

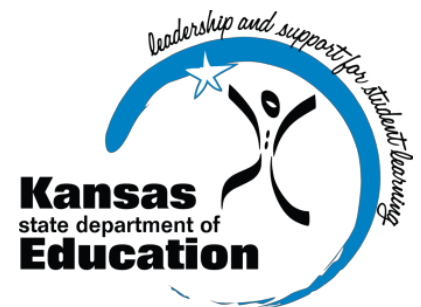
# CAREER CLUSTER GUIDANCE HANDBOOK

**Kansas Career & Technical Education**



**Kansas Career Cluster Pathway Design  
Models**

**Effective School Year 2018-2019**



# KANSAS CAREER & TECHNICAL EDUCATION

Kansas' secondary Career & Technical Education (CTE) Division has adopted the National Career Clusters model of 16 career clusters and has developed 35 pathways within these clusters. Technological advances and global competition have transformed the nature of work. Tomorrow's jobs will require more knowledge, better skills, and highly flexible workers who continually update their knowledge and skills. Our goal is to provide students with relevant contexts for learning through pathways to college and career readiness. Career Clusters link what students learn in school to the knowledge and skills they need for success in postsecondary education and careers.

Career cluster pathways are designed to provide a smooth transition from high school to postsecondary education (technical colleges, community colleges and universities), apprenticeship opportunities, the military, and/or the workplace. Kansas stakeholders from education, business and industry developed the courses that enable this transition. Kansas has developed 35 pathways that address the need for high skill, high wage, and high demand careers in the 21<sup>st</sup> Century.

**The following pages present the Career Cluster Pathways developed for local education agency implementation for school year 2018-2019. For assistance with the Authenticated Application Pathways System contact the Pathways Helpdesk at: [pathwayshelpdesk@ksde.org](mailto:pathwayshelpdesk@ksde.org).**

**Middle School level course codes are available for introductory level courses in some pathways. Please check with the KSDE Consultant responsible for that Pathway for details. Otherwise use high school codes for introductory courses taught at the Middle School level.**

## An Equal Employment/Educational Opportunity Agency

The Kansas State Department of Education does not discriminate on the basis of race, color, national origin, sex, disability, or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: KSDE General Counsel, KSDE, Landon State Office Building, 900 SW Jackson St., Ste. 102, Topeka, KS 66612; 785-296-3201



Kansas State Department of Education  
Landon State Office Building  
900 SW Jackson St., Suite 600  
Topeka, Kansas 66612-1212  
[www.ksde.org](http://www.ksde.org)



**KANSAS COMMISSIONER  
OF EDUCATION**  
Dr. Randy Watson  
(785) 296-3202



**DIVISION OF  
LEARNING SERVICES**  
Brad Neuenswander  
Deputy Commissioner  
(785) 296-2304



**DIVISION OF FISCAL AND  
ADMINISTRATIVE SERVICES**  
Dale M. Dennis  
Deputy Commissioner  
(785) 296-3871

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JULY 2015

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## **Kansas CTE Career Pathways Infographics**

The following three pages contain the new Kansas CTE Career Pathways infographics.

Page 1: Elementary Version – shows the seven Career Fields

Page 2: Middle School Version – shows the seven Career Fields and the 16 Career Clusters

Page 3: Secondary Version - shows the seven Career Fields, the 16 Career Clusters, and the 35 Pathways of study

The goal of KSDE's CTE Team is to make these infographics interactive so that at each level teachers, students and parents will be able to click on a field, cluster, or pathway to learn more about the opportunities for careers and career training in Kansas.

Look for this exciting opportunity coming soon to the  
KSDE website!

# Elementary Level Graphic

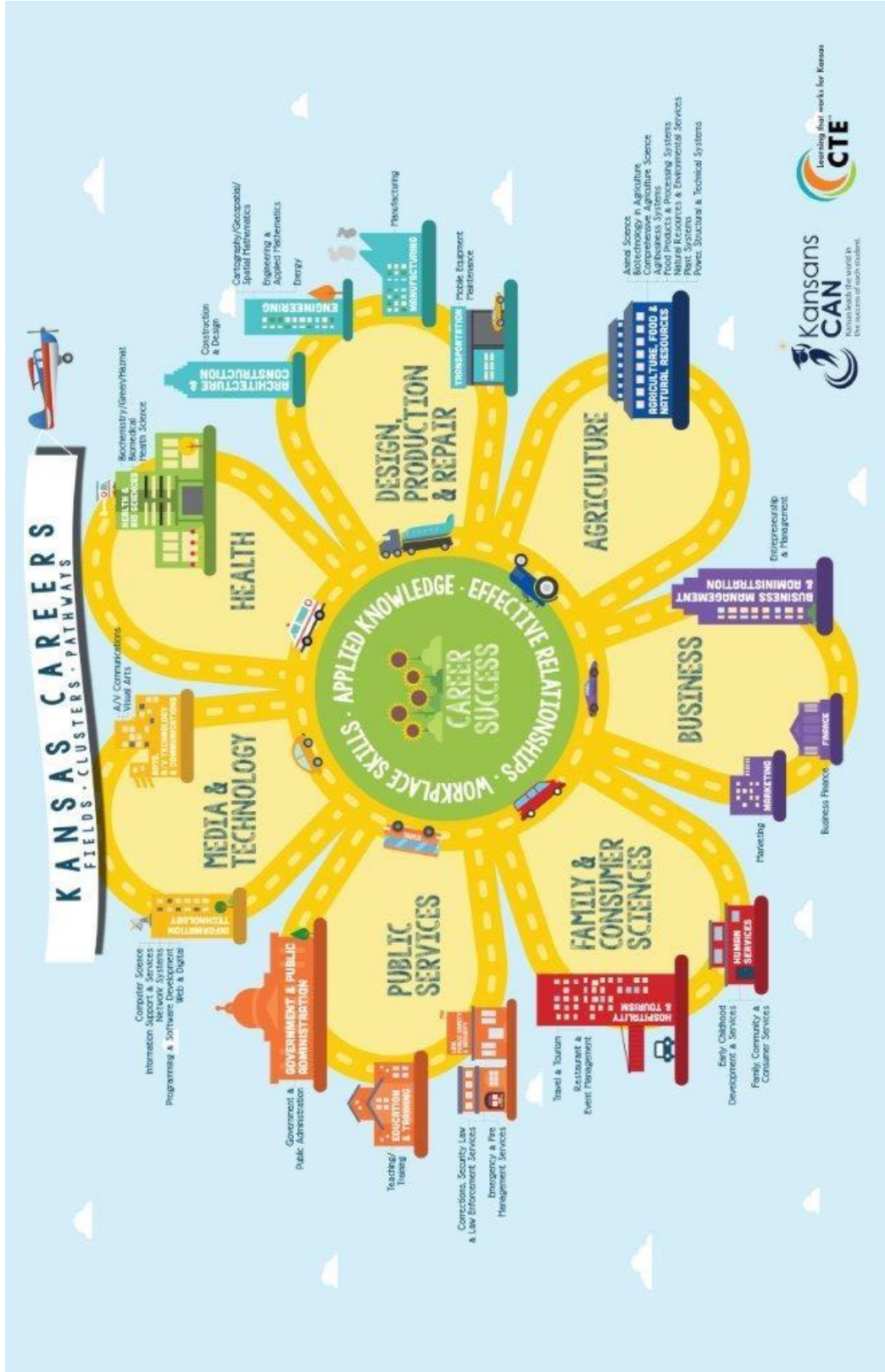


# Middle School Level Graphic





# Secondary Level Graphic



# KSDE Secondary-Level CTE Contacts - 2017-18

## CTE ASSISTANT DIRECTOR

- **Stacy Smith** ([sksmith@ksde.org](mailto:sksmith@ksde.org))
- 785-296-4351
- **Tierney Kirtdoll**, Interim Senior Asst.  
([tkirtdoll@ksde.org](mailto:tkirtdoll@ksde.org)) 785-296-3142

## CLUSTERS / PATHWAYS

### Agriculture, Food, and Natural Resources

- **All Pathways**  
Kurt Dillon ([kdillon@ksde.org](mailto:kdillon@ksde.org)) 785-296-3956

### Architecture & Construction

### Manufacturing

### Transportation, Distribution & Logistics

### Law, Public Safety, & Security

### Engineering

- **All Pathways**  
Peggy Torrens ([ptorrens@ksde.org](mailto:ptorrens@ksde.org)) 785-296-2221

### Arts, A/V Technology, and Communications

### Information Technology

- **AV Communications**
- **All Information Tech. Pathways**  
Stacy Smith ([sksmith@ksde.org](mailto:sksmith@ksde.org)) 785-296-4351
- **Visual Arts**  
Gayla Randel ([grandel@ksde.org](mailto:grandel@ksde.org)) 785-296-4912

### Business Management & Administration

### Finance

### Marketing

- **All Pathways**  
Natalie Clark ([ndclark@ksde.org](mailto:ndclark@ksde.org)) 785-296-4916

### Education and Training

### Human Services

### Hospitality & Tourism

- **All Pathways**  
Gayla Randel ([grandel@ksde.org](mailto:grandel@ksde.org)) 785-296-4912

### Government and Public Administration

- **Pathway**  
Don Gifford ([dgifford@ksde.org](mailto:dgifford@ksde.org)) 785-296-3892

### Health Science

- **All Pathways**  
Wendy Coates ([wcoates@ksde.org](mailto:wcoates@ksde.org)) 785-296-3860

