (beginning with all aspects of an industry or career cluster and leading to more occupation-specific instruction) and has multiple entry/exit points culminating in the attainment of a recognized postsecondary credential. **A POS includes a minimum of a two-course sequence in a single CTE content area.**

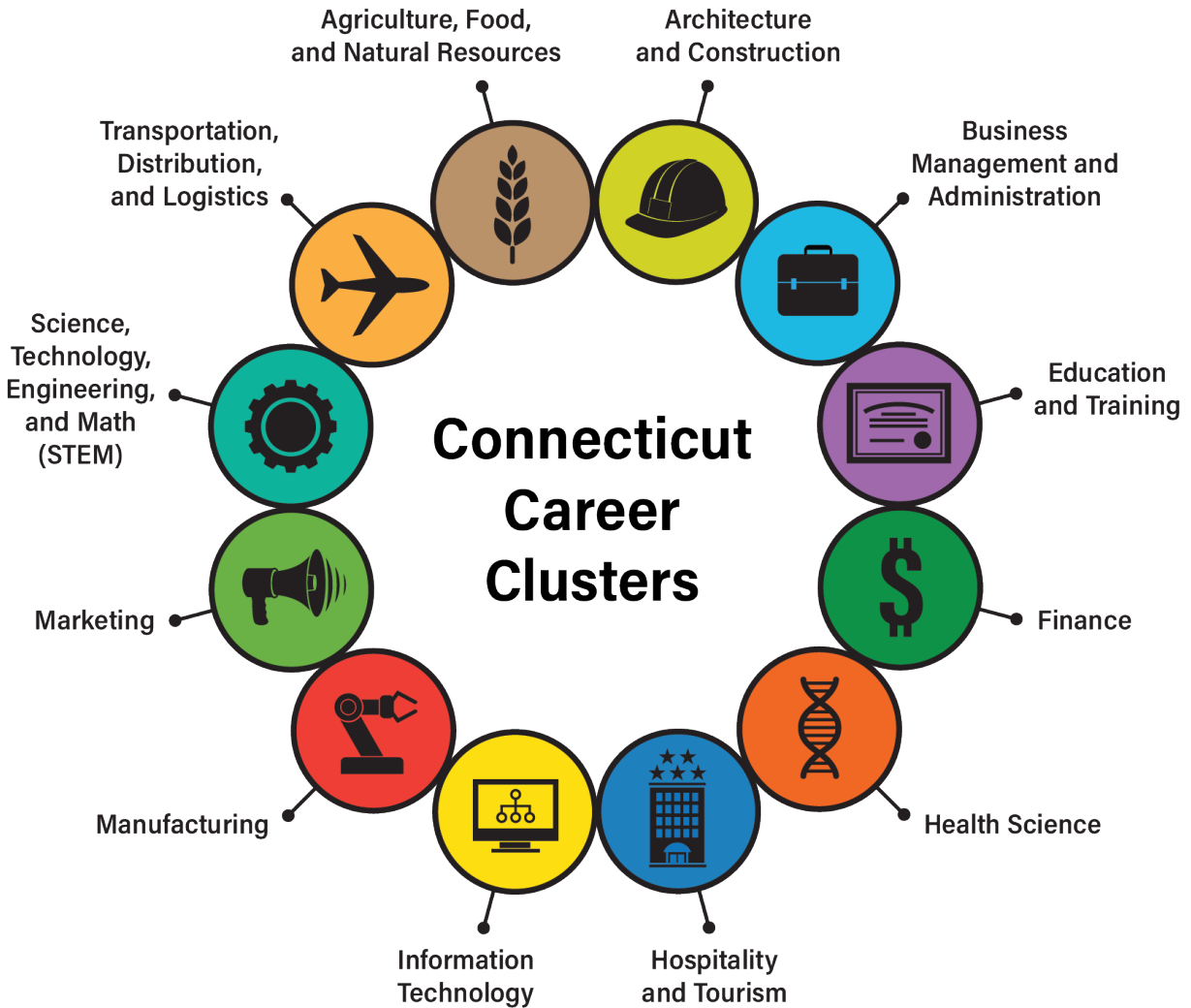


Connecticut Career Clusters

The 12 Connecticut Career Clusters have a variety of career pathways in which eligible secondary and postsecondary recipients can create programs of study for students, leading to numerous related occupations. The 12 Connecticut Career Clusters drive the pathways and programs of study to be funded, supported, developed, or improved at the State and local levels under Perkins V.

The 12 Connecticut Career Clusters

The 12 Connecticut Career Clusters have a variety of career pathways in which eligible secondary and postsecondary recipients can create programs of study for students, leading to numerous related occupations.



Connecticut Career Clusters, Defined



Agriculture, Food, and Natural Resources

Agriculture, Food, and Natural Resources focuses on 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 or resources.



Architecture and Construction

Architecture and Construction focuses on careers in designing, planning, managing, building, and maintaining the built environment.



Business Management and Administration

Business Management and Administration focuses on careers in planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations.



Education and Training

Education and Training focuses on planning, managing, and providing education and training services, and related learning support services. Current Connecticut teacher shortage areas include mathematics (7–12), science (7–12), technology education (PK–12), and world languages (7–12).



Finance

Finance focuses on services for financial and investment planning, banking, insurance, and business financial management.



Health Science

Health Science focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.



Hospitality and Tourism

Hospitality and Tourism focuses on management, marketing and operations of restaurants and other food services, lodging, attractions, recreation events, and travel related services.



Information Technology

Information Technology focuses on building linkages in information technology occupations for entry level, technical and professional careers related to the design, development, support, and management of hardware, software, multimedia and systems integration services.



Manufacturing

Manufacturing focuses on 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, and process engineering.



Marketing

Marketing focuses on planning, managing, and performing activities to reach organizational objectives.



Science, Technology, Engineering, and Mathematics (STEM)

STEM focuses on 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.

Although listed as a separate funding cluster, the Connecticut State Board of Education (Board) believes STEM education is key to preparing students for college, career, and civic life. Thus, high-quality STEM instruction should be incorporated across the clusters and pathways to provide students with numerous opportunities to problem solve, innovate and critically analyze complex problems.



Transportation, Distribution, and Logistics

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

*These definitions have been provided by
[Advance CTE](#) and the National Career Clusters Framework.*



Secondary Programs of Study

A program of study is part of a student's career pathway, and consists of a non-duplicative sequence of academic and technical content at the secondary and postsecondary level. The program of study progresses in specificity (beginning with all aspects of an industry or career cluster, and leading to more occupation-specific instruction) and has multiple entry/exit points culminating in the attainment of an industry-recognized postsecondary credential. Please refer to the appendix for sample programs of study from Killingly High School and Waterbury Career Academy.



