



National Research Center for Career and Technical Education
University of Louisville, College of Education and Human Development, Louisville, KY 40292
Phone: 502-852-4727 • Toll-Free: 877-372-2283 • Fax: 502-852-3308
Email: nrccte@louisville.edu • www.nrccte.org

Center Partners

University of
Louisville

University of
Minnesota

Cornell University

Clemson University

Association for
Career and Technical
Education
(ACTE)

National Association
of State Directors of
Career Technical
Education
Consortium
(NASDCTEc)

Southern Regional
Education Board
(SREB)

National Occupational
Competency Testing
Institute
(NOCTI)

Academy for
Educational
Development
(AED)

Linking Occupational Information to Educational Programs Using the Career Clusters and Career Pathways Framework: The Crosswalk Validation Project

Bruce Steuernagel, Consultant, NADCTEc

Pradeep Kotamraju, Deputy Director, NRCCTE

**Tenth Career Cluster Institute
Washington DC
June 19, 2012**

The contents in this presentation do not necessarily represent the positions or policies of the Office of Vocational and Adult Education or the U.S. Department of Education, and you should not assume endorsement by the Federal Government.

Arts, A/V Technology & Communications

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

Printing Technology Pathway

The printing process has three stages—prepress, press and binding or post-press. Prepress workers prepare material for printing presses. They perform a variety of tasks involved with transforming text and pictures into finished pages and making printing plates of the pages. Desktop publishing poses new challenges for the printing industry. The printing industry is rapidly moving toward complete “digital imaging,” by which customers’ material received digitally is converted directly into printing plates. Other innovations in prepress work are digital color page makeup systems, electronic page layout systems and off-press color proofing systems. Printing press operators prepare, operate and maintain the printing presses in a pressroom. In most shops, press operators also perform preventive maintenance. Computers allow press operators to perform many of their tasks electronically. With this equipment, press operators monitor the printing process on a control panel or computer monitor, which allows them to adjust the press electronically.

Source: <http://www.careertech.org/career-clusters/clusters-occupations.html>

Primary Occupations and Instructional Programs by Clusters/Pathways							
Table 7: Cluster-Pathway-SOC-CIP							
Single Assignment of Occupation and CIP to Pathway			Sorted by Pathway, then SOC and CIP				
September 2007 Version / Subject to Revision after Initial Use			CIP-SOC not directly linked				
Career Clusters		Career Pathways		Related BLS/SOC Occupations		Related Instructional Programs (CIP)	
Code	Title	Code	Title	Code	Title	Code	Title
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway	43-9031	Desktop publishers		
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway	51-5011	Bindery workers		
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway	51-5012	Bookbinders		
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway	51-5021	Job printers		
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway	51-5022	Prepress technicians and workers		
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway	51-5023	Printing machine operators		
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway			100301	Graphic Communications, General
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway			100302	Printing Management
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway			100303	Prepress/Desktop Publishing and Digital Imaging Design
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway			100304	Animation, Interactive Technology, Video Graphics & Special Effects
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway			100305	Graphic and Printing Equipment Operator, General Production
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway			100306	Platemaker/Imager
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway			100307	Printing Press Operator
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway			100308	Computer Typography and Composition Equipment Operator
3.0000	Arts, Audio/Video Technology and Communications Cluster	3.20000	Printing Technology Pathway			100399	Graphic Communications, Other
All occupations assigned to a single cluster/pathway for data reporting and related uses							
Prepared by: DTI Associates, Inc							
under contract no. ED-04-CO-0121/0001 with U.S. Department of Education, OVAE							
compiled by Don Hilber, based on other tables authored by Richard Dempsey							
last update: September 28, 2007							
Disclaimer: The documents contained here are provided to assist in producing and maintaining comparable and uniform information and data on Career and Technical Education. These data are intended to be useful for policymaking at the federal, state, and local levels and are the sole responsibility of the organizations that produced them. The information and opinions published here are the products of the organizations that published them and do not necessarily represent the policy or views of the U.S. Department of Education. The authors of the documents found here accept sole responsibility for the contents.							

Agriculture, Food & Natural Resources Cluster 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.

Food Products and Processing Systems Pathway Description

Food Products and Processing Systems Pathway: People who work in the Food Products and Processing Systems pathway discover new food sources, analyze food content and develop ways to process, preserve, package or store food according to industry and government regulations. They create new food products to meet consumer needs and inspect food-processing areas to ensure that sanitation, safety, quality and waste management standards are met.