## CTSO's

- **BPA**  
State Advisor – Amber McNew ([amcnew@usd266.com](mailto:amcnew@usd266.com)) 313-462-8000
- **DECA**  
State Advisor – Scott Jones – Ft. Hays St. University  
([sjones@kansasdeca.org](mailto:sjones@kansasdeca.org)) 785-628-4040
- **FBLA**  
State Advisor - Connie Lindell ([cnlindell@aol.com](mailto:cnlindell@aol.com)) 785-760-1038
- **FCCLA**  
State Advisor - Pam Lamb ([plamb@ksde.org](mailto:plamb@ksde.org)) 785-296-2164
- **FFA**  
State Advisor – Kurt Dillon ([kdillon@ksde.org](mailto:kdillon@ksde.org)) 785-296-3956  
Executive Secretary- Mary Kane ([mrkane@k-state.edu](mailto:mrkane@k-state.edu))  
785-532-6424
- **HOSA**  
State Advisor – Seth Nutt ([snutt@kumc.edu](mailto:snutt@kumc.edu)) 620-235-4040
- **SkillsUSA**  
State Advisor -Becky Warren ([bwarren@ksde.org](mailto:bwarren@ksde.org)) 620-820-9367
- **TSA**  
State Advisor –Contact Stacy Smith ([sksmith@ksde.org](mailto:sksmith@ksde.org))

## CARL D. PERKINS

- **Lead:**  
Kathleen Mercer ([ktmercerc@ksde.org](mailto:ktmercerc@ksde.org)) 785-296-2307
- **Office of Civil Rights Visits:**  
Wendy Coates ([wcoates@ksde.org](mailto:wcoates@ksde.org)) 785-296-3860
- **Perkins Reserve Grant Management:**  
Contact appropriate Pathway Consultant
- **Allocations / Performance Indicators:**  
Angie Feyh ([afeyh@ksde.org](mailto:afeyh@ksde.org)) 785-296-4908

## OTHER AREAS

- **Pathways Authenticated Application Assistance**  
[Pathwayshelpdesk@ksde.org](mailto:Pathwayshelpdesk@ksde.org)
- **K-12 Career Development**  
Kent Reed ([kreed@ksde.org](mailto:kreed@ksde.org)) 785-296-8109
- **KS Course Code Mgmt. System (KCCMS)**  
[kccms@ksde.org](mailto:kccms@ksde.org)
- **Teacher Licensure / EDCS**  
Susan Helbert ([shelbert@ksde.org](mailto:shelbert@ksde.org)) 785-296-2289  
Lori Adams ([ladams@ksde.org](mailto:ladams@ksde.org)) –785-296-3835
- **KIDS / STCO**  
[Kids@ksde.org](mailto:Kids@ksde.org)



## CLUSTER/PATHWAY C.I.P. CODES

<b>Agriculture, Food &amp; Natural Resources</b>		<b>Health Science</b>	
Agribusiness Systems*	01.0101	Biochemistry*	14.1401
Comprehensive Agriculture Science	01.9999	Biomedical*	14.0501
Animal Science*	01.0901	Health Science**	51.9999
Biotechnology in Agriculture*	26.1201		
Food Products & Processing Systems*	01.0401	<b>Hospitality &amp; Tourism</b>	
Natural Res. & Environmental Systems*	03.0101	Restaurant & Event Management*	12.0504
Plant Systems*	01.1101	Travel & Tourism**	52.0901
Power, Structural & Technical Systems*	01.0201		
		<b>Human Services</b>	
<b>Architecture &amp; Construction</b>		Early Childhood Development & Services**	19.0709
Construction & Design*	46.0000	Family, Community & Consumer Services	19.0799
<b>Arts, A/V Technology &amp; Communications</b>		<b>Information Technology</b>	
AV Communications *	09.0702	Information Support & Services*	11.0301
Visual Arts	50.0499	Network Systems*	11.0901
		Programming & Software Development*	11.0201
<b>Business Management &amp; Administration</b>		Web & Digital Communications	11.1004
Business Entrepreneurship & Management*	52.0799		
<b>Education &amp; Training</b>		<b>Law, Public Safety, Corrections &amp; Security</b>	
Teaching /Training**	13.0101	Corrections, Security, Law, & Law Enforcement Services*	43.0199
		Emergency & Fire Management Services*	43.0299
<b>Engineering</b>			
Cartography/Geospatial/Spatial Math*	15.1102	<b>Manufacturing</b>	
Engineering & Applied Mathematics*	14.0101	Manufacturing*	48.0000
Energy*	17.2071		
		<b>Marketing</b>	
<b>Finance</b>		Marketing	52.1402
Business Finance**	52.0801		
		<b>Transportation, Distribution &amp; Logistics</b>	
<b>Government &amp; Public Administration</b>		Mobile Equipment Maintenance*	47.9999
Government & Public Administration*	44.0401		
(* = non-traditional female)		(** = non-traditional male)	

# AGRICULTURE, FOOD & NATURAL RESOURCES CAREER CLUSTER DESIGN

## Agribusiness Systems – CIP Code 01.0101

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence: Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

*Exploratory Agriculture	68001	1 credit
<b>OR</b>		
*Intro to Agriculture	18001	1 credit

### TECHNICAL LEVEL

Agriscience	18002	1 credit
*Agribusiness	18201	1 credit

### APPLICATION LEVEL

*Applications in Agribusiness Research in Ag.	18220	1 credit	Ag Leadership & Comm.	18203	1 credit
Ag Entrepreneurship	18206	1 credit	Advanced Internship	18049	1 credit
	18202	1 credit	Internship	18048	1 credit

**\* Required courses in pathway**

# AGRICULTURE, FOOD & NATURAL RESOURCES CAREER CLUSTER DESIGN

## Animal Science – CIP Code 01.0901

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

*Exploratory Agriculture	68001	1 credit
<b>OR</b>		
*Intro to Agriculture	18001	1 credit

### TECHNICAL LEVEL

Agriscience	18002	1 credit
*Animal Science	18101	1 credit

### APPLICATION LEVEL

### ONE OF THE FOLLOWING FOUR COURSES IS REQUIRED

Adv. Animal Science	18103	1 credit	Small Animal Care	18102	1 credit
Equine Science	18104	1 credit	Animal Health/Vet Tech	18105	1 credit
Research in Ag	18206	1 credit	Ag Leadership & Comm.	18203	1 credit
Ag Entrepreneurship	18202	1 credit	Advanced Internship	18049	1 credit
Ag Business	18201	1 credit	Internship	18048	1 credit

\* Required courses in pathway

# AGRICULTURE, FOOD & NATURAL RESOURCES CAREER CLUSTER DESIGN

## Biotechnology in Agriculture – CIP Code 26.1201

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

*Exploratory Agriculture	68001	1 credit
<b>OR</b>		
*Intro to Agriculture	18001	1 credit

### TECHNICAL LEVEL

*Biotechnology in Ag Plant & Soil Science	18308	1 credit	Agriscience	18002	1 credit
Ag Food Science	18058	1 credit	Horticulture	18052	1 credit
	18305	1 credit	Animal Science	18101	1 credit

### APPLICATION LEVEL

*App. In Biotechnology	18320	1 credit	Ag Leadership & Comm.	18203	1 credit
Ag Business	18201	1 credit	Advanced Internship	18049	1 credit
Ag Entrepreneurship	18202	1 credit	Internship	18048	1 credit
Research in Ag	18206	1 credit			

**\* Required courses in pathway**

# AGRICULTURE, FOOD & NATURAL RESOURCES CAREER CLUSTER DESIGN

## Comprehensive Agricultural Science – CIP Code 01.9999

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

\*Exploratory Agriculture 68001 1 credit **OR** \*Intro to Agriculture 18001 1 credit

### TECHNICAL LEVEL

**\*Must select at least two of the courses below:**

Agriscience	18002	1 credit	Plant & Animal Science	18301	1 credit
Animal Science	18101	1 credit	Natural Resource Management	18504	1 credit
Plant & Soil Science	18058	1 credit	Horticulture	18052	1 credit
Biotechnology in Ag.	18308	1 credit	Ag. Food Science	18305	1 credit

### APPLICATION LEVEL

**\*Must select at least one of the courses below:**

Ag Entrepreneurship	18202	1 credit	Ag Leadership & Communications	18203	1 credit
Research in Ag.	18206	1 credit	Advanced Internship	18049	1 credit
Internship	18048	1 credit	Agribusiness	18201	1 credit
Adv Plant & Animal Science	18302	1 credit			

**\* Required courses in pathway**



# AGRICULTURE, FOOD & NATURAL RESOURCES CAREER CLUSTER DESIGN

## Food Products & Processing Systems – CIP Code 01.0401

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

*Exploratory Agriculture	68001	1 credit
<b>OR</b>		
*Intro to Agriculture	18001	1 credit

### TECHNICAL LEVEL

Agriscience	18002	1 credit	Animal Science	18101	1 credit
*Ag Food Science	18305	1 credit	Plant & Soil Science	18058	1 credit
<b>OR</b>			Horticulture	18052	1 credit
*Food Science	22203	1 credit			

### APPLICATION LEVEL

*Advanced Food Science	18317	1 credit	Ag Leadership & Communications	18203	1 credit
Research in Ag	18206	1 credit	Advanced Internship	18049	1 credit
Ag Entrepreneurship	18202	1 credit	Ag Business	18201	1 credit
Internship	18048	1 credit			

**\* Required courses in pathway**

# AGRICULTURE, FOOD & NATURAL RESOURCES CAREER CLUSTER DESIGN

## Natural Resources & Environmental Systems –

CIP Code 03.0101

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence: Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

\*Exploratory Agriculture 68001 1 credit

OR

\*Intro to Agriculture 18001 1 credit

### TECHNICAL LEVEL

Agriscience 18002 1 credit

\*Natural Resources Management 18504 1 credit

### APPLICATION LEVEL

Ag Business 18201 1 credit Ag Leadership & Comm. 18203 1 credit

Research in Ag. 18206 1 credit Advanced Internship 18049 1 credit

Ag Entrepreneurship 18202 1 credit Internship 18048 1 credit

\*Environmental Resources & Wildlife Science 37506 1 credit

\* Required courses in pathway

# AGRICULTURE, FOOD & NATURAL RESOURCES CAREER CLUSTER DESIGN

## Plant Systems – CIP Code 01.1101

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence: Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### *INTRODUCTORY LEVEL*

\*Exploratory Agriculture 68001 1 credit  
 \*Intro to Agriculture 18001 1 credit

### *TECHNICAL LEVEL*

\*Plant & Soil Science 18058 1 credit      \*Horticulture 18052 1 credit  
 Agriscience 18002 1 credit

### *APPLICATION LEVEL*

\*Applications in Horticulture 18071 1 credit      \*Floriculture & Greenhouse Management 18057 1 credit  
 \*Crop & Range Management 18081 1 credit  
 Ag Business 18201 1 credit      Ag Leadership & Communications 18203 1 credit  
 Research in Ag. 18206 1 credit  
 Ag Entrepreneurship 18202 1 credit      Advanced Internship 18049 1 credit  
 Internship 18048 1 credit

\* A minimum of one starred course from each level is required for pathway approval.