Agriculture, Food, and Natural Resources Cluster

Natural Resources Systems Pathway

Today's Skills

Sample Courses

- 18501: Wildlife and Recreation Management
- 18502: Forestry Management
- 18504: Natural Resources Management
- 18506: Alternative Energy

Sample Courses for Work-based Learning

- 18548: Natural Resources
 - Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Agricultural educator, commercial fisherman, ecologist, fish and game officer, fisheries technician, forest technician, geology technician, geologist, hydrologist, mining engineer, park manager, pulp and paper manager, range technician, water monitoring technician, wildlife manager



Agriculture, Food, and Natural Resources Cluster

Agribusiness Systems Pathway

Today's Skills

Sample Courses

- 18201: Agribusiness Management
- 18202: Agricultural Entrepreneurship
- 18203: Agriculture Leadership
- 18205: Agriculture Computers and Technology

Sample Courses for Work-based Learning

- 18248: Agribusiness
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Agricultural chemical dealer, agricultural products buyer-distributor, bank/loan office, dairy herd supervisor, entrepreneur, farm manager, farmer-rancher-feedlot operator, feed-supply store manager, field representatives for bank, insurance company or government program, livestock manager, sales manager, salesperson, agricultural commodity broker, agricultural economist, agricultural educator, agricultural lender, banker/loan officer, farm investment manager, produce commission manager



Agriculture, Food, and Natural Resources Cluster

Animal Systems Pathway

Today's Skills

Sample Courses

- 18101: Animal Production/Science
- 18102: Small Animal Care
- 18103: Large Animal Care
- 18104: Equine Science
- 18105: Veterinary Science
- 18107: Animal Nutrition
- 18108: Animal Genetics

Sample Courses for Work-based Learning

- 118148: Animal Systems
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Animal caretaker-poultry manager, aquaculturalist, artificial insemination technician, dairy producer, equine manager, feed sales representative, livestock buyer, livestock inspector, livestock producer, veterinary assistant, agricultural educator, animal nutritionist, meat science researcher, physiologist, wildlife biologist, USDA inspector, veterinarian



Agriculture, Food, and Natural Resources Cluster

Aquaculture Pathway

Today's Skills

Sample Courses

- 18004: Biological Applications in Agriculture
- 18101: Animal Production/Science
- 18102: Small Animal Care
- 18106: Particular Topics in Animal Systems
- 18107: Animal Nutrition
- 18108: Animal Genetics
- 18109: Integrated Pest-Management
- 18306: Aquaculture
- 18307: Agriculture and Society
- 18310: Sustainable/Alternative Agriculture

Sample Courses for Work-based Learning

- 18148: Animal Systems
— Workplace Experience
- 18548: Natural Resource
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Aquatic research scientist, aquaculture technician, saltwater production manager, hatchery manager, aquaculture engineer, fish and game enforcement, fish health technician, environmental and regulatory enforcement officer, fisheries manager, habitat biologist, aquatic veterinarian, processing manager, seafood broker



Agriculture, Food, and Natural Resources Cluster Biotechnology Systems Pathway

Today's Skills

Sample Courses

- 18004: Biological Applications in Agriculture
- 18051: Plant Systems/Science
- 18101: Animal Production/Science
- 18305: Food Science Fundamentals
- 18307: Agriculture and Society
- 18308: Agricultural Biotechnology

Sample Courses for Work-based Learning

- 18548: Natural Resources
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Animal science research technician, biomedical engineer, biochemist, biological/clinical technician, biomanufacturing specialists, entomologist, food science researcher, food science technician, microbiologist, plant researcher, plant science technician, research veterinarian



Agriculture, Food, and Natural Resources Cluster Environmental Services Pathway

Today's Skills

Sample Courses

- 18004: Biological Applications in Agriculture
- 18051: Plant Systems/Science
- 18101: Animal Production/Science
- 18305: Food Science Fundamentals
- 18306: Aquaculture
- 18307: Agriculture and Society
- 18310: Sustainable/Alternative Agriculture
- 18406: Water Treatment
- 18504: Natural Resources Management

Sample Courses for Work-based Learning

- 18548: Natural Resources
— Workplace-Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Environmental compliance-assurance manager, environmental sampling and analysis scientist/technician, hazardous materials handler, hazardous materials technician, health and safety sanitarian, pollution prevention and control technician, solid waste technician, agricultural educator, chemical engineer, environmental engineer, pollution prevention and control manager, solid waste manager, toxicologist, water environment manager, water quality manager



Agriculture, Food, and Natural Resources Cluster

Plant Systems Pathway

Today's Skills

Sample Courses

- 18001: Introduction to Agriculture and Natural Resources
- 18002: Agriculture—Comprehensive
- 18003: Agriculture and Natural Resources — Comprehensive
- 18004: Biological Applications in Agriculture
- 18051: Plant Systems/Science
- 18052: Horticulture Science
- 18053: Ornamental Horticulture
- 18054: Turf and Landscape Management
- 18055: Soil Science

Sample Courses for Work-based Learning

- 18098: Plant Systems — Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Agricultural journalist, agricultural educator, biotechnology lab technician, bioinformatics specialist, botanist, plant breeder and geneticist, commodity marketing specialist, custom hay/silage operator, farmer, golf course manager, grain operation superintendent, green house manager, plant pathologist, soil and water specialist rancher, tree surgeon



Agriculture, Food, and Natural Resources Cluster

Food Products and Processing Systems Pathway

Today's Skills

Sample Courses

- 18301: Agricultural Production
- 18302: Agricultural Processing
- 18303: Plant Processing
- 18304: Animal Processing
- 18305: Food Science Fundamentals
- 18307: Agriculture and Society
- 18310: Sustainable/Alternative Agriculture
- 18311: Viticulture

Sample Courses for Work-based Learning

- 18349: Agriculture Production and Processing—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Agricultural communications specialist, agricultural salesperson, food and drug inspector, food meal supervisor, food processor, meat grader, meat processor, produce buyer, agricultural educator, bacteriologist, biochemist-nutritionist, bioengineer, dietician, food and fiber engineer, food scientist, meat science researcher, microbiologist, quality control specialist



Agriculture, Food, and Natural Resources Cluster **Power, Structural, and Technical Systems Pathway**

Today's Skills

Sample Courses

- 18401: Agriculture Power and Structural Systems
- 18402: Agriculture Power, Mechanics, and Equipment
- 18403: Agriculture Structures
- 18404: Agricultural Welding
- 20102: Power and Mechanics
- 21053: Emerging Technology

Sample Courses for Work-based Learning

- 18448: Agriculture Mechanics and Construction—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Agricultural applications software developer/programmer, agricultural educator, agricultural engineer, communication technician, database administrator, electronic systems technician, equipment/parts manager, GPS technician, heavy equipment maintenance technician, information lab specialist, machine operator, machinist, recycling technician, remote sensing specialist, welder, waste water treatment plant operator



Architecture and Construction Cluster

Construction Pathway

Today's Skills

Sample Courses

- 17001: Construction Careers Exploration
- 17002: Construction—Comprehensive
- 17004: Framing Carpentry
- 17013: Commercial Construction
- 17006: Woodworking
- 17007: Cabinetmaking
- 17009: Building Repair and Maintenance
- 17010: Home Maintenance
- 17016: Construction Management

