Kansas Career Cluster Guidance Handbook

2021-2022

KANSAS CAREER AND TECHNICAL EDUCATION

KANSAS CAREER CLUSTER PATHWAY DESIGN MODELS

KANSAS
STATE DEPARTMENT OF
EDUCATION

Kansas leads the world in the success of each student.

MISSION

To prepare Kansas students for lifelong success through rigorous, quality academic instruction, career training and character development according to each student's gifts and talents.

VISION

Kansas leads the world in the success of each student.

MOTTO

Kansans Can

SUCCESS DEFINED

A successful Kansas high school graduate has the

- Academic preparation,
- Cognitive preparation,
- Technical skills,
- Employability skills and
- Civic engagement

to be successful in postsecondary education, in the attainment of an industry recognized certification or in the workforce, without the need for remediation.

OUTCOMES

- Social-emotional growth measured locally
- Kindergarten readiness
- Individual Plan of Study focused on career interest
- High school graduation
- Postsecondary success

900 S.W. Jackson Street, Suite 600
Topeka, Kansas 66612-1212

(785) 296-3203

www.ksde.org

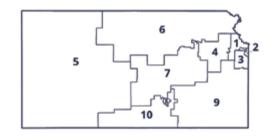# KANSAS STATE BOARD OF EDUCATION

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Kansans CAN

Kansas leads the world in the success of each student.

2021-2022 KANSAS CAREER CLUSTER GUIDANCE HANDBOOK

Contents

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Kansas Career and Technical Education

Kansas' secondary Career and Technical Education (CTE) Division has adopted the National Career Clusters model of 16 career clusters and has developed 37 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 postsecondary success. 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 37 pathways that address the need for high skill, high wage, and high demand careers in the 21st Century.

The following pages present the Career Cluster Pathways developed for local education agency implementation for school year 2020-2021. For assistance with the Authenticated Application Pathways System, contact the Pathways Helpdesk at: *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.

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Kansas CTE Career Pathways Infographics

The following two pages contain the new Kansas College and Technical Education (CTE) Career Pathways infographics.

- **Elementary Version** – shows the seven Career Fields
- **Middle School Version** – shows the seven Career Fields and the 16 Career Clusters
- **Secondary Version** - shows the seven Career Fields, the 16 Career Clusters and the 36 Pathways of study

ELEMENTARY SCHOOL LEVEL GRAPHIC

MIDDLE SCHOOL LEVEL GRAPHIC

SECONDARY SCHOOL LEVEL GRAPHIC

KSDE Secondary Level CTE Contacts

CAREER AND TECHNICAL EDUCATION

OFFICE	NAME
CTE Assistant Director	Stacy Smith (785) 296-4351 slsmith@ksde.org
Senior Administrative Assistant	Amanda Williams (785) 296-0979 awilliams@ksde.org

CLUSTER/PATHWAYS

CLUSTER/ PATHWAY	NAME	CLUSTER/ PATHWAY	NAME
Agriculture, Food and Natural Resources	Kurt Dillon (785) 296-3956 kdillon@ksde.org	Health and Bio Sciences	Wendy Coates (785) 296-3860 wcoates@ksde.org
Architecture and Construction	Crystal Roberts (785) 296-2221 croberts@ksde.org	Hospitality and Tourism	Stacy Smith (785) 296-4351 slsmith@ksde.org
Arts, A/V Technology and Communications	Nikk Nelson (785) 296-7285 nikkn@ksde.org	Human Services	Stacy Smith (785) 296-4351 slsmith@ksde.org
Business Management and Administration	Natalie Clark (785) 296-4916 ndclark@ksde.org	Information Technology	Nikk Nelson (785) 296-7285 nikkn@ksde.org
Education and Training	Stacy Smith (785) 296-4351 slsmith@ksde.org	Law, Public Safety, Corrections and Security	Crystal Roberts (785) 296-2221 croberts@ksde.org
Engineering	Crystal Roberts (785) 296-2221 croberts@ksde.org	Manufacturing	Crystal Roberts (785) 296-2221 croberts@ksde.org
Finance	Natalie Clark (785) 296-4916 ndclark@ksde.org	Marketing	Natalie Clark (785) 296-4916 ndclark@ksde.org
Government and Public Administration	Stacy Smith (785) 296-4351 slsmith@ksde.org	Transportation, Distribution and Logistics	Crystal Roberts (785) 296-2221 croberts@ksde.org

CAREER AND TECHNICAL STUDENT ORGANIZATIONS (CTSO)