# AGRICULTURE, FOOD & NATURAL RESOURCES CAREER CLUSTER DESIGN

## Power, Structural & Technical Systems– CIP Code 01.0201

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

\*Exploratory Agriculture 68001 1 credit  
 \*Intro to Agriculture 18001 1 credit

### TECHNICAL LEVEL

Agriscience 18002 1 credit \*Ag Mechanics 18401 1 credit  
 \*Ag Welding I 18404/39207 1 credit \*Small Engines 18410 1 credit

### APPLICATION LEVEL

\*Adv. Ag Mechanics 18402 1 credit \*Ag Welding II 18407/39208 1 credit  
 \*Adv. Ag Power 18411 1 credit \*Ag Structures 18403 1 credit  
 \*Ag Fabrication 18409 1 credit Ag Business 18201 1 credit  
 Ag Leadership & Research in Ag. 18206 1 credit  
 Communications 18203 1 credit Advanced Internship 18049 1 credit  
 Ag Entrepreneurship 18202 1 credit Internship 18048 1 credit

**\* A minimum of one starred course from each level is required for pathway approval.**

# Architecture & Construction CAREER CLUSTER DESIGN

## Construction & Design—CIP Code 46.0000

### INTRODUCTORY LEVEL

**Introduction to Industrial Technology Drafting	38001	.5 credit
	21102	.5 credit

### TECHNICAL LEVEL

Design Strand	Course	Credits	Construction Strand	Course	Credits
Drafting / CAD	21107	1 credit	Carpentry	17002	1 credit
	21103	1 credit	Woodworking Principles	17007	1 credit
Architecture Design			Skilled Mechanical Crafts	17062	.5 credit

### APPLICATION LEVEL

Design Strand	Course	Credits	Construction Strand	Course	Credits
Research & Design for Pre-Construction	21109	1 credit	*Carpentry II	38002	1 credit
Advanced Studies	38050	.5 credit	Furniture & Cabinetry Fabrication	38007	1 credit
Residential Interior Design	22212	.5 credit	*Sheet Metal & HVACR	38012	1 credit
Commercial & Ind. Interior Design	38212	.5 credit	*Research & Design in Building Trades	17005	1 credit
			*Remodel & Building Maintenance	17009	.5 credit
			*Sheet Metal	13205	.5 credit
			*HVAC Technology	17056	.5 credit
			*Plumbing Technology	17058	.5 credit
			*Electrical & Security Systems	17113	.5 credit
			*Pipefitting Technology	17061	1 credit
			***Advanced Materials Technology	38010	1 credit

- Approved Pathway:**
- 1) Includes minimum of three secondary-level credits.
  - 2) Includes a work-based element.
  - 3) Consists of a sequence: Introductory-level, Technical-level, and Application-level courses.
  - 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
  - 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.



# ARTS, AV AND COMMUNICATION CAREER CLUSTER DESIGN

## AV Communications Pathway – CIP Code 09.0702

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

Business Essentials	12050	.5 credit
Computer Applications	10004/60004	1 credit

### TECHNICAL LEVEL

*21st Century Journalism	30100	.5 credit
Digital Media Technology	30104	.5 credit
Media and Public Relations	43115	.5 credit
Audio/Video Production Fund	30103	.5 credit
Photo Imaging	30105	.5 credit
Graphic Design Fundamentals	30102	.5 credit
Graphic Design	05162/11154	1 credit
Principles of Marketing	12164	1 credit

### APPLICATION LEVEL

Project Mgmt.& Resource Scheduling	21205	1 credit
Video Production	30150	1 credit
Digital Media Design & Production	30151	1 credit

\*Required for pathway approval.

# ARTS, AV AND COMMUNICATION CAREER CLUSTER DESIGN

## Visual Arts Pathway – CIP Code 50.0499

(Fashion, Apparel and Interior Design (F.A.I.D.) Strands)

**Approved Pathway:**

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence: Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

Career & Life Planning	22207	.5 credit
Intro to Drawing	30005	.5 credit
** Drafting	21102	.5 credit
Intro to Fam & Cons. Sciences	45001	1 credit

### TECHNICAL LEVEL

*(Must Select a strand at the division)*

*Essentials of Fashion, Apparel & Interior Design (F.A.I.D.)	30110	.5 credit
F.A.I.D. Merchandising & Entrepreneurship	30112	.5 credit

### Fashion & Apparel Design Strand

Fashion Trends	30111	1 credit				
* Apparel Production I	19201	.5 credit		* Interior Design I Residential Interior Design	19263 22212	.5 credit .5 credit
* Apparel Production II	19203	.5 credit		Architecture Design	21103	1 credit

### APPLICATION LEVEL

Fashion, Apparel & Interior Design (F.A.I.D.) Studio	30160	1 credit
Career Connections	22275	.5 credit

\*Required for pathway approval per strand. \*\*Recommended Intro course for Interior Design Strand. Cannot be the only Intro course offered.

# ARTS, AV AND COMMUNICATION CAREER CLUSTER DESIGN

## Visual Arts Pathway – CIP Code 50.0499 (Graphic Design Strand)

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE

### INTRODUCTORY LEVEL

Intro To Drawing	30005	.5 credit
Computer Applications	10004/60004	1 credit

### TECHNICAL LEVEL

Principles of Illustration	30101	.5 credit
Photo Imaging	30105	.5 credit
*Graphic Design Fundamentals	30102	.5 credit
Computer Graphics	10202	1 credit
Graphic Design	05162/11154	1 credit

### APPLICATION LEVEL

Project Mgmt. & Resource Scheduling	21205	1 credit
Media Technology – Workplace Experience	10248	1 credit

\*Required for pathway approval.

# BUSINESS MANAGEMENT & ADMINISTRATION CAREER CLUSTER DESIGN

## Business Management & Entrepreneurship Pathway

CIP Code 52.0799

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes
  - Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

\*Business Essentials 12050\*\* .5 credit

### TECHNICAL LEVEL

\*Entrepreneurship 12053 .5 credit  
 \*Business Management 12052 .5 credit  
 \*Business Communications 12009 .5 credit

(Optional Technical Courses)		(Optional Technical Courses)	
Supportive Business & Entrepreneurship Technical		Supportive Entrepreneurship Technical	
Business Economics	12105 .5 credit	Web Page Design	10201 1 credit
Accounting	12104 1 credit	Internet Marketing	12162 1 credit
Business Law	12054 .5 credit	Woodworking Principles	17007 1 credit
Principles of Marketing	12164 1 credit	Drafting/CAD	21107 1 credit
IB Business & Management	12059 1 credit	Ag Welding I	18404 1 credit
		Production Welding	39207 1 credit
		Remodel & Bldg. Maint.	17009 .5 credit
		Residential Carpentry	17002 1 credit
		Culinary Essentials	16052 .5 credit
		Found. Early Childhood	19052 1 credit
		Engineering Design & Dev.	21007 1 credit
		Con & Personal Finance	22210 .5 credit

### APPLICATION LEVEL

\*Applied Business Development 32200 1 credit

\*Required for pathway approval \*\*Business Essentials 12050 may be integrated with Computer Applications 10004

# EDUCATION AND TRAINING CAREER CLUSTER DESIGN

## Teaching/Training Pathway – CIP Code 13.0101

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

Career and Life Planning	22207	.5 credit
Intro to Family & Consumer Sciences	45001	1 credit

### TECHNICAL LEVEL

*Teaching as a Career	19151	1 credit
*Human Growth & Development A	45004**	.5 credit
<b>OR</b> * Human Growth & Development B	45014**	1 credit
Teaching Observation	42251	1 credit
Family Studies	22208**	.5 credit

### APPLICATION LEVEL

Teaching Internship	19152	1 credit
Educational Trainer	10260	1 credit

\*Required for pathway approval.

\*\*Alternative course (19051) may be allowed with prior approval.