Sample Courses for Work-based Learning

- 17998: Architecture and Construction
— Workplace Experience
(pre-apprenticeship experience)

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Carpenter, code official, concrete finisher, construction engineer, construction foreman/manager, construction inspector, contractor, design builder, electrician, electronic systems technician, equipment and material manager, general contractor/builder, heating, ventilation, air conditioning and refrigeration mechanic, mason, plumber, project estimator, project inspector, project manager, safety director, sheet metal worker, specialty contractor, superintendent, tile and marble setter



Architecture and Construction Cluster

Design/Pre-construction Pathway

Today's Skills

Sample Courses

- 17001: Construction Careers Exploration
- 21061: Wind and Turbine Construction and Operation
- 21101: Drafting Careers Exploration
- 21102: Drafting—General
- 21103: Drafting—Architectural
- 21104: Drafting—Civil/Structural
- 21105: Drafting—Electrical/Electronic
- 21106: Drafting—Technical/Mechanical
- 21107: CAD Design and Software
- 21108: Blueprint Reading

Sample Courses for Work-based Learning

- 121148: Drafting—Workplace Experience (pre-apprenticeship experience)

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Architect, building code official, building designer, civil engineer, code official, cost estimator, electrical engineer, electronic engineer, environmental designer, environmental engineer, fire prevention and protection engineer, industrial engineer, interior designer, landscape architect, materials engineer, mechanical engineer, regional and chain manager, director of non-profit agency/organization, operations specialties manager, industrial production manager



Architecture and Construction Cluster

Maintenance/Operating Pathway

Today's Skills

Sample Courses

- 17001: Construction Careers Exploration
- 17052: Refrigeration
- 17055: Air Conditioning, Heating and Refrigeration
- 17056: Heating, Ventilation and Air Conditioning
- 17059: Plumbing and Heating
- 17104: Industrial Electricity
- 17102: Electricity—Comprehensive
- 17108: Electricity/Electronics—General
- 17110: Analog and Digital Circuits

Sample Courses for Work-based Learning

- 17998: Architecture and Construction — Workplace Experience (pre-apprenticeship experience)

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Carpenter, code official, commissioning agent, construction engineer, construction foreman/manager, construction inspector, demolition engineer, environmental engineer, equipment and material manager, estimator, hazardous material remover, manufacturer representative, mason, safety director, security and fire alarm system installer, service contractor and field supervisor, subcontractor, system installer, wastewater maintenance technician



Business Management & Administration Cluster

Business Information Management Pathway

Today's Skills

Sample Courses

- 12009: Business Communications
- 12051: Introduction to Business
- 12052: Business Management
- 12053: Entrepreneurship
- 12056: International Business
- 12054: Business Law
- 12060: Business Ethics
- 10051: Information Management
- 10052: Database Management
- 10157: AP Computer Science A
- 10158: AP Computer Science B

Sample Courses for Work-based Learning

- 12048: Administration
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Information systems manager, accounting supervisor, adjuster, chief technology officer, auditor, budget analyst, budget manager, billing supervisor, management analyst, controller, merger and acquisitions manager, price analyst, top collections executive, information technology director, chief financial officer, finance director, certified public accountant, cost accountant



Business Management & Administration Cluster

General Management Pathway

Today's Skills

Sample Courses

- 12009: Business Communications
- 12051: Introduction to Business
- 12052: Business Management
- 12053: Entrepreneurship
- 12054: Business Law
- 12055: Business Principles and Management
- 12056: International Business and Marketing
- 12058: Human Resources Management
- 12060: Business Ethics
- 12104: Accounting

Sample Courses for Work-based Learning

- 12098: Management
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Advertising salesperson, auditor, business consultant, certified public accountant, corporate trainer, e-commerce analyst, entrepreneur, facilities manager, finance director, human resources manager, investment executive, marketing analyst, office manager, personnel recruiter, public relations manager, sales representative



Business Management & Administration Cluster **Operations Management Pathway**

Today's Skills

Sample Courses

- 12009: Business Communications
- 12051: Introduction to Business
- 12052: Business Management
- 12053: Entrepreneurship
- 12054: Business Law
- 12056: International Business
- 12057: Human Resources and Labor Relations
- 12058: Human Resources Management
- 12059: IB Business and Management
- 12060: Business Ethics
- 12105: Business Economics
- 10005: Business Computer Application

Sample Courses for Work-based Learning

- 12098: Management
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Training and development manager, operations analyst, sales manager, broker, agent, customer service supervisor, product manager, project manager, research and development manager, budget analyst, e-commerce manager and entrepreneur, international distribution manager, warehouse manager, logistics manager/ coordinator, marketing information manager, public relations specialist



Education & Training Cluster

Teacher/Training Pathway

Today's Skills

Sample Courses

- 19051: Childcare
- 19052: Child Development
- 19151: Teaching Profession
- 19152: Education Methodology
- 19153: Early Childhood Education
- 19255: Child Development/Parenting
- 19257: Life Skills
- 19258: Personal and Career Readiness
- 19259: Family and Interpersonal Relationships

Sample Courses for Work-based Learning

- 19198: Education—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Child care director, child life specialist, coach, early childhood teacher, elementary teacher, high school teacher, human resource trainer, middle school teacher, physical trainer



Finance Cluster

Insurance, Securities, and Investments Pathway

Today's Skills

Sample Courses

- 12009: Business Communications
- 12051: Introduction to Business
- 12052: Business Management
- 12053: Entrepreneurship
- 12054: Business Law
- 12060: Business Ethics
- 12101: Banking and Finance
- 12104: Accounting
- 12105: Business Economics
- 12106: Risk Management and Insurance
- 12107: Securities and Investments
- 12108: Advanced Accounting

Sample Courses for Work-based Learning

- 12148: Finance—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities.

Tomorrow's Careers

Sample Related Occupations

Asset manager, hedge fund manager, actuary, benefits consultant, branch manager, claim adjuster, claims agent, compliance specialist, marketing examiner, financial planner, insurance agent, insurance appraiser, insurance broker, investigator, special investigator, underwriter



Finance Cluster

Banking Services Pathway

Today's Skills

Sample Courses

- 12009: Business Communications
- 12051: Introduction to Business
- 12052: Business Management
- 12053: Entrepreneurship
- 12054: Business Law
- 12060: Business Ethics
- 12101: Banking and Finance
- 12104: Accounting
- 12105: Business Economics
- 12106: Risk Management and Insurance
- 12107: Investing
- 12108: Advanced Accounting

Sample Courses for Work-based Learning

- 12148: Finance—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Abstractor, accountant, acquisitions specialist, bill and account collector, branch manager, compliance officer, credit analyst, credit report provider, customer service representative, data processor, debt counselor, financial manager, financial planner, internal auditor, loan officer, loan processor, mortgage broker, network services technician, operations manager, relationship manager, repossession agent, teller, title researcher and examiner, trust officer