CTSO	STATE ADVISOR
Business Professionals of America (BPA)	Marcy Cross (316)794-4190 mcross@goddardusd.com
DECA	Scott Jones (785) 628-4040 sjones@fhsu.org
Future Business Leaders of America (FBLA)	Connie Lindell (785) 760-1038 conniefbla@gmail.com
Family, Career and Community Leaders of America (FCCLA)	Pam Lamb (785) 296-2164 plamb@ksde.org
Future Farmers of America (FFA)	Kurt Dillon (785) 296-3956 kdillon@ksde.org
FFA Executive Secretary	Mary Kane (785) 532-6424 mrkane@k-state.edu
HOSA Future Health Professionals	Seth Nutt (620) 235-4040 snutt@kumc.edu
SkillsUSA	Becky Warren (620) 820-9367 bwarren@ksde.org
Technology Student Association (TSA)	Byron McKay (620) 235-4379 bmckay@pittstate.edu

CARL D. PERKINS

TITLE	CONTACT
Lead	Kathleen Mercer (785) 296-2307 ktmercer@ksde.org
Office of Civil Rights Visits	Wendy Coates (785) 296-2307 wcoates@ksde.org
Perkins Reserve Grant Management	See appropriate pathway consultant.

RELATED AREAS

AREA	CONTACT
K-12 Career Development	Kent Reed (785) 296-8109 kreed@ksde.org
Kansas Course Code Management System (KCCMS)	kccms@ksde.org
Kansas Individual Data on Students (KIDS)	Kids@ksde.org
Pathways Authenticated Application Assistance	pathwayshelpdesk@ksde.org
KIDS Student Course Data Submission (KCAN)	Kids@ksde.org
Teacher Licensure and Accreditation - Educator Data Collection System (EDCS)	Susan Helbert (785) 296-2289 shelbert@ksde.org

Kansas Career Cluster Pathways
Pathway Classification of Instructional Program (CIP) Codes

Agriculture, Food and Natural Resources
Agribusiness Systems*.....................01.0101
Comprehensive Agriculture
 Science...01.9999
Animal Science*...............................01.0901
Biotechnology in Agriculture*.........26.1201
Food Products and Processing
 Systems*...01.0401
Natural Res. and Environmental
 Systems*...03.0101
Plant Systems*.................................01.1101
Power, Structural and
 Technical Systems*........................01.0201

Architecture and Construction
Construction and Design*...............46.0000

Arts, A/V Technology and Communications
Digital Media*..................................09.0702
Graphic Design.................................50.0499

Business Management and Administration
Business Management and
Entrepreneurship*........................52.0799

Education and Training
Teaching/Training**.........................13.0101

Engineering
Aviation Production*........................15.0000
Engineering and Applied
 Mathematics*.................................14.0101
Energy*...17.2071

Finance
Business Finance**..........................52.0801

Government and Public Administration
Government and Public
 Administration*..............................44.0401

Health and Bio Sciences
Biochemistry*...................................14.1401
Biomedical*......................................14.0501
Health Science**..............................51.9999

Hospitality and Tourism
Restaurant and Event
 Management*..................................12.0504
Travel and Tourism**.......................52.0901

Human Services
Early Childhood Development
 and Services**.................................19.0709
Family, Community and Consumer
 Services...19.0799
Fashion, Apparel, Interior Design
 (FAID)**...19.0999

Information Technology
Information Support and
 Services*...11.0301
Network Systems*............................11.0901
Programming and
 Software Development*................11.0201
Web and Digital
 Communications............................11.1004

Law, Public Safety, Corrections and Security
Corrections, Security, Law and Law
 Enforcement Services*..................43.0199
Emergency and Fire
 Management Services*..................43.0299

Manufacturing
Manufacturing*................................48.0000

Marketing
Marketing..52.1402

Transportation, Distribution and Logistics
Aviation Maintenance*....................47.0608
Mobile Equipment Maintenance* 47.9999

* = non-traditional female

** = non-traditional male

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.
   - 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.

AGRICULTURE, FOOD AND NATURAL RESOURCES CAREER CLUSTER DESIGN

Agribusiness Systems Pathway
CIP CODE 01.0101

INTRODUCTORY LEVEL

Must ch**oos**e **ONE** of the following courses.

Title	Code	Credit
*Exploratory Agriculture	68001	1 credit
*Introduction to Agriculture	18001	1 credit

TECHNICAL LEVEL

Title	Code	Credit
Agriscience	18002