Primary Occupations and Instructional Programs by Clusters/Pathways									
Table 7: Cluster-Pathway-SOC-CIP									
Single Assignment of Occupation and CIP to Pathway						Sorted by Pathway, then SOC and CIP			
September 2007 Version / Subject to Revision after Initial Use						CIP-SOC not directly linked			
Career Clusters		Career Pathways		Related BLS/SOC Occupations		Related Instructional Programs (CIP)			
Code	Title	Code	Title	Code	Title	Code	Title		
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway	19-1012	Food scientists and technologists				
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway	45-1011	First-line supervisors/managers of farming, fishing, and forestry workers				
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway	45-2011	Agricultural inspectors				
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway	45-2041	Graders and sorters, agricultural products				
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway	51-3021	Butchers and meat cutters				
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway	51-3022	Meat, poultry, and fish cutters and trimmers				
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway	51-3023	Slaughterers and meat packers				
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway	51-3091	Food and tobacco roasting, baking, and drying machine operators and tenders				
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway	51-3092	Food batchmakers				
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway	51-3093	Food cooking machine operators and tenders				
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway			010105	Agricultural/Farm Supplies Retailing and Wholesaling		
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway			010106	Agricultural Business Technology		
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway			010199	Agricultural Business and Management, Other		
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway			010401	Agricultural and Food Products Processing		
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway			011001	Food Science		
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway			011002	Food Technology and Processing		
1.0000	Agriculture, Food and Natural Resource Cluster	1.10000	Food Products and Processing Systems Pathway			011099	Food Science and Technology, Other		
All occupations assigned to a single cluster/pathway for data reporting and related uses									
Prepared by: DTI Associates, Inc									
under contract no. ED-04-CO-0121/0001 with U.S. Department of Education, OVAE									
compiled by Don Hilber, based on other tables authored by Richard Dempsey									
last update: September 28, 2007									
Disclaimer: The documents contained here are provided to assist in producing and maintaining comparable and uniform information and data on Career and Technical Education. These data are intended to be useful for policymaking at the federal, state, and local levels and are the sole responsibility of the organizations that produced them. The information and opinions published here are the products of the organizations that published them and do not necessarily represent the policy or views of the U.S. Department of Education. The authors of the documents found here accept sole responsibility for the contents.									

Cip Code	CIP Title	CC Code	CC Title	OSDS Unit of Analysis Cluster	Recommended Cluster	Reason	UAcodes	UAtitles
49.0202	Construction/Heavy Equipment/Earthmoving Equipment	02.0000	Architecture and Construction Cluster	Architecture and Construction	Architecture and Construction		068B-02	CONSTRUCTION EQUIPMENT OPERATION
49.0206	Mobil Crane Operation/Operator	02.0000	Architecture and Construction Cluster	Architecture and Construction	Architecture and Construction		068B-02	CONSTRUCTION EQUIPMENT OPERATION
49.0304	Diver, Professional and Instructor	01.0000	Agriculture, Food and Natural Resource Cluster	Architecture and Construction	Architecture and Construction	Mostly involved with inspection, repair or installation of underwater structures. Construction industry is primary employer.	091B-02	DIVING
52.2001	Construction Management	02.0000	Architecture and Construction Cluster	Business	Architecture and Construction	While this is a Business CIP, it prepares for a construction-specific occupation where the knowledge of construction process and skills is required.	195B-04	CONSTRUCTION MANAGEMENT

SOC CODE	SOC TITLE	Pthwy No	Pathway Title	Career Clstr No	Career Clusters Title	CIP 6 2010 Code	CIPTitle_2010	REC CLSTR NO	Recommended Cluster_2010	Mtch Clstr*	CrossWalk Rel Strength**
27-3031	Public Relations Specialists	14.4	Marketing Communications	14	Marketing	09.0100	Communication, General.	3	Arts, Audio/Video Technology & Communications	0	1
27-3031	Public Relations Specialists	14.4	Marketing Communications	14	Marketing	19.0202	Family and Consumer Sciences/Human Sciences Communication.	3	Arts, Audio/Video Technology & Communications	0	1
27-3031	Public Relations Specialists	14.4	Marketing Communications	14	Marketing	09.0905	Health Communication.	14	Marketing	1	2
27-3031	Public Relations Specialists	14.4	Marketing Communications	14	Marketing	09.0907	International and Intercultural Communication.	3	Arts, Audio/Video Technology & Communications	0	1
27-3031	Public Relations Specialists	14.4	Marketing Communications	14	Marketing	09.0904	Political Communication.	14	Marketing	1	2
27-3031	Public Relations Specialists	14.4	Marketing Communications	14	Marketing	09.0900	Public Relations, Advertising, and Applied Communication.	14	Marketing	1	2
27-3031	Public Relations Specialists	14.4	Marketing Communications	14	Marketing	09.0902	Public Relations/Image Management.	14	Marketing	1	2
27-3031	Public Relations Specialists	14.4	Marketing Communications	14	Marketing	09.0101	Speech Communication and Rhetoric.	3	Arts, Audio/Video Technology & Communications	0	1
27-3031	Public Relations Specialists	14.4	Marketing Communications	14	Marketing	09.0906	Sports Communication.	3	Arts, Audio/Video Technology & Communications	0	1
13-1161	Market Research Analysts and Marketing Specialists	14.5	Marketing Research	14	Marketing	45.0602	Applied Economics.	15	Science, Technology, Engineering & Mathematics	0	1
13-1161	Market Research Analysts and Marketing Specialists	14.5	Marketing Research	14	Marketing	19.0203	Consumer Merchandising/Retailing Management.	14	Marketing	1	2
13-1161	Market Research Analysts and Marketing Specialists	14.5	Marketing Research	14	Marketing	52.1403	International Marketing.	14	Marketing	1	2
13-1161	Market Research Analysts and Marketing Specialists	14.5	Marketing Research	14	Marketing	52.1402	Marketing Research.	14	Marketing	1	2
13-1161	Market Research Analysts and Marketing Specialists	14.5	Marketing Research	14	Marketing	52.1401	Marketing/Marketing Management, General.	14	Marketing	1	2