# ENGINEERING CAREER CLUSTER DESIGN

## Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence: Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

## Cartography/Geospatial/Spatial Mathematics Pathway – CIP Code 15.1102

### INTRODUCTORY LEVEL

Earth Science	or	✓	03001	1 credit	Engineering Appl. (8-9)	21002/71002	1 credit
Earth Space Science		✓	53008/03008	1 credit	Engineering Tech. (8-9)	21003/71003	1 credit
Computing Systems (8-9)			10002/60002	1 credit	Principles of Tech. (8-9)	53153/03153	1 credit
Computer Applications (8-9)			10004/60004	1 credit	Pre-Engineering Tech (8-9)	21001	1 credit
Physical Geography			03007	1 credit			

### TECHNICAL LEVEL

Meteorology	✓	03006	1 credit	Animation	10210	1 credit
GIS Technology		21058	1 credit	Robotics	21009	1 credit
Aerospace Technology		21055	1 credit			

### APPLICATION LEVEL

GIS Spatial Applications		21112	1 credit	Emerging Technologies in STEM	21053	1 credit
Civil Engineering or		21011	1 credit			
Civil Eng. & Architecture		21012	1 credit	Project Management		
Aerospace Engineering	✓	21013	1 credit	and Resource Scheduling	21205	1 credit
Particular Topics in Engineering		21015	1 credit	Workplace Experience	21048	1 credit

✓ Course is eligible for Regents Qualified Admissions – Natural Science

# ENGINEERING CAREER CLUSTER DESIGN

## Energy Pathway – CIP Code 17.2071

### INTRODUCTORY LEVEL

Principles of Tech. (8-9)	53153/03153	1 credit			
Pre-Engineering Tech. (8-9)	21001/71001	1 credit	Computing Systems (8-9)	10002/60002	1 credit
Engineering Appl. (8-9)	21002/71002	1 credit	Computer Appl. (8-9)	10004/60004	1 credit
Engineering Tech. (8-9)	21003/71003	1 credit	Blueprint Reading	21108	.5 credit

### TECHNICAL LEVEL

Prin. Of Engineering	21004	1 credit	Engineering-Comprehensive	21005	1 credit
Engineering Design	21006	1 credit	Foundations of Electronics	21201	1 credit
Robotics	21009	1 credit	Laser/Fiber Optics	21057	1 credit
Energy/Power	20101	1 credit	Technical Innovation		
Alternative Energy	18506	1 credit	and Assessment	21054	1 credit
Electricity/Electronics	17108	1 credit	Meteorology	03006	1 credit
Wind Energy	21060	1 credit	Advanced Production		
<b>*Energy Industry Fundamentals</b>	41105	1 credit	Blueprint Reading	39108	.5 credit

### APPLICATION LEVEL

Emerging Technologies in STEM	21053	1 credit	Materials Science & Engineering	21252	1 credit
Digital Electronics	21008	1 credit	Particular Topics in Engineering	21015	1 credit
Wind Turbine Construction and Operation	21061	1 credit	Eng. Design & Development	21007	1 credit
Workplace Experience	21048	1 credit	Project Management & Resource Scheduling	21205	1 credit

- Approved Pathway:**
- 1) Includes minimum of three secondary-level credits.
  - 2) Includes a work-based element.
  - 3) Consists of a sequence:
    - Introductory-level, Technical-level, and Application-level courses.
  - 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
  - 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

# ENGINEERING CAREER CLUSTER DESIGN

## Engineering & Applied Mathematics Pathway – CIP Code 14.0101

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

Principles of Tech. (8-9)	53153/03153	1 credit	Pre-Engineering Tech. (8-9)	21001/71001	1 credit
Computing Systems (8-9)	10002/60002	1 credit	Engineering Appl. (8-9)	21002/71002	1 credit
Computer Appl. (8-9)	10004/60004	1 credit	Engineering Tech. (8-9)	21003/71003	1 credit
Blueprint Reading	21108	.5 credit			

### INTRODUCTORY LEVEL

Prin. Of Engineering	21004	1 credit	Engineering – Comprehensive	21005	1 credit
Engineering Design	21006	1 credit	Foundations of Electronics	21201	1 credit
Robotics	21009	1 credit	Technical Innovation & Assessment	21054	1 credit
Adv. Production Blueprint Reading	39108	.5 credit			

### TECHNICAL LEVEL

Emerging Technologies	21053	1 credit	Materials Science & Engineering	21252	1 credit
Digital Electronics	21008	1 credit	Civil Eng. & Architecture or	21012	1 credit
Computer Integrated Manufacturing	21010	1 credit	Civil Engineering	21011	1 credit
BioEngineering or	21020	1 credit	Aerospace Engineering	21013	1 credit
Biotechnical Engineering	21014	1 credit	Particular Topics in Engineering	21015	1 credit
Project Mgmt & Resource Scheduling	21205	1 credit	Eng. Design & Development	21007	1 credit
			Workplace Experience	21048	1 credit

### APPLICATION LEVEL

# FINANCE CAREER CLUSTER DESIGN

## Business Finance Pathway – CIP Code 52.0801

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-Level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-Level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

\* Business Essentials 12050 .5 credit

### TECHNICAL LEVEL

\* Accounting 12104 1 credit  
 \* Consumer & Personal Finance 22210 .5 credit

### Supportive (Optional)

Business Economics 12105 .5 credit  
 Business Law 12054 .5 credit  
 Entrepreneurship 12053 .5 credit

### APPLICATION LEVEL

<u>Banking Services**</u>		<u>Accounting**</u>		<u>Securities &amp; Investments**</u>	
Banking & Finance	12101 .5 credit	Advanced Accounting	33108 1 credit	Investing	12107 .5 credit
Investing	12107 .5 credit	College Accounting	33109 1 credit	Risk Mgmt & Insurance	12106 .5 credit

### Supportive (Optional)

Finance – Workplace Experience 12148 .5 credit

\* Required course for pathway approval

\*\* One credit from at least one strand is required

# Government and Public Administration CAREER CLUSTER DESIGN

## Government and Public Administration Pathway – CIP Code 44.0401

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE

### INTRODUCTORY LEVEL

\*Intro to Government & Public Administration 43001 .5 credit  
 Career & Life Planning 22207 .5 credit

### TECHNICAL LEVEL

\*Government & Public Admin. Fundamentals 43105 .5 credit  
 Human Growth & Development A 45004 .5 credit  
 IT for Service Professions 44010 .5 credit

Business Strand	Pre-Law Legal Assistance Strand	
Business Economics	12105 .5 credit	Business Economics 12105 .5 credit
**Business Law	12054 .5 credit	Business Law 12054 .5 credit
Business Management	12052 .5 credit	**Practical Law 44300 .5 credit
Accounting	12104 1 credit	Media & Public Relations 43115 .5 credit

### APPLICATION LEVEL

Foundations In Law 44305 1 credit  
 Career Connections 22275 .5 credit  
 Governance Applications 43250 1 credit  
 Youth Court 44310 1 credit

\*Required for pathway approval \*\*Required in the Strand



# HEALTH & BIO SCIENCES CAREER CLUSTER DESIGN

## BioChemistry Pathway – CIP Code 14.1401

**Approved Pathway:**

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence: Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

**INTRODUCTORY LEVEL**

Environmental Science	03003	1 credit	Chemistry	03101	1 credit
Computing Systems (8-9)	10002/60002	1 credit	Engineering Applications	21002/71002	1 credit
Computer Applications (8-9)	10004/60004	1 credit	Engineering Technology	21003/71003	1 credit

**TECHNICAL LEVEL**

Wildlife Management	18501	1 credit	Biotechnology in Agriculture	18308	1 credit
Marine Science	03005	1 credit	AP Environmental Science	03207	1 credit
IB Environmental Systems	03208	1 credit	Applied BioChemistry	03203	1 credit
Human Body Systems or	14102	1 credit	Pharmacology	14253	1 credit
Anatomy & Physiology	03053	1 credit	Plant Science/Plant & Soil Science	18055/18058	1 credit
Environmental Law	04170	1 credit			

**APPLICATION LEVEL**

Emerging Technologies in STEM	21053	1 credit	Project Management		
BioEngineering or	21020	1 credit	and Resource Scheduling	21205	1 credit
Biotechnical Engineering	21014	1 credit	Research in Environmental		
Natural Resources Management	18504	1 credit	Science and Engineering	21016	1 credit
Workplace Experience	21048	1 credit	Environmental Resources		
Particular Topics in Engineering	21015	1 credit	and Wildlife Science	37506	1 credit

# HEALTH & BIO SCIENCE CAREER CLUSTER DESIGN

## BioMedical Pathway – CIP Code 14.0501

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

Biology	03051/03052	1 credit		
Engineering Appl. (8-9)	21002/71002	1 credit	Computing Systems (8-9)	10002/60002 1 credit
Engineering Tech (8-9)	21003/71003	1 credit	Computer Appl. (8-9)	10004/60004 1 credit

### INTRODUCTORY LEVEL

### TECHNICAL LEVEL

Prin. Of Biomedical Science	14251	1 credit	Pharmacology	14253 1 credit
Medical Interventions	14105	1 credit	Food Science or	22203 1 credit
Human Body Systems or	14102	1 credit	Ag. Food Science	18305 1 credit
Anatomy & Physiology	03053	1 credit		
Robotics	21009	1 credit	AP Biology	03056 1 credit

### APPLICATION LEVEL

Biomedical Innovation	14255	1 credit	Project Management	
BioEngineering or	21020	1 credit	and Resource Scheduling	21205 1 credit
Biotechnical Engineering	21014	1 credit	Workplace Experience	14998 1 credit
Emerging Technologies in STEM	21053	1 credit	HealthCare Sciences - Other	14999 1 credit