Finance Cluster

Accounting Services Pathway

Today's Skills

Sample Courses

- 12009: Business Communications
- 12051: Introduction to Business
- 12052: Business Management
- 12053: Entrepreneurship
- 12054: Business Law
- 12060: Business Ethics
- 12101: Banking and Finance
- 12104: Accounting
- 12105: Business Economics
- 12106: Risk Management and Insurance
- 12108: Advanced Accounting

Sample Courses for Work-based Learning

- 12148: Finance—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Auditor, accountant, certified public accountant, full-charge bookkeeper, systems designer



Finance Cluster

Business and Finance Pathway

Today's Skills

Sample Courses

- 12009: Business Communications
- 12051: Introduction to Business
- 12052: Business Management
- 12053: Entrepreneurship
- 12054: Business Law
- 12060: Business Ethics
- 12101: Banking and Finance
- 12102: Banking
- 12103: Finance
- 12104: Accounting
- 12105: Business Economics
- 12106: Risk Management and Insurance
- 12108: Advanced Accounting

Sample Courses for Work-based Learning

- 12148: Finance—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Financial planner, asset manager, hedge fund manager, actuary, benefits consultant, branch manager, claim adjuster, claims agent, compliance specialist, financial planner, insurance agent, insurance appraiser, insurance broker, sales agent, special underwriter



Health Science Cluster

Diagnostic Services Pathway

Today's Skills

Sample Courses

- 03051: Biology
- 03053: Anatomy and Physiology
- 03103: Organic Chemistry
- 14001: Exploratory Health Science
- 14002: Foundations of Health Science and Technology
- 14101: Dental Laboratory Technology
- 14102: Medical Laboratory Technology
- 14103: EKG Technology
- 14104: Phlebotomy
- 14105: Particular Topics in Diagnostic Services
- 14149: Diagnostic Services—Other
- 14154: Medical Terminology

Sample Courses for Work-based Learning

- 14148: Diagnostic Services
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Cardiovascular technologist, central supply technician, clinical lab technician, computer tomography (CT) technologist, cytogenetic technologist, cytotechnologist, diagnostic medical sonographer, electrocardiographic (ECG) technician, histotechnician, magnetic resonance (MR) technologist, mammographer, nuclear medicine technologist, pathology assistant, phlebotomist, positron emission tomography (PET) technologist, radiologic technologist/radiographer, exercise physiologist, geneticist, histotechnologist, medical technologist/clinical laboratory scientist, nutritionist, pathologist, radiologist



Health Science Cluster

Health Informatics Pathway

Today's Skills

Sample Courses

- 14001: Exploratory Health Science
- 14002: Foundations of Health Science and Technology
- 14151: Medical/Clerical Assisting
- 14153: Medical Office Procedures
- 14154: Medical Terminology
- 14156: Medical Coding and Transcription
- 14157: Health Informatics and Data Management

Sample Courses for Work-based Learning

- 14198: Health Information
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Community services specialist, data analyst, data information manager, health information coder, medical assistant, medical biller, medical information technologist, patient financial services representative, pharmacy services associate, reimbursement specialist, transcriptionist, unit coordinator, applied researcher, epidemiologist, ethicist, health care administrator, health educator, medical librarian/cybrarian, public health educator, risk manager, utilization manager



Health Science Cluster

Support Services Pathway

Today's Skills

Sample Courses

- 14001: Exploratory Health Science
- 14002: Foundations of Health Science and Technology
- 14154: Medical Terminology
- 14201: Central Service Technology
- 14002: Introduction to Allied Health Professions
- 14202: Health Support Services
- 14203: Health Unit Coordination

Sample Courses for Work-based Learning

- 14248: Health Support Services
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities.

Tomorrow's Careers

Sample Related Occupations

Biomedical/clinical technician, central services manager, environmental health and safety technician, material agent, biomedical/clinical engineer, environmental services manager, epidemiologist, facilities manager, food service administrator, industrial hygienist, materials manager



Health Science Cluster

Therapeutic Services Pathway

Today's Skills

Sample Courses

- 14001: Exploratory Health Science
- 14002: Foundations of Health Science and Technology
- 14101: Dental Laboratory Technology
- 14102: Medical Laboratory Technology
- 14103: EKG Technology
- 14104: Phlebotomy
- 14154: Medical Terminology
- 14055: EMT
- 14056: Surgical Technology

Sample Courses for Work-based Learning

- 14098: Therapeutic Services
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Anesthesiologist assistant, certified nursing assistant, clinical medical assistant, dental assistant, dental hygienist, dental lab technician, EMT/paramedic, licensed practical nurse, orthoptist/prosthetist, pharmacist, pharmacy technician, occupation or physical therapist, occupational or physical therapy assistant, radiologic technician, registered nurse, advanced practice nurse, respiratory therapist, surgical technician



Health Science Cluster

Medical Biotechnology Pathway

Today's Skills

Sample Courses

- 14001: Exploratory Health Science
- 14002: Foundations of Health Science and Technology
- 14251: Health Science
- 14154: Medical Terminology
- 14252: Biotechnology
- 14253: Pharmacology
- 14255: Biomedical Innovation

Sample Courses for Work-based Learning

- 14998: Health Sciences
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Animal services technician, animal services technologist, lab assistant—genetics, lab technician, maintenance and instrument technician, process technician, quality assurance technician, quality control technician, bioinformatics associate, bioinformatics scientist, bioinformatics specialist, biomedical chemist, biostatistician, cell biologist, clinical trials research associate, clinical trials research coordinator, geneticist, microbiologist, molecular biologist, pharmaceutical scientist, regulatory affairs specialist, research assistant, research associate, research scientist, toxicologist



Hospitality and Tourism Cluster Lodging Pathway

Today's Skills

Sample Courses

- 16001: Exploration of Hospitality Careers
- 16051: Exploration of Restaurant, Food and Beverage Services
- 16053: Food Service
- 16151: Introduction to Travel and Tourism
- 16148: Exploration of Lodging Careers
- 16102: Lodging—Comprehensive

Sample Courses for Work-based Learning

- 16148: Lodging—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Front desk supervisor, maintenance worker, chief engineer, director of human resources, director of operations, director of sales and marketing, food and beverage director, food and beverage manager, front office manager, general manager, lodging manager



Hospitality and Tourism Cluster

Recreation, Amusements, and Attractions Pathway

Today's Skills

Sample Courses

- 16001: Exploration of Hospitality Careers
- 16053: Food Service
- 16151: Introduction to Travel and Tourism
- 16201: Exploration of Recreation, Amusement and Attractions
- 16202: Recreation, Amusement and Attractions Comprehensive
- 16204: Recreation, Amusement and Attractions Management

Sample Courses for Work-based Learning

- 16248: Recreation, Amusement, and Attractions—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Facilities manager, historical/cultural/architectural/ecological ranger, parks and gardens ranger, resort trainer and instructor, sports promoter



Hospitality and Tourism Cluster

Restaurant, Food, Beverage, and Services Pathway (Culinary)