Mtch Clstr* If the SOC Recommended Cluster matches the CIP Recommended Cluster, the number is 1. 0 if no match.

Cross Walk Rel Strength** If the NCES CIP-SOC Crosswalk shows a relationship and the clusters match, the Crosswalk Related Strength is 2. If the NCES Crosswalk shows a relationship but the clusters don't match, the Crosswalk Related Strength is 1. The NCES CIP-SOC Crosswalk has relationships for many programs to Postsecondary Faculty and several upper-level management occupations. While it is possible that students eventually will earn a Master's or PhD to become a faculty member, this will require many additional years of preparation and the occupations are not as directly related to CTE. As a result, we have included the occupations, but have given these occupations a lower (weaker) score.

If the NCES CIP-SOC Crosswalk shows a relationship and the clusters match, the Crosswalk Related Strength is 2. If the NCES Crosswalk shows a relationship but the clusters don't match, the Crosswalk Related Strength is 1. The NCES CIP-SOC Crosswalk has relationship for many programs to Post-Secondary faculty and several management occupations. While it is possible that students eventually will earn a Master's or PhD to become a faculty, this requires many additional years of preparation and the occupations are not as directly related to CTE. As a result, we have include the occupations but have given these occupations a lower score.

SOC CODE	SOC TITLE	Pthwy No	Pathway Title	Career Clstr No	Career Clusters Title	CIP 6 2010 Code	CIPTitle_2010	REC CLSTR NO	Recommended Cluster_2010	Mtch Clstr*	CrossWalk Rel Strength**
25-1071	Health Specialties Teachers, Postsecondary	5.3	Teaching/Training	5	Education & Training	51.0602	Dental Hygiene/Hygienist.	8	Health Science	0	0
25-1071	Health Specialties Teachers, Postsecondary	5.3	Teaching/Training	5	Education & Training	51.0603	Dental Laboratory Technology/Technician.	13	Manufacturing	0	0
25-1071	Health Specialties Teachers, Postsecondary	5.3	Teaching/Training	5	Education & Training	51.0401	Dentistry.	8	Health Science	0	0
25-1071	Health Specialties Teachers, Postsecondary	5.3	Teaching/Training	5	Education & Training	51.0910	Diagnostic Medical Sonography/Sonographer and Ultrasound Technician.	8	Health Science	0	0
25-1071	Health Specialties Teachers, Postsecondary	5.3	Teaching/Training	5	Education & Training	51.0902	Electrocardiograph Technology/Technician.	8	Health Science	0	0
25-1071	Health Specialties Teachers, Postsecondary	5.3	Teaching/Training	5	Education & Training	51.0903	Electroneurodiagnostic/Electroencephalographic Technology/Technologist.	8	Health Science	0	0
25-1071	Health Specialties Teachers, Postsecondary	5.3	Teaching/Training	5	Education & Training	51.0904	Emergency Medical Technology/Technician (EMT Paramedic).	8	Health Science	0	0
25-1071	Health Specialties Teachers, Postsecondary	5.3	Teaching/Training	5	Education & Training	51.2202	Environmental Health.	8	Health Science	0	0
25-1071	Health Specialties Teachers, Postsecondary	5.3	Teaching/Training	5	Education & Training	26.1309	Epidemiology.	15	Science, Technology, Engineering & Mathematics	0	0
25-1071	Health Specialties Teachers, Postsecondary	5.3	Teaching/Training	5	Education & Training	13.1327	Health Occupations Teacher Education.	5	Education & Training	1	2

Mtch Clstr* If the SOC Recommended Cluster matches the CIP Recommended Cluster, the number is 1. 0 if no match.

Cross Walk Rel Strength** If the NCES CIP-SOC Crosswalk shows a relationship and the clusters match, the Crosswalk Related Strength is 2. If the NCES Crosswalk shows a relationship but the clusters don't match, the Crosswalk Related Strength is 1. The NCES CIP-SOC Crosswalk has relationships for many programs to Postsecondary Faculty and several upper-level management occupations. While it is possible that students eventually will earn a Master's or PhD to become a faculty member, this will require many additional years of preparation and the occupations are not as directly related to CTE. As a result, we have included the occupations, but have given these occupations a lower (weaker) score.