# HEALTH & BIO SCIENCES CAREER CLUSTER DESIGN

## Health Science Pathway – CIP Code 51.9999

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

Health Science IA Biology	03052	14000 /03051	.5 credit 1 credit	OR	Health Science IB Chemistry	14001 03101	1 credit 1 credit
		<b>INTRODUCTORY LEVEL</b>					
		<b>TECHNICAL LEVEL</b>					
<b>General:</b>							
*Human Body Systems		14102	1 credit	OR	*Anatomy & Physiology AP Biology	03053 03056	1 credit 1 credit
*Health Science II		14002	1 credit				
Nutrition & Wellness		08057	.5 credit				
Medical Terminology A		14154	.5 credit	OR	Medical Terminology B	36154	1 credit
Health Information (HIT)		14157	1 credit		Forensic Science Comprehensive	44225	1 credit
Forensic Science		44224	.5 credit				
Special Health Science Topics A		14254	.5 credit		Special Health Science Topics B	36254	1 credit
<b>Sports Care &amp; Rehabilitation:</b>							
<b>Physical Therapy</b>		14060	.5 credit		<b>Care of Athletes</b>	14062	.5 credit
<b>Sports Medicine I</b>		14072	1 credit				
<b>Medical:</b>							
Emer. Medical Technology A		14055	.5 credit	OR	Emer. Med. Technology B	36055	1 credit
Medical Imaging A		14103	.5 credit	OR	Medical Imaging B	14149	1 credit
Medical Interventions		14105	1 credit		Prin. Of Biomed Science	14251	1 credit
Biotechnology I A		14252	.5 credit	OR	Biotechnology I B	36252	1 credit
Biotechnology I A		14253	1 credit				
<b>Pharmacology</b>							
<b>Health Care:</b>							
Nursing I		14051	.5 credit		<b>First AID/CPR/EMR</b>	44050	.5 credit
Home Health Care		14053	.5 credit		<b>EMT</b>	44060	1 credit
		<b>APPLICATION LEVEL</b>					
Nursing II		14052	.5 credit		<b>Sports Medicine II</b>	14073	1 credit
Biomedical Innovation		14255	1 credit		<b>Phlebotomy Technician</b>	14104	.5 credit
Biotechnology II		14256	1 credit		<b>Certified Nursing Assistant</b>	14997	.5 credit
Health Science III		36991	1 credit		Proj. Mgmt & Resource Sched.	21205	1 credit
Health Science IV (Shadow/Work)		36992	1 credit		<b>Certified Medication Aide</b>	36156	.5 credit
Health Science V (Shadow / Work)		36993	2 credit		<b>Home Health Aide</b>	36053	.5 credit
Forensic Science II		44226	1 credit				

\*Select one for pathway approval

**Boldfaced courses may require specialized teacher certification and/or offer professional certification.**

# HOSPITALITY AND TOURISM CAREER CLUSTER DESIGN

## Restaurant & Event Management Pathway – CIP Code 12.0504

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

<b>INTRODUCTORY LEVEL</b>			
Career & Life Planning	22207	.5 credit	
Business Essentials	12050	.5 credit	
Intro to Fam. & Con. Sciences	45001	1 credit	

### TECHNICAL LEVEL *(Pick a strand at division.)*

*Culinary Essentials	16052	.5 credit
Nutrition & Wellness	08057	.5 credit

Event Planning & Management Strand		Culinary Arts & Management Strand		
*Event Planning & Mgmt	34052	.5 credit		
Found. of Travel & Tour	34053	.5 credit		
		*Culinary Arts I	34056	1 credit
		Culinary Arts II	34058	.5 credit
		Baking & Pastry I	34057	.5 credit
		Baking & Pastry II	34059	.5 credit
		Food Science	22203	1 credit
		Event Plan & Management	34052	.5 credit

These may be offered after 3 credits have been selected:

Principles of Marketing	12164	1 credit
Entrepreneurship	12053	.5 credit

### APPLICATION LEVEL: *(Continue strand)*

Event Planning & Management Strand		Culinary Arts & Management Strand		
Community Connections	22270	.5 credit		
Career Connections	22275	.5 credit		
Applied Business Development	32200	1 credit		
		Community Connections	22270	.5 credit
		Career Connection	22275	.5 credit
		Culinary Applications	34198	1 credit

\*Required for pathway approval

# HOSPITALITY AND TOURISM CAREER CLUSTER DESIGN

## Travel and Tourism Pathway – CIP Code 52.0901

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

Career Life Planning	22207	.5 credit
Business Essentials	12050	.5 credit
Intro to Family & Con Sciences	45001	1.0 credit

### TECHNICAL LEVEL

*Culinary Essentials	16052	.5 credit
Entrepreneurship	12053	.5 credit
Marketing	12164	1 credit
Nutrition & Wellness	08057	.5 credit
*Event Planning & Management	34052	.5 credit

#### \*Min one of the following:

Foundations of Travel & Tourism OR	34053	.5 credit
Foundations of Hospitality & Lodging	34054	.5 credit

### APPLICATION LEVEL

Hospitality & Lodging Management	34200	1 credit
Community Connections	22270	.5 credit
Career Connections	22275	.5 credit

\*Required for pathway approval

# HUMAN SERVICES CAREER CLUSTER DESIGN

## Early Childhood Development & Services Pathway – CIP Code 19.0709

### INTRODUCTORY LEVEL

Career & Life Planning 22207 .5 credit  
Intro to Family and Consumer Sciences 45001 1 credit

### TECHNICAL LEVEL *(Select a strand at the division)*

Leadership Service in Action 22255 .5 credit

(Must teach all courses in the column of your choice)

* <u>Orientation to Early Childhood Development</u>	19051	1 credit	* <u>Human Growth &amp; Dev. A</u> OR	45004	.5 credit
			* <u>Human Growth &amp; Dev. B</u>	45014	1 credit
			* <u>Family Studies</u>	22208	.5 credit
* <u>Foundations to Early Childhood Development</u>	19052	1 credit	* <u>Foundations to Early Childhood Development</u>	19052	1 credit

### APPLICATION LEVEL

Early Childhood Application 19098 1 credit  
Community Connections 22270 .5 credit  
Career Connections 22275 .5 credit

\*Required for Pathway Approval

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.



# HUMAN SERVICES CAREER CLUSTER DESIGN

## Family, Community and Consumer Services Pathway – CIP Code 19.0799

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

Career & Life Planning	22207	.5 credit
Intro to Family and Consumer Sciences	45001	1 credit

### TECHNICAL LEVEL

* Human Growth & Develop. A	45004	.5 credit	or	Human Growth & Develop. B	45014	1 credit
* Family Studies	22208	.5 credit				
* Consumer & Personal Finance	22210	.5 credit				
Nutrition & Wellness	08057	.5 credit				
Culinary Essentials	16052	.5 credit				
Leadership Service in Action	22255	.5 credit				

### APPLICATION LEVEL

Community Connections	22270	.5 credit
Career Connections	22275	.5 credit

\*Required for Pathway approval.

# INFORMATION TECHNOLOGY CAREER CLUSTER DESIGN

## Information Support & Services Pathway – CIP Code 11.0301

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence: Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### *INTRODUCTORY LEVEL*

Computing Systems	10002/60002	1 credit
Computer Application	10004/60004	1 credit

### *TECHNICAL LEVEL*

Computer Maintenance	10252	1 credit
IT Essentials: PC Hardware & Software	10254	1 credit
Database Applications	10053	1 credit
Data Systems/Processing	10054	1 credit
Computer Technology	10251	1 credit
Info. Support & Services	10253	1 credit
CISCO Network Infrastructure Essentials	10255	1 credit
Information Management	10051	1 credit

### *APPLICATION LEVEL*

Database Mgmt. & Data Warehousing	10052	1 credit
Particular Topics in Info. Support and Serv.	10055	1 credit
Educational Trainer	10260	1 credit
Information Support Project Mgmt. & Res. Scheduling	31097	1 credit

# INFORMATION TECHNOLOGY CAREER CLUSTER DESIGN

## Network Systems Pathway CIP Code 11.090

### INTRODUCTORY LEVEL

Computing Systems	10002/60002	1 credit
Computer Applications	10004/60004	1 credit

### TECHNICAL LEVEL

Network Technology	10101	1 credit
Networking Systems	10102	1 credit
Networking Infrastructure & Routing	10105	1 credit
Telecommunications in Networking	10106	1 credit
Wireless Networking	10107	1 credit
Network Security	10108	1 credit
IT Essentials: PC Hardware & Software	10254	1 credit

### APPLICATION LEVEL

Applied Concepts of Networking	31095	1 credit
Network Systems Project Management & Resource Scheduling	31099	1 credit

#### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

# INFORMATION TECHNOLOGY CAREER CLUSTER DESIGN

## Programming and Software Development Pathway – CIP Code 11.0201

### INTRODUCTORY LEVEL

Computing Systems	10002/60002	1 credit
Computer Applications	10004/60004	1 credit
Intro. To Computer Coding	31001	.5 credit
Intro to Physical Computing	31002	.5 credit

### TECHNICAL LEVEL

Technical Intro. to Comp. Science	41010	1 credit
Computer Programming	10152	1 credit
Database Applications	10053	1 credit
Web Page Design	10201	1 credit
Data Systems/Processing	10054	1 credit
Computer Prog Other Language	10156	1 credit
AP Computer Science Principles	31094	1 credit

### APPLICATION LEVEL

Cyber Security	41036	1 credit
AP Computer Science A	10157	1 credit
IB Computing	10159	1 credit
Particular Topics in Computer Prog.	10160	1 credit
Programming and Software Development Project Management	31098	1 credit

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

# INFORMATION TECHNOLOGY CAREER CLUSTER DESIGN

## Web and Digital Communications Pathway – CIP Code 11.1004

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

Computing System	10002/60002	1 credit
Computer Applications	10004/60004	1 credit

### TECHNICAL LEVEL

Web Page Design	10201	1 credit
Computer Graphics	10202	1 credit
Interactive Media	10203	1 credit
Graphic Design	05162/11154	1 credit
Computer Programming	10152	1 credit
Internet Marketing	12162	1 credit
Animation	10210	1 credit

### APPLICATION LEVEL

Particular Topics in Media Technology	10204	1 credit
IB Information Tech. in Global Society	10007	1 credit
Emerging Technologies	10040	1 credit
Game Design & Authoring the Web	10165	1 credit
Web and Digital Communications Project Management	31096	1 credit

# LAW, PUBLIC SAFETY, CORRECTIONS & SECURITY CAREER CLUSTERS DESIGN

## Emergency & Fire Management Services– CIP Code 43.0299

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

\*Introduction to LPSS      44001    .5 credit      History of Emer. Medical Svc      44005    .5 credit

### INTRODUCTORY LEVEL

### TECHNICAL LEVEL

<b>First AID/CPR/EMR</b>	44050	.5 credit	<b>EMT I</b>	44060	1 credit
Public Safety Physical Education	44020	1 credit	Hazardous Materials for the First Responder	44070	.5 credit
<b>Fire Science I</b>	44100	1 credit			

### APPLICATION LEVEL

<b>**Fire Science II</b>	44101	1 credit
** LPSS Internship	44298	.5 credit
<b>Public Safety Telecommunications</b>	44220	.5 credit
<b>**EMT II</b>	44065	1 credit

\*Required for pathway approval.