Today's Skills

Sample Courses

- 12156: Marketing—Food/Beverage Industry
- 12159: Marketing—Hospitality and Tourism
- 16001: Exploration of Hospitality Careers
- 16051: Exploration of Restaurant, Food and Beverage Services
- 16052: Restaurant, Food and Beverage Service—Comprehensive
- 16053: Food Service
- 16054: Nutrition and Food Preparation
- 16055: Restaurant Management and Operations
- 16056: Culinary Art Specialty

Sample Courses for Work-based Learning

- 16098: Restaurant, Food and Beverage Services—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Kitchen steward, line cook, restaurant server, catering and banquets manager, executive chef, food and beverage manager, kitchen manager, restaurant owner, pastry and specialty chefs



Hospitality and Tourism Cluster

Travel and Tourism Pathway

Today's Skills

Sample Courses

- 16001: Exploration of Hospitality Careers
- 16151: Introduction to Travel and Tourism
- 16152: Travel and Tourism—Comprehensive
- 16153: World Travel and Tourism
- 16154: Eco-tourism
- 12159: Marketing—Hospitality and Tourism

Sample Courses for Work-based Learning

- 16198: Travel and Tourism
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Convention services manager, destination manager, director of communication, director of convention and visitors bureau, director of marketing and advertising, director of membership development, director of tourism development, director of visitor services, tourism marketing specialist, travel agent



Information Technology Cluster

Cybersecurity Pathway

Today's Skills

Sample Courses

- 10002: Computing Systems
- 10003: Computer and Information Technology
- 10004: Computer Applications
- 10301: Computer Forensics
- 10302: Cyber Crime
- 10102: Networking Systems
- 14157: Health Informatics and Data Management
- 21059: Modeling and Simulation Technology

Sample Courses for Work-based Learning

- 10148: Networking Systems
— Workplace Experience
- 10298: Information Support and Services
— Workplace Experience
- 10998: Information Technology
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Cybersecurity analyst, cybersecurity architect, cyber crime analyst, cybersecurity consultant, cybersecurity engineer, cybersecurity specialist technician, incident analyst/responder



Information Technology Cluster

Information, Support, and Services Pathway

Today's Skills

Sample Courses

- 10002: Computing Systems
- 10003: Computer and Information Technology
- 10004: Computer Applications
- 10251: Computer Technology
- 10252: Computer Maintenance
- 10253: Information Support and Services
- 10254: IT Essentials: PC Hardware and Software
- 10255: CISCO: The Panduit Network Infrastructure Essentials (PN)

Sample Courses for Work-based Learning

- 10298: Information Support and Services — Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Account manager, applications integrator, data systems designer, database administrator, database analyst, e-business specialist, information systems architect, instructional designer, maintenance technician, PC support specialist, PC systems coordinator, product support engineer, support engineer, systems analyst, technical communicator, testing engineer



Information Technology Cluster

Network Systems Pathway

Today's Skills

Sample Courses

- 10102: Networking Systems
- 10101: Network Technology
- 10106: Wide Area Telecommunications and Networking
- 10107: Wireless Networks
- 10006: Telecommunications
- 10002: Computing Systems
- 10110: Microsoft Certified Professional (MCP)
- 10103: Area Network Design and Protocols
- 10109: Essentials of Network Operating Systems

Sample Courses for Work-based Learning

- 10148: Networking Systems
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Communication analyst, data communications analyst, information systems administrator, information systems operator, information technology engineer, network administrator, network architect, network engineer, network manager, network operations analyst, network security analyst, network specialist, network technician, network transport administrator, systems administrator, systems engineer, systems support leader, technical support specialist, telecommunications network technician



Information Technology Cluster

Programming and Software Development Pathway

Today's Skills

Sample Courses

- 10002: Computing Systems
- 10004: Computer Applications
- 10152: Computer Programming
- 10054: Data Systems/Processing
- 10153: Visual Basic (VB) Programming
- 10155: Java Programming
- 10011: Computer Science Principles
- 10019: AP Computer Science A

Sample Courses for Work-based Learning

- 10148: Networking Systems
 - Workplace Experience
- 10998: Information Technology
 - Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Applications analyst, applications engineer, computer engineer, data modeler, game developer, operating system designer/engineer, program manager, programmer, programmer analyst, software applications specialist, software applications tester, software design engineer, systems administrator, systems analyst, test engineer



Information Technology Cluster

Web and Digital Communications Pathway

Today's Skills

Sample Courses

- 10002: Computing Systems
- 10003: Computer and Information Technology
- 10004: Computer Applications
- 10201: Web Page Design
- 10202: Computer Graphics
- 10203: Interactive Media
- 10205: Computer Gaming and Design
- 10206: Mobile Applications

Sample Courses for Work-based Learning

- 10248: Media Technology
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

2D/3D artist, animator, audio/video engineer, designer, media specialist, production assistant, programmer, streaming media specialist, virtual reality specialist, web designer, webmaster, social networking specialist, search engine marketing specialist



Manufacturing Cluster

Logistics Inventory Control Pathway

Today's Skills

Sample Courses

- 10251: Computer Technology
- 13001: Exploring of Manufacturing Occupations
- 13002: Manufacturing—Comprehensive
- 13052: Materials and Processes
- 13302: Equipment Maintenance and Repair
- 13003: Industrial Maintenance

Sample Courses for Work-based Learning

- 13998: Manufacturing
— Workplace Experience
(pre-apprenticeship experiences)
- 22153: Diversified Occupations
(in Manufacturing)

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Communications, transportation and utilities manager, dispatcher, freight, stock, and material mover, industrial truck and tractor operator, logistical engineer, logistician, materials associate, materials handler, materials mover, process improvement technician, quality control technician, traffic manager, traffic, shipping, and receiving clerk



Manufacturing Cluster

Manufacturing Production Process Pathway

Today's Skills

Sample Courses

- 10251: Computer Technology
- 13001: Exploring of Manufacturing Occupations
- 13002: Manufacturing—Comprehensive
- 13052: Materials and Processes
- 13053: Metal and Wood Processing/Production
- 13054: Wood Processing/Production
- 13055: Metal Processing/Production
- 13056: Plastics Processing/Production

Sample Courses for Work-based Learning

- 13098: Processing/Production — Workplace Experience (pre-apprenticeship experiences)
- 22153: Diversified Occupations (in Manufacturing)

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Biomedical equipment technician, boilermaker, communication system installer/repairer, computer installer/repairer, electrical equipment installer/repairer, electrical and electronic technician and technologist, industrial electronic installer/repairer/manager, industrial machinery mechanic, instrument calibration and repairer, labor relations manager, manufacturing technician, power generating and reactor plant operator, precision inspector, process improvement technician, production manager, purchasing agent, tester and grader



Manufacturing Cluster

Maintenance, Installation, and Repair Pathway

Today's Skills

Sample Courses

- 10251: Computer Technology
- 13201: Metalwork Operations
- 13202: Metalworking
- 13203: Machining
- 13205: Sheet Metal
- 13207: Welding
- 13302: Equipment Maintenance and Repair
- 13303: Industrial Maintenance
- 21009: Robotics
- 21010: Computer Integrated Manufacturing

