



Manufacturing and Product Development Industry Sector Pathway Options

Graphic Arts Technology Pathway

Sample CTE Courses*		
Introductory	Concentration	Capstone
<ul style="list-style-type: none"> Drafting Exploring Technology Orientation to Graphic Arts Apprenticeship Technology Core 	<ul style="list-style-type: none"> Communications Technology Graphic Arts/Communications Photography Laboratory 	<ul style="list-style-type: none"> Commercial Photography Composition, Lithography, and Platemaking Composition, Makeup, and Typesetting Desktop Publishing

Education Level and Sample Occupations**		
High School Diploma	Certification and/or AA Degree	Bachelor's Degree or Higher
<ul style="list-style-type: none"> Desktop Publisher Graphic Art Equipment Operator Network Installer+ Pre-Press Designer Graphic Arts Apprentice 	<ul style="list-style-type: none"> Commercial Photographer Production Manager Network Administrator+ Graphic Artist (Journeyman) 	<ul style="list-style-type: none"> Publisher, Editor Product Developer Industrial Technology Educator+ Network Engineer+ Graphic Designer

Integrated Graphics Technology Pathway

Sample CTE Courses*		
Introductory	Concentration	Capstone
<ul style="list-style-type: none"> Drafting/Communications Exploring Technology Graphic Arts Graphic Communications Apprenticeship Awareness Technology Core 	<ul style="list-style-type: none"> Communications Technology Graphic Communications Graphic Communications Apprenticeship Explorations Photography Laboratory Video Production 	<ul style="list-style-type: none"> Animation Broadcasting Production Multimedia Orientation to Graphic Communications Apprenticeship

Education Level and Sample Occupations**		
High School Diploma	Certification and/or AA Degree	Bachelor's Degree or Higher
<ul style="list-style-type: none"> Desktop Publisher Special Effects Animator Special Effects Apprentice Video Graphics Helper Web Designer 	<ul style="list-style-type: none"> Advertising Design Multimedia/Digital Editor Special Effects Editor Special Effects Journeyman Webmaster 	<ul style="list-style-type: none"> Industrial and Technology Educator+ Multimedia Author Multimedia/Digital Producer Publications Management Special Effects Engineer

*Sample CTE Courses are from the *Career Technical Education Framework for California Public Schools* (California Department of Education: 2007, <http://www.cde.ca.gov/re/pn/fd/>)

**Visit ASSIST (www2.assist.org/browseAreas.do) for community college and UC/CSU information and California Career Zone (www.cacareerzone.org) for occupation information.

+This occupation requires certification or licensure.

Related Career Technical Student Organization: SkillsUSA (<http://www.skillsusaca.com>)

Additional Industry Sector information available through the California Industrial and Technology Education Consortium (<http://www.citeonline.org>).



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Machine and Forming Technology Pathway

Sample CTE Courses*		
Introductory	Concentration	Capstone
<ul style="list-style-type: none"> Drafting Exploring Technology Metalworking Orientation to Machine and Forming Apprenticeship Technology Core 	<ul style="list-style-type: none"> Ironworking Machine Shop Manufacturing I Plastics/Composites Sheet Metal 	<ul style="list-style-type: none"> Foundry/Metallurgy Machine Tool Operations Manufacturing II Plastics/Composites

Education Level and Sample Occupations**		
High School Diploma	Certification and/or AA Degree	Bachelor's Degree or Higher
<ul style="list-style-type: none"> Assembler Electro-Mechanical Helper Installation Apprentice Machine Operator Maintenance Mechanic 	<ul style="list-style-type: none"> CNC Programmer Industrial Electrician+ Machine Technician Manager Tooling Journeyman 	<ul style="list-style-type: none"> Design Engineer Industrial Technology Educator+ Manufacturing Engineer+ Mechanical Engineer+ Tooling Engineer

Welding Technology Pathway

Sample CTE Courses*		
Introductory	Concentration	Capstone
<ul style="list-style-type: none"> Exploring Technology Metalworking Orientation to Welding Apprenticeship Technology Core Welding Fundamentals 	<ul style="list-style-type: none"> Manufacturing/ Materials Processing Technical Drafting Welding Fabrication, Ironworking Welding-Combination I Welding-Electrical 	<ul style="list-style-type: none"> Computer-aided Drafting (CAD) Computer-aided Manufacturing (CAM) Foundry Welding-Combination II Welding-Specialized

Education Level and Sample Occupations**		
High School Diploma	Certification and/or AA Degree	Bachelor's Degree or Higher
<ul style="list-style-type: none"> Cutter, Solder, Brazier Foundry Helper Plastics Assembler Welder Welding Apprentice+ 	<ul style="list-style-type: none"> Boilermaker+ Certified Welder+ Composite Fabricator Foundry Core, Pattern Maker Welding Journeyman+ 	<ul style="list-style-type: none"> Fabrication Designer Industrial Technology Educator+ Manufacturing Engineer Pressurized Vessel Engineer+ Quality Control Inspector

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Related Career Technical Student Organization: SkillsUSA (<http://www.skillsusaca.com>)

Additional Industry Sector information available through the California Industrial and Technology Education Consortium (<http://www.citeconline.org>).