\*\*Has a Pre-requisite course. LPSS Internship (44298) must be preceded by EMT or Fire Science. First Aid/CPR is included in Fire Science.

**Boldfaced courses offer professional certifications and require specialized teacher certification.**

# LAW, PUBLIC SAFETY, CORRECTIONS & SECURITY CAREER CLUSTER DESIGN

Corrections, Security, Law, & Law Enforcement Services – CIP Code 43.0199

## Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence:
  - Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

<b>INTRODUCTORY LEVEL</b>		Introduction to LPSS	44001	.5 credit	
<b>TECHNICAL LEVEL</b>					
<b>Pre-Law Strand</b>		<b>Law Enforcement Strand</b>			
*Business Law	12054	.5 credit	Law Enforcement I	44200	1 credit
*Practical Law	44300	.5 credit	<b>First Aid/CPR/EMR</b>	<b>44050</b>	<b>.5 credit</b>
Business Economics	12105	.5 credit	Public Safety Physical Educ.	44020	1 credit
Accounting	12104	1 credit	Hazardous Materials for the	44070	.5 credit
Business Management	12052	.5 credit	First Responder		
Business Communications	12009	.5 credit	Forensic Science	44224	.5 credit
			Forensic Science Comp	44225	1 credit
<b>APPLICATION LEVEL</b>					
<b>Pre-Law Strand</b>		<b>Law Enforcement Strand</b>			
Foundations in Law	44305	1 credit	**Law Enforcement II	44201	1 credit
Youth Court	44310	1 credit	Certified Protection Officer	44210	.5 credit
**LPSS Internship	44298	.5 credit	Corrections Officer	44215	.5 credit
			<b>Public Safety Telecom.</b>	<b>44220</b>	<b>.5 credit</b>
			**Forensic Science II	44226	1 credit
			**LPSS Internship	44298	.5 credit

**Boldfaced courses offer professional certifications and require specialized teacher certification.**

\*Required for Pathway and/or Strand      \*\*Has a Pre-requisite course



# MANUFACTURING CAREER CLUSTER DESIGN

## Manufacturing Pathway –

CIP Code 48.0000

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence: Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation include Articulation Agreement(s) and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

Introduction to Industrial Technology	38001	.5 credit
Production Blueprint Reading	21108	.5 credit
*Introduction to Welding	13207	.5 credit

### TECHNICAL LEVEL

	Production Strand	Maintenance Strand	
Manufacturing Processes	13002	1 credit	Skilled Mechanical Crafts
Advanced Production Blueprint Reading	39108	.5 credit	Advanced Production Blueprint Reading
Drafting/CAD	21107	1 credit	Machine Tool Technology 1a
Production Welding Processes I (Ag Welding)	39207 (18404)	1 credit	Maintenance Welding Processes
Machine Tool Technology	13203	1 credit	Mech. Power Transmissions & Conveyor Systems
Mass Production	13052	1 credit	
CAM	13204	1 credit	

### APPLICATION LEVEL

	Production Strand	Maintenance Strand	
**Adv. Drafting/CAD	21150	1 credit	Remodeling & Bldg. Maintenance
**Mass Production II	39052	1 credit	Sheet Metal & HVACR
**Mach. Tool Tech. II	39204	1 credit	Sheet Metal Technology
**Research & Design for Manuf.	13998	1 credit	HVAC Technology
**Production Welding Processes II	39208(18407)	1 credit	Plumbing Technology
**Automated Systems	39010	.5 credit	Electrical & Security Systems
**Advanced Materials Technology	38010	1 credit	**Hydraulics & Pneumatics

\*Production Strand Only

\*\*Has a specific Pre-requisite course(s) – See Competency Profile for details.

Work-Based Maintenance Experience

13348 .5 credit

# MARKETING CAREER CLUSTER DESIGN

## Marketing Pathway – CIP Code 52.1402

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence: Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

\*Business Essentials 12050 .5 credit

### TECHNICAL LEVEL

\*Principles of Marketing a 12164 1 credit

\*\*Business Communications 12009 .5 credit

### Technical Supportive Courses (Optional)

Accounting	12104	1 credit	Entrepreneurship	12053	.5 credit
Bus. Management	12052	.5 credit	Graphic Design	05162/1154	1 credit
Bus. Economics	12105	.5 credit	Prin. Of Advertising	12165	.5 credit
Comp. Graphics	10202	1 credit	Sports/Entertain. Mktg.	12163	.5 credit
Digital Marketing	35162	.5 credit	Web Page Design	10201	1 credit

### APPLICATION LEVEL

\*Marketing Applications a 35300 1 credit

### Application Supportive Courses (Optional)

Mktg.- Workplace Exp.	12198	.5 credit	Marketing Mgmt.	12166	1 credit
Integrated Mktg. App.	12195	.5 credit	Marketing Research	12196	1 credit
Mktg. Communications	35168	.5 credit			

\* - Required for pathway approval and used for assessing mastery of knowledge of marketing completers

\*\* - Course is not required for pathway approval, but strongly recommended by external review committee and KACCCTE

[a - Marketing Completer Assessment - Course aligns directly with MBA Research's 2-Credit Standard Marketing Program of Study Exam](#)

# TRANSPORTATION CAREER CLUSTER DESIGN

## Mobile Equipment Maintenance Pathway – CIP Code 47.9999

(Automotive Collision Strand)

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence: Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

### INTRODUCTORY LEVEL

*Intro to Industrial Technology	38001	.5 credit
*Intro to Transportation	40100	.5 credit
Automotive Information	40050	.5 credit
Business Essentials	12050	.5 credit

### TECHNICAL LEVEL

*Entrepreneurship	12053	.5 credit
Auto Collision I	40300	1 credit
Auto Refinishing Comprehensive	40308	1 credit

### APPLICATION LEVEL

**Auto Collision II	40302	1 credit	
**Custom Refinishing A	40314	.5 credit	
**Custom Refinishing B	40315	.5 credit	
Research & Emerging Trends in Transportation	40250	.5 credit	<b>OR</b> 40251 1 credit

\*One of these two courses is required for pathway approval. \*\*Has a pre-requisite course.

\*Will not count as one of the 3 required secondary level credits for pathway approval. Will count as a funded course.

# TRANSPORTATION CAREER CLUSTER DESIGN

## Mobile Equipment Maintenance Pathway – CIP Code 47.9999 (Automotive Technology Strands)

### Approved Pathway:

- 1) Includes minimum of three secondary-level credits.
- 2) Includes a work-based element.
- 3) Consists of a sequence: Introductory-level, Technical-level, and Application-level courses.
- 4) Supporting documentation includes Articulation Agreement(s), Certification, Program Improvement Plan, and a Program of Study.
- 5) Technical-level and Application-level courses receive .5 state-weighted funding in an approved CTE pathway.

*Intro to Industrial Technology	38001	.5 credit		*Intro to Transportation Business Essentials	40100	.5 credit
Automotive Information	40050	.5 credit			12050	.5 credit

### INTRODUCTORY LEVEL

### TECHNICAL LEVEL

Small Gas Engines & Powertrains	40212	1 credit	Alternative Power	40210	.5 credit
Engine Mechanical Repair	40216	.5 credit	Diesel Engine Technology	40218	.5 credit
*Entrepreneurship	12053	.5 credit			

### Strand One Automotive Technology

### Strand Two Automotive Technology

General Service I	40150	1 credit	Fund. Of Electronic/Electrical Systems	40200	1 credit
			Brakes	40204	.5 credit
			Drive Train Technology	40208	.5 credit
			Sm Gas Eng./Powertrains	40212	1 credit
			Engine Performance I	40220	.5 credit
			Steering / Suspension	40224	.5 credit
			Mobile HVAC	40228	.5 credit

### APPLICATION LEVEL

Research & Emerging Trends in Transportation	40250	.5 credit	OR	40251	1 credit	
<b>Strand One Automotive Technology</b>						
**General Service II	40152	1 credit		**Adv. Electronics/Electrical Systems	40202	1 credit
**General Service III	40154	1 credit		**Advanced Brakes	40206	.5 credit
				**Engine Performance II	40222	1 credit
				**Advanced Steering / Suspension	40226	.5 credit
				**Adv. Small Engines / Powertrains	40214	1 credit

\*One of these two courses is required for pathway approval. \*\*Has a pre-requisite course.

\*Will not count as one of the 3 required secondary level credits for pathway approval.

## KANSAS CAREER CLUSTERS TERMINOLOGY

As we design and implement the Career Clusters/Pathways Program of Study into the Kansas educational system, we find it imperative to have some common terms and definitions that are used consistently throughout the state. To that end, we provide the following terms and definitions as a resource:

**APPLICATION LEVEL COURSE:** An advanced level course that builds on the technical level course and includes opportunities for the learner to demonstrate knowledge learned through practical application of skills. It may include professional learning experience such as internship, health science clinicals, SAE, or in-house training/marketing.