Sample Courses for Work-based Learning

- 13998: Manufacturing—Workplace Experience (pre-apprenticeship experiences)
- 22153: Diversified Occupations (in Manufacturing)
- 13348: Repair—Workplace Experience (pre-apprenticeship experiences)

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Biomedical equipment technician, boilermaker, communication system installer/repairer, computer installer/repairer, computer maintenance technician, electrical equipment installer/repairer, facility electrician, industrial electronic installer/repairer/manager, industrial machinery mechanic, industrial maintenance electrician, industrial maintenance technician/mechanic, instrument calibration and repairer, instrument control technician, job/fixture designer, laser systems technician, maintenance repairer, major appliance repairer, meter installer/repairer, plumber, pipe fitter and steam fitter, security system installer



Manufacturing Cluster

Manufacturing Production Pathway

Today's Skills

Sample Courses

- 13002: Manufacturing—Comprehensive
- 13052: Materials and Processes
- 13053: Metal and Wood Processing/Production
- 13055: Metal Processing/Production
- 13201: Metalwork Operations
- 13202: Metalworking
- 13203: Machining
- 13205: Sheet Metal
- 13207: Welding
- 21010: Computer Integrated Manufacturing

Sample Courses for Work-based Learning

- 13998: Manufacturing—Workplace Experience (pre-apprenticeship experiences)
- 22153: Diversified Occupations (in Manufacturing)

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Assembler, automated manufacturing technician, calibration technician, electrical installer and repairer, electromechanical equipment assembler, extruding and drawing machine setter/set-up operator, foundry worker, grinding/lapping/buffing machine operator, instrument maker, large printing press machine setter and set-up operator, machine operator, medical appliance maker, micro and nano fabrication technicians, milling machine



Manufacturing Cluster

Health, Safety, and Environmental Assurance Pathway

Today's Skills

Sample Courses

- 10251: Computer Technology
- 13001: Exploring Manufacturing Occupations
- 13052: Materials and Processes

Sample Courses for Work-based Learning

- 13998: Manufacturing—Workplace Experience (pre-apprenticeship experiences)
- 22153: Diversified Occupations (in Manufacturing)

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Environmental engineer, environmental specialist, health and safety representative, safety coordinator, safety engineer, safety team leader, safety technician



Manufacturing Cluster

Quality Assurance Pathway

Today's Skills

Sample Courses

- 110251: Computer Technology
- 13001: Exploring Manufacturing Occupations
- 13052: Materials and Processes
- 13302: Equipment Maintenance and Repair
- 13303: Industrial Maintenance
- 21009: Robotics
- 21010: Computer Integrated Manufacturing

Sample Courses for Work-based Learning

- 13998: Manufacturing—Workplace Experience (pre-apprenticeship experiences)
- 22153: Diversified Occupations (in Manufacturing)
- 13348: Repair—Workplace Experience (pre-apprenticeship experiences)

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Calibration technician, inspector, lab technician, process control technician, quality control technician, quality engineer, SPC coordinator



Marketing Cluster

Marketing Communications Pathway

Today's Skills

Sample Courses

- 12009: Business Communications
- 12051: Introduction to Business
- 12152: Marketing—Comprehensive
- 12053: Entrepreneurship
- 12056: International Business and Marketing
- 12060: Business Ethics
- 12162: Internet Marketing
- 12164: Marketing—Principles of Marketing
- 12165: Principles of Advertising
- 12166: Marketing Management
- 12168: Social Media Marketing

Sample Courses for Work-based Learning

- 12198: Marketing—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Account executive, account supervisor, advertising manager, analyst, art/graphics director, copywriter, creative director, interactive media specialist, marketing associate, media buyer/planner, promotions manager, public information director, public relations manager, research assistant, research specialist, sales promotion manager, sales representative, trade show manager



Marketing Cluster

Marketing Management Pathway

Today's Skills

Sample Courses

- 12009: Business Communications
- 12051: Introduction to Business
- 12152: Marketing—Comprehensive
- 12053: Entrepreneurship
- 12056: International Business and Marketing
- 12060: Business Ethics
- 12162: Internet Marketing
- 12163: Sports and Entertainment Marketing
- 12164: Marketing—Principles of Marketing
- 12165: Principles of Advertising
- 12166: Marketing Management
- 12168: Marketing—Commodities
- 12169: Social Media Marketing

Sample Courses for Work-based Learning

- 12248: Sales—Workplace Experience
- 12198: Marketing—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Analyst, brand manager, CRM manager, customer database manager, director of market development, forecasting manager, frequency marketing specialist, knowledge management specialist, marketing services manager, planning analyst, product planner, research project manager, research specialist/manager, strategic planner



Marketing Cluster

Professional Sales Pathway

Today's Skills

Sample Courses

- 12009: Business Communications
- 12060: Business Ethics
- 12051: Introduction to Business
- 12053: Entrepreneurship
- 12051: Introduction to Business
- 12152: Marketing—Comprehensive
- 12160: Marketing—Merchandising
- 12161: Retail Marketing
- 12162: Internet Marketing
- 12163: Sports and Entertainment Marketing
- 12164: Principles of Marketing
- 12165: Principles of Advertising
- 12166: Marketing Management
- 12169: Social Media Marketing
- 12202: Principles of Selling

Sample Courses for Work-based Learning

- 12248: Sales—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Account executive, administrative support representative, agent, broker, business development manager, channel sales manager, client relationship manager, customer service representative, field marketing representative, field representative, inbound call manager, industrial sales representative, key account manager, manufacturer's representative, national account manager, outside sales representative



Marketing Cluster

Marketing Research Pathway

Today's Skills

Sample Courses

- 12009: Business Communications
- 12051: Introduction to Business
- 12152: Marketing—Comprehensive
- 12053: Entrepreneurship
- 12056: International Business and Marketing
- 12060: Business Ethics
- 12162: Internet Marketing
- 12163: Sports and Entertainment Marketing
- 12164: Marketing—Principles of Marketing
- 12165: Principles of Advertising
- 12169: Social Media Marketing

Sample Courses for Work-based Learning

- 12198: Marketing—Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Administrative support representative, analyst, brand manager, CRM manager, customer satisfaction manager, customer service representative, database analyst, database manager, director of market development, forecasting manager, frequency marketing specialist, interviewer, knowledge management specialist, marketing services manager, planning analyst, product planner, research associate, research project manager, research specialist/manager, strategic planner



Marketing Cluster

Marketing Merchandising Pathway

Today's Skills

Sample Courses

- 12152: Marketing—Comprehensive
- 12160: Marketing—Merchandising
- 12161: Retail Marketing
- 12162: Internet Marketing
- 12163: Sports and Entertainment Marketing
- 12164: Principles of Marketing
- 12165: Principles of Advertising
- 12166: Marketing Management
- 12169: Social Media Marketing
- 12202: Principles of Selling