**ARTICULATION:** A systematic, seamless student transition process from secondary to postsecondary education that maximizes use of resources and minimizes duplication.

**ARTICULATION AGREEMENT:** A written commitment that is agreed upon at the state level or approved annually by the lead administrators of a secondary institution and a postsecondary institution, or a sub-baccalaureate degree granting postsecondary institution and a baccalaureate degree granting institution; to a program that is designed to provide students with a non-duplicative sequence of progressive achievement leading to technical skill proficiency, a credential, a certificate or a degree and is linked through credit transfer agreements between the two institutions. [Section 3(4)] Perkins Act of 2006: The Official Guide] For Kansas use: the Articulation Agreement does not have to include a Credit transfer agreement (Advanced Placement Credit). It must include a seamless progression from one level to the next and may include such incentives as scholarships.

**CAREER AND TECHNICAL EDUCATION (CTE):** Organized educational activities that offer a sequence of courses that provide individuals with coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in current or emerging professions. It provides technical skill training leading to, an industry--recognized credential, a certificate, or an associate degree, may include prerequisite courses (other than remedial courses) that meet other requirements; and include competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, occupation-specific skills, and knowledge of all aspects of an industry, including entrepreneurship of an individual. [Section3(5) Perkins Act of 2006: The Official Guide]

**CAREER AND TECHNICAL EDUCATION (CTE) COURSE:** A CTE course (for an approved cluster/pathway) is one in a progression leading from introductory to technical to application levels that support state and national standards and competencies. The foundation for CTE courses is the inclusion of knowledge and skills that all students should achieve for a given career. Each course is required to provide enhanced and improved instruction through the integration of rigorous academics, career success skills, career development skills and student leadership. Courses may include experience-based learning opportunities. Courses, if applicable, can be articulated with a postsecondary institution for advanced placement credit. A course can be a part of a sequence of courses that creates an overall program of study assisting the student in preparing an individual plan of study.

**CAREER AND TECHNICAL EDUCATION (CTE) SEQUENCE OF COURSES:** Those courses that include the career cluster pathway knowledge and skills as recognized by the Career Clusters. These courses provide learners with rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in current or emerging

professions, provides technical skill proficiency, an industry-recognized credential, a certificate, or a postsecondary degree, may include prerequisite courses (other than remedial courses) that meet other requirements. Career and Technical education courses may begin at eighth grade and do not include career exploration courses. Academic courses are counted only if they reflect industry skill standards.

**CAREER CLUSTER(S):** Divisions of the seven fields that include occupations organized around knowledge and skills that have common characteristics and job duties. Kansas identifies 16 broad clusters: 1) Agriculture, Food and Natural Resources; 2) Architecture and Construction; 3) Arts, AV Technology and Communications; 4) Business, Management & Administration; 5) Education and Training; 6) Engineering; 7) Finance; 8) Government & Public Administration; 9) Health & Bio Science; 10) Hospitality and Tourism; 11) Human Services; 12) Information Technology; 13) Law, Public Safety and Security; 14) Manufacturing; 15) Marketing; and 16) Transportation.

**CAREER SUCCESS SKILLS:** Foundational skills that are essential for success in all careers; including applied knowledge (academic and critical thinking skills), effective relationships (interpersonal skills and personal qualities), and workplace skills (resource management, information & communication, systems thinking and technology). Kansas CTE has identified the US Department of Education's Employability Skills Framework as a model of career success skills.

**COMPLETER:** A student who has completed a minimum of three (3) secondary level credits in a single CTE pathway, with at least two (2) of those credits being a combination of technical and application level courses. A Completer must also earn an Industry-recognized certification or a passing score on a third-party, end-of-pathway assessment.

**CONCENTRATOR:** A student who has earned two (2) or more secondary level credits in a single CTE pathway, which are a combination of at least two of the three levels: Introductory, Technical and Application and meets a 70% proficiency on a technical skills assessment measured by the average of the letter grades, an average percentage on end-of-course assessments, or on the competency profile

**CROSSWALK (COMMON) COURSE:** A course that is approved for inclusion in more than one Career Cluster pathway.

**COURSE COMPETENCY:** Statement that describes a unit of instruction (or duty area) related to course outcomes. A competency statement contains an active verb (that is observable and measurable) and a noun (instructional area). Specified competencies are identified and validated by business and industry and supported by the local advisory committee.

**HIGH DEMAND OCCUPATION:** An occupation that: 1) has a critical shortage of workers to fill the employment demands of industry, and 2) requires formal training exceeding that which can be provided on the job.

**HIGH SKILL OCCUPATION:** An occupation that requires all of the following: 1) Specialized technical training, 2) an advanced level of skill sets as defined by each industry and/or education (examples: independent decision making, critical thinking, problem solving), 3) a recognized validation of skill attainment or credential (examples: certification, registration, licensure), and 4) included mandatory continuing education and/or training.

**HIGH WAGE OCCUPATION:** An occupation that: 1) has a median wage for the occupation that is at least 200% above federal poverty level for a specific area/region or an entry wage of \$11.43 or higher, and 2) offers a wage progression strategy.

**INDIVIDUAL PLAN OF STUDY:** An individual plan developed by a student (with guidance) to help guide them through the education process. It includes interest assessments to help students identify career preferences, assists with course selections based on career interests, looks at their postsecondary options, and has a portable electronic portfolio.

**INTRODUCTORY LEVEL COURSE:** An introduction to a specific or multiple clusters or pathways that require similar foundation knowledge and skills. Taken prior to the technical and application level courses.

**KANSAS CAREER FIELD(S):** Occupations that are organized around broad, common knowledge and skills. They are recognized as Media & Technology; Business; Agriculture; Design, Production, & Repair; Health; Public Services; and Family & Consumer Sciences.

**KANSAS CAREER PATHWAY(S):** Organized groupings of rigorous academic and career related courses leading from education to employment, that identify each step, skill, educational requirement and aptitude needed to be successful within any specific career. Currently there are 35 state-approved pathways identified within the 16 clusters.

**KANSAS COMMON COURSE CODE:** An alpha-numeric code used as a standard course description for secondary education that is intended to help schools and education agencies maintain longitudinal information about students' coursework in an efficient, standardized format that is consistent from one system to the next.

**KANSAS CTE SCHOLAR:** A Kansas initiative to recognize well-rounded, outstanding career and technical education (CTE) students finishing their senior year of high school.

**PARTICIPANT:** A student who has earned a minimum of .5 credit, but less than two (2) secondary level credits in a single career and technical education (CTE) pathway.

**PROFESSIONAL LEARNING EXPERIENCE (WORK-BASED EXPERIENCE):** Experience based on a learner's career interest that partners the learner with the school, community and/or business/industry. It provides career or work opportunities above and beyond the classroom; may provide instruction in all aspects of the industry. It is recommended these experiences are included in application level courses.

**PROFICIENCY CREDIT:** Full or partial academic and/or CTE credit awarded to a student who successfully demonstrated they have simultaneously met standards and expectations in more one high school course through integrated academic and/or CTE courses.

**PROGRAM(S) OF STUDY (POS):** Plan that incorporates secondary education and postsecondary education elements; includes academic and career and technical content in a coordinated, non-duplicative progression of courses; and leads to an industry-recognized credential or certificate at the postsecondary level, or an associate or bachelor's degree. The Program of Study is a requirement for Pathway approval.

**TECHNICAL LEVEL COURSE:** A course that builds on the knowledge and skills learned in the introductory level course, with a focus on acquiring practical technical skills specific to the cluster/pathway.

**21<sup>st</sup> CENTURY SKILLS:** Skills that are essential for workplace/career success, including: critical thinking/problem solving skills, communication skills, creativity & innovation skills, collaboration skills, information and media literacy skills, and contextual learning skills. They are integrated into what is known as 21<sup>st</sup> Century Content: global awareness, financial, economic, business and entrepreneurial literacy, civic literacy, health and wellness awareness, and environmental literacy.

**UNIT OF CREDIT:** A measure of credit that may be awarded to a student for satisfactory completion of a particular course or subject. A full unit of credit is that which generally requires 120 clock hours to complete. Credit may be awarded in increments based upon the amount of time a course or subject is offered and generally requires to complete. Individual students may be awarded credit based upon demonstrated knowledge of the content of a course or subject, regardless of the amount of time spent by the student in the course or subject. (Article 6, Section 2(a) of the Kansas Constitution)



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## CAREER CLUSTER RESOURCES

### [Cluster/PathwayEssentials](#)

[Advisory Committee Handbook 2017](#)

[Creating an Articulation Agreement](#)

[Current Guidelines for Facilities in CTE Classrooms/Labs](#)

[Statewide Articulation Agreements](#)

[Course Double-Up – Nesting Policy for Pathways](#)

[Kansas Pathway Assessments and Credentials \(K-PAC\) Revised June 2017](#)

[Career & Technical Student Organizations \(CTSO\)](#)

[Professional Learning Experience \(PLE\) Tool Kit](#)

[2017-18 Dates to Remember](#)

### [Pathway Application](#)

[Pathways Application Training](#)

[Pathways User's Guide](#)

[CPPSA Checklist](#)

[Pathways Student Data Management Checklist](#)

[Pathway Deletion Form](#)

### [General Links](#)

[Kansas State Department of Education](#)

[KSDE- Career & Technical Education](#)

[KSDE- Career Clusters and Pathways](#)

[Senate Bill 155](#)

## ADVISORY COMMITTEE INFORMATION

**An Advisory Committee is** a group of persons outside the education profession, comprised of representative lay-people, recognized and respected in their own fields of work who advise CTE educators, administrators, and local board of education members regarding clusters/pathways, based on the employment needs of the community, state, regional, national, and international marketplace.