Sample Courses for Work-based Learning

- 12198: Marketing—Workplace Experience

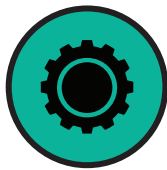
Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Department manager, merchandise buyer, merchandising manager, operations manager, retail marketing coordinator, sales manager, store manager, visual merchandise manager



Science, Technology, Engineering, & Math Cluster Engineering, Design, and Development Pathway

Today's Skills

Sample Courses

- 21002: Engineering Applications
- 21003: Engineering Technology
- 21004: Principles of Engineering
- 21007: Engineering Design and Development
- 21008: Digital Electronics
- 21009: Robotics
- 21010: Computer Integrated Manufacturing
- 21011: Civil Engineering
- 21013: Aerospace Engineering
- 21014: Biotechnical Engineering

Sample Courses for Work-based Learning

- 21048: Engineering
— Workplace Experience
- 21998: Engineering and Technology
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Aerospace engineer, automotive engineer, chemical engineer, computer engineer, design engineer, electronics engineer, engineering manager, engineering and related technician and technologist, industrial engineer, manufacturing engineer, mechanical engineer, software engineer, mechanical engineering technician, robotics engineer, robotics technician, water or wastewater engineer



Transportation, Distribution and Logistics Cluster

Health, Safety, and Environmental Management Pathway

Today's Skills

Sample Courses

- 20001: Transportation, Distribution, and Logistics
- 20101: Energy and Power
- 20102: Power and Mechanics

Sample Courses for Work-based Learning

- 20098: Operation:
 - Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Health and safety manager, industrial health and safety engineer, environmental scientist and specialist, environmental science and protection technician, environmental manager and engineer, environmental compliance inspector, safety analyst



Transportation, Distribution and Logistics Cluster

Facility and Mobile Equipment Maintenance Pathway

Today's Skills

Sample Courses

- 20101: Energy and Power
- 20104: Automotive Mechanics
- 20106: Automotive Service
- 20107: Diesel Mechanics
- 20110: Small Engine Mechanics
- 20111: Marine Mechanics
- 20113: Aircraft Power Plant
- 20116: Automotive Body repair
- 20118: Boat Repair/Refinishing
- 20102: Power and Mechanics

Sample Courses for Work-based Learning

- 20148: Mechanics and Repair:
 - Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

General: facility maintenance manager and engineer, industrial equipment mechanic, mobile equipment maintenance manager, mobile heavy equipment mechanic

Air/space: aerospace engineering and operations technician, aircraft mechanic and service technician, airframe mechanic, power plant mechanic, aircraft engine specialist, avionics technician

Water: ship mechanic and repairer, motorboat mechanic, automotive/truck mechanic and body repairer

Rail: rail car repairer, signal and track switch repairer, rail locomotive mechanic and repairer

Road: electronic equipment installer and repairer (motor vehicle), automotive body and related repairer, automotive service technician and mechanic, automotive master mechanic, automotive specialty technician, bus and truck mechanic and diesel engine specialist, motorcycle mechanic



Transportation, Distribution and Logistics Cluster

Logistics, Planning, and Management Pathway

Today's Skills

Sample Courses

- 02152: Warehouse Operations
- 20001: Transportation, Distribution, and Logistics
- 20101: Energy and Power
- 20102: Power and Mechanics

Sample Courses for Work-based Learning

- 20098: Operation:
 - Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Logistician, logistics manager, logistics engineer, logistics analyst, logistics consultant, international logistics specialist



Transportation, Distribution and Logistics Cluster

Sales and Service Pathway

Today's Skills

Sample Courses

- 02152: Warehouse Operations
- 12164: Principles of Marketing
- 12201: Cashier/Checker Operations
- 12202: Principles of Selling
- 20001: Transportation, Distribution and Logistics
- 20101: Energy and Power
- 20102: Power and Mechanics

Sample Courses for Work-based Learning

- 20098: Operation:
 - Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Marketing manager, sales manager, sales representative of transportation/logistics services, reservation, travel and transportation agent, cargo and freight agent, customer service manager



Transportation, Distribution and Logistics Cluster

Transportation Systems/Infrastructure Planning, Management, and Regulation Pathway

Today's Skills

Sample Courses

- 20001: Transportation, Distribution and Logistics
- 20052: Heavy Equipment Operations
- 20101: Energy and Power
- 20102: Power and Mechanics
- 20112: Heavy Equipment Mechanics
- 21002: Engineering Applications
- 21003: Engineering Technology
- 21004: Principles of Engineering
- 21007: Engineering Design and Development
- 21011: Civil Engineering

Sample Courses for Work-based Learning

- 20098: Operation:
— Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Transit systems general—intermodal—urban and regional planner, civil engineer, engineering technician, surveying and mapping technician, government service executive, environmental compliance inspector



Transportation, Distribution and Logistics Cluster

Transportation Operations Pathway

Today's Skills

Sample Courses

- 20001: Transportation, Distribution and Logistics
- 20051: Truck and Bus Driving
- 20052: Heavy Equipment Operation
- 20053: Aviation
- 20054: Boat Operation
- 20055: Pilot Training
- 20102: Power and Mechanics
- 02153: Emerging Technology

Sample Courses for Work-based Learning

- 20098: Operation:
 - Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

Air/space: transportation manager, commercial pilot, flight engineer, flight attendant, air traffic controller, aircraft cargo handling supervisor, air-field operations specialist,

Rail: transportation manager, locomotive engineer, locomotive firer, railyard conductor and yardmaster, railroad brake, signal and switch operator, railyard engineer

Water: transportation manager, captain, pilot of water vessels, sailor and marine oiler, seamen, ship and boat captain, ship engineer, bridge and lock tender

Road: transportation manager, dispatcher, traffic manager, truck driver (tractor-trailer), truck driver (light or delivery services), bus driver (transit and intercity), school bus driver, taxi driver and chauffeur

Transit systems: transportation manager, dispatchers traffic managers, traffic manager, bus drivers (transit and intercity), subway and streetcar operator



Transportation, Distribution and Logistics Cluster

Warehousing and Distribution Center Operation Pathway

Today's Skills

Sample Courses

- 20001: Transportation, Distribution, and Logistics
- 20052: Heavy Equipment Operations
- 20101: Energy and Power
- 20102: Power and Mechanics
- 20112: Heavy Equipment Mechanics
- 02152: Warehouse Operations

Sample Courses for Work-based Learning

- 20098: Operation:
 - Workplace Experience

Sample Dual Enrollment Experiences

College Career Pathways, UConn Early College Experiences, and/or locally developed and contextualized articulation agreements with colleges and universities

Tomorrow's Careers

Sample Related Occupations

First-line supervisor/managers of helper, laborer, and material mover (hand), first-line supervisor/manager of transportation and material (moving machine and vehicle operator), industrial and packaging engineer, laborer and freight, stock and material mover (hand) car, truck and ship loader, packer and packager-hand, shipping and receiving clerk, traffic, production, planning, expediting clerk, storage and distribution manager, warehouse manager



Industry-Recognized Credentials (IRCs)

IRCs are defined as the verification of qualification issued to students certifying they have the necessary knowledge, skills, and competencies to be recruited, hired, retained, or advanced by employers.