**Advisory Committee Design:** Each CTE cluster or pathway must establish its own industry-unique Advisory Committee. The committee can serve multiple pathways within a cluster, but the committee as a whole cannot serve multiple clusters. An individual may serve on more than one cluster advisory committee; if appropriate (i.e. a welder could serve on both the Agriculture and Manufacturing Cluster Advisory Committees).

**Goals, Objectives and Activities:** The Advisory Committee members evaluate the Career and Technical Education (CTE) cluster/pathway they are serving and advise the CTE coordinator and local administration on improvement of the cluster/pathway. Suggestions for an advisory's committee's input include:

- Analyze the course content
- Assist with selecting appropriate industry credentials/certifications
- Evaluate facilities, program equipment, teacher resources, and textbooks
- Assist with the instructional and learning experience
- Assist with internship and job opportunities
- Form partnerships
- Advise on Short- and Long-range planning
- Provide recommendations for pathway improvement

**Organization of an Advisory Committee:** Considerable attention should be given to the careful selection of members of the local Advisory Committee. The membership of a Career Cluster/Pathway Advisory Committee must include a minimum of three (3) representatives from business/industry with the optional addition of a postsecondary representative and a current student from its respective cluster/pathway. Business/Industry members need to make their living in areas related to the pathway.

Membership of a Cluster level Advisory Committee would include a minimum of three representatives from business/industry for each pathway within the cluster.

Ex-Officio (non-voting) members of the committee include district staff and administration representatives. District staff members are strongly encouraged to attend and participate in Advisory Committee meetings, even though they are non-voting members.

**Advisory Committee Meetings:** Meetings are conducted a minimum of twice each school year with a focus on evaluating the current pathway(s). Annual discussion should include an evaluation of why the program exists.

**Pathway Improvement Plan:** A written Pathway Improvement Plan is required for each approved pathway and is to be kept on file locally and updated annually. A plan that shows growth across a three year period is required and should be written in S.M.A.R.T. Goal format. Topics should include goals for:

- Teacher Professional Development
- Physical Environment (Updating equipment and facilities)
- Instructional Strategies (Updating teacher resources, course additions, deletions, etc.)
- Partnerships (With parents, community, business/industry, and postsecondary institutions)
- Other

The Plan should be developed and approved by the Advisory Committee members and should be presented to the local Board of Education annually.

**Regional Advisory Committees:** A Regional Advisory Committee is one that represents multiple schools/districts that have the same state approved pathway. Some guidelines for Regional Advisory Committees are as follows:

- Need to include business members that represent all communities included on the committee
- Need to include postsecondary members that represent all programs covered within the pathway
- Each meeting needs to speak to each school's specific pathway successes, concerns, improvements, etc.
- Need to develop Improvement Plans for each specific school represented
- Each school needs meeting minutes specific to their school that are kept on file locally.
- **For More Information on Advisory Committees:** please consult the complete [Advisory Committee Handbook 2017](#)

## RIGOROUS PROGRAM OF STUDY RESOURCE PAGE

A Rigorous Program of Study is a comprehensive, structured approach for delivering academic and career and technical education to prepare students for postsecondary education and career success that utilizes a framework of 10 supporting elements viewed as instrumental for creating and implementing a high quality, comprehensive POS.

### 10 ELEMENTS:

1. **Legislation & Policies**- Federal, state, and local legislation or administrative policies promote POS development and implementation.
2. **Partnerships**- Ongoing relationships among education, business, and other community stakeholders are central to POS design, implementation, and maintenance.
3. **Professional Development**- Sustained, intensive, and focused opportunities for administrators, teachers, and faculty foster POS design, implementation, and maintenance.
4. **Accountability and Evaluation Systems**- Systems and strategies to gather quantitative and qualitative data on both POS components and student outcomes are crucial for ongoing efforts to development and implement POS.
5. **College and Career Readiness Standards**- Content standards that define what students are expected to know and be able to do in order to enter and advance in college and/or their careers comprise the foundation of a POS.
6. **Course Sequences**- Non-duplicative sequences of secondary and postsecondary courses within a POS ensure that students transition to postsecondary education without duplicating classes or requiring remedial coursework.
7. **Credit Transfer Agreements**- Credit transfer agreements provide opportunities for secondary students to be awarded transcripted postsecondary credit at the time the credit is earned and are supported by formal agreements between secondary and postsecondary education systems.
8. **Guidance Counseling and Academic Advisement**- Guidance counseling and academic advisement help students make informed decisions about which POS to pursue.
9. **Teaching and Learning Strategies**- Innovative and creative instructional approaches enable teachers to integrate academic and technical instruction and students to apply academic and technical learning to their POS coursework.
10. **Technical Skills Assessments**- National, state, and/or local assessments provide ongoing information to the extent to which students are attaining the necessary knowledge and skills for entry into and advancement in postsecondary education careers in their chosen POS.

For more information visit the Perkins Collaborative Resource Network (PCRN) at: <http://cte.ed.gov/nationalinitiatives/trposdesignframework.cfm>





### APPENDIX A

The courses listed below can be found in more than one pathway.

Cluster Colors	Agriculture										Architecture & Construction; Manufacturing, STEM; and Transportation				AV Technology; Information Technology			Public Services																				
	Business Management; Marketing; Finance; and Hospitality & Tourism			Education & Training; LPSS; Human Services; and Government				Health Sciences			Other Public Services			Other Public Services			Other Public Services																					
	Comp. Agriculture Science 01.9999	Animal Science 01.0901	Biotechnology in Agriculture 23.1201	Food Prod. & Proc. Systems 01.0401	Natural Res. & Env. Systems 03.0101	Plant Systems 01.1101	Power, Structural & Tech. Systems 01.0201	Cartogr./Geospatial/Math 15.1102	Construction & Design 46.0000	Energy 17.2071	Engineering & Appl. Math 14.0101	Manufacturing 48.0000	Mobile Equipment Maintenance 47.9999	AV Communications--09.0702	Info. Support & Services 11.0301	Network Systems 11.0901	Programming & Software Dev. 11.0201	Visual Arts--50.0499	Web & Digital Communications 11.1004	Business Mgmt & Entrepreneurship 52.0799	Business Finance 52.0801	Marketing 52.1402	Restaurant & Event Management 12.0504	Travel & Tourism 52.0901	Early Childhood Develop. 19.0709	Family, Consumer & Community Srv. 19.0799	Corrections, Security, Law & Law Enforcement 43.0199	Emergency & Fire Mgmt 43.0299	Government & Public Admin. 44.0401	Teaching/Training 13.0101	BioChemistry/Green/Hazmat 14.1401	BioMedical 14.0501	Health Science 51.9999					
Agribusiness Systems 01.0101																																						
Event Planning & Management 34052																																						
Exploratory Agric. 68001	X																																					
Family Studies 22208		X																																				
First Aid/CPR/EMR 44050																																						
Food Science 22203				X																																		
Forensic Science 44224																																						
Forensic Science (Comprehensive) 44225																																						
Forensic Science II 44226																																						
Found. Of Electronics 21201									X																													
Foundation to Early Childhood Development 19052																																						
Foundations In Law 44305																																						
Foundations of Lodging 34153																																						
Foundations of Travel & Tourism 34152																																						
Graphic Design 05162/11154																																						
Graphic Design Fundamentals 30102																																						
Hazardous Materials for the First Responder 44070																																						
Horticulture 18052																																						
Human Body Systems 14102																																						
Human Growth & Dev. A 45004																																						
Human Growth & Dev. B 45014																																						
HVAC Technology 17056																																						
Internet Marketing 12162																																						
Internship 18048																																						
Intro to Ag./Intro to Agriscience 18001																																						
Intro to Family & Consumer Science 45001																																						
Intro to Ind. Tech. 38001																																						
Intro to LPSS 44001																																						
IT Essentials: PC Hardware & Software 10254																																						
Leadership Service in Action TBD																																						
LPSS Internship 44298																																						





*The courses listed below can be found in more than one pathway.*

Course Titles	SCED	Cluster Colors			Agriculture	Architecture & Construction; Manufacturing; STEM; and Transportation	Education & Training; LPSS; Human Services; and Government	AV Technology; Information Technology				Public Services				
		Business Management; Marketing; Finance; and Hospitality & Tourism	Health Sciences	Health Sciences				Health Sciences								
Web Page Design	10201															
Woodworking Principles	17007															
Workplace Experience	21048															
Youth Court	44310															
					Agribusiness Systems 01.0101											
					Comp. Agriculture Science 01.9999											
					Animal Science 01.0901											
					Biotechnology in Agriculture 23.1201											
					Food Prod. & Proc. Systems 01.0401											
					Natural Res. & Env. Systems 03.0101											
					Plant Systems 01.1101											
					Power, Structural & Tech. Systems 01.0201											
					Cartogr./Geospatl/Spatial Math 15.1102											
					Construction & Design 46.0000											
					Energy 17.2071											
					Engineering & Appl. Math 14.0101											
					Manufacturing 48.0000											
					Mobile Equipment Maintenance 47.9999											
					AV Communications--09.0702											
					Info. Support & Services 11.0301											
					Network Systems 11.0901											
					Programming & Software Dev. 11.0201											
					Visual Arts--50.0499											
					Web & Digital Communications 11.1004											
					Business Mgmt & Entrepreneurship 52.0799											
					Business Finance 52.0801											
					Marketing 52.1402											
					Restaurant & Event Management 12.0504											
					Travel & Tourism 52.0901											
					Early Childhood Develop. 19.0709											
					Family, Consumer & Community Srv. 19.0799											
					Corrections, Security, Law & Law Enforcement 43.0199											
					Emergency & Fire Mgmt 43.0299											
					Government & Public Admin. 44.0401											
					Teaching/Training 13.0101											
					BioChemistry/Green/Hazmat 14.1401											
					BioMedical 14.0501											
					Health Science 51.9999											