Industry-Recognized Credentials (IRCs)

IRCs include:

- industry-recognized certificate/certification;
- certificate of completion of an apprenticeship or a license issued by a Connecticut State agency; or
- associate or baccalaureate degree as part of an early college model.

The Connecticut State Department of Education (CSDE) does not have an “approved” or “required” list of IRCs. To assist in creating robust pathways for students, the CSDE consulted with stakeholders to build the following list of certificates/certifications valued by Connecticut’s business and industry.



Agriculture, Food, and Natural Resources

- OSHA 10-Hour General Industry Certification
- OSHA 30-Hour General Industry Certification
- Forest Steward Council (FSC) Certification
- Waste Water/Water Treatment
- Hazardous Material Handling (HAZMAT) Certification
- Pre-apprenticeship CT-DOL



Architecture and Construction

- Ladder and Scaffolding Training and Certification
- OSHA 10-Hour General Industry Certification
- OSHA 30-Hour General Industry Certification
- Autodesk Certified User
- Adobe
- HVAC Excellence Employment Ready
- LEED Green Associate
- CSST Certification—Gas Supply Systems
- Technician Certification Refrigerant Recovery/Recycling
- HVAC TracPipe Certification
- Pex Tubing Certification
- Wardflex Training
- Arc Flash Electrical Safety

- Power Actuated Tools Training and Certification
- ICE Residential Air Conditioning and Heating
- Certified SolidWorks Associate (CSWA)
- Lean Six Sigma Yellow Belt
- Pre-apprenticeship CT-DOL



Business Management and Administration

- Microsoft Office Suite
- CompTIA
- Cisco
- Intuit QuickBooks
- Microsoft Office Advanced
- Pre-apprenticeship CT-DOL



Education and Training

- First Aid, CPR, AED
- Child Development Associate
- Parapro Certificate
- Pre-apprenticeship CT-DOL



Finance

- Microsoft Office Suite
- Intuit QuickBooks
- Microsoft Office Advanced
- Pre-apprenticeship CT-DOL



Health Science

- CARES
- First Aid, CPR, AED
- Emergency Medical Technician or Responder
- Certified Nurse Aid CT
- Certified Pharmacy Technician (CPHT)
- Pre-apprenticeship CT-DOL



Hospitality and Tourism

- OSHA 10-Hour General Industry Certification
- First Aid, CPR, AED
- ServSafe Food Protection Managers Certification
- Certified Guest Service Professional (CGSP)
- National ProStart Certificate of Achievement
- Pre-apprenticeship CT-DOL



Information Technology

- Microsoft Office Suite
- Adobe
- Cisco
- Oracle
- CompTIA
- Microsoft Office Advanced
- Pre-apprenticeship CT-DOL



Manufacturing

- OSHA 10-Hour General Industry Certification
- OSHA 30-Hour General Industry Certification
- Certified SolidWorks Associate (CSWA)
- National Institute of Metalworking Skills (NIMS)
- AWS
- Mastercam
- Pre-apprenticeship CT-DOL



Marketing

- National Retail Federation Customer Service Certification
- Microsoft Office Suite
- Microsoft Office Advanced
- Pre-apprenticeship CT-DOL



Science, Technology, Engineering, and Mathematics (STEM)

- OSHA 10-Hour General Industry Certification
- OSHA 30-Hour General Industry Certification
- Lean Six Sigma Yellow Belt
- Certified SolidWorks Associate (CSWA)
- Pre-apprenticeship CT-DOL



Transportation, Distribution, and Logistics

- OSHA 10-Hour General Industry Certification
- OSHA 30-Hour General Industry Certification
- ASE
- S/P2 Automotive Certification
- Pre-apprenticeship CT-DOL



Appendix: Learn Together, Grow Together CT

Killingly High School and Waterbury Career Academy

Thank you to Killingly High School and Waterbury Career Academy for sharing their innovative practices regarding programs of study for students. Fellow districts may borrow, adapt, and put into use these model programs of study as they work toward the common goal of providing rigorous academic content and preparing students for further postsecondary education and training.

Program of Study: Killingly High School

Information Technology Cluster

Computer Programming Pathway

Today's Skills

Required Courses:

- 10152: Introduction to Programming (QVCC)
- 10153: Visual Basic
- 12009: Business Communication (ECSU)
- 10198: Job Shadow

Additional Courses:

- 10157: AP Computer Science
- 02103: Trigonometry
- 02121: College Calculus
- 02124: AP Calculus AB
- 02125: AP Calculus BC
- 21004: Principles of Engineering
- 21009: Advanced Technology—Robotics

Courses for Work-based Learning:

- 10198: Computer Programming—
Workplace Experience Job Shadow

Sample Dual Enrollment Experiences

Quinebaug Valley Community College
and Eastern Connecticut State University

Industry-Recognized Credentials:

- Cisco Certifications
- CompTia Certifications
- Microsoft Certifications
- Oracle Certifications

Tomorrow's Careers

Applications analyst, applications engineer, computer engineer, data modeler, game developer, operating system designer/engineer, program manager, programmer, programmer analyst, software applications specialist, software applications tester, software design engineer, systems administrator, systems analyst, test engineer

Program of Study: [Waterbury Career Academy](#)

Health Sciences Cluster

Therapeutic Services Pathway

Today's Skills

Courses:

- 14001: Exploratory—Health Sciences Grade 9
- 14002: Foundations of Health Science and Technology Grade 10
- 14002: Introduction to Allied Health Professionals Grade 11 (UConn ECE)
- 14154: Medical Terminology (UConn ECE)
- 14051: Certified Nurse Aid (CNA)
- 14154: Medical Assistant
- 03051: Principles of Biology (UConn ECE)
- 03101: General Chemistry (UConn ECE)
- 04256: AP Psychology

Courses for Work-based Learning:

- 14098: Therapeutic Services — Workplace Experience
- CNA 60 hour clinical practicum in long-term skilled nursing facility; and
- Pharmacy Technician 100 hour externship at CVS Pharmacy

Other Work-Based Learning Experiences:

- Waterbury Hospital Summer Bridge Program
- Waterbury Hospital Job Shadow Program

Sample Dual Enrollment Experiences

UConn Early College Experiences

Industry-Recognized Credentials:

- CT Department of Public Health CNA Certification
- CT Department of Consumer Protection Pharmacy Technician Certification
- CPR/BLS Certification
- U.S. Department of Homeland Security Stop the Bleed Certification
- OSHA 10 General Industry Certification

Tomorrow's Careers

Anesthesiologist assistant, certified nursing aid, clinical medical assistant, data entry coordinator, dental assistant/hygienist, dental lab technician, EMT/paramedic, licensed practical nurse, orthoptist/prosthetist, pharmacist/pharmacy technician, occupational or physical therapist/assistant, radiologic technician, registered nurse, respiratory therapist, surgical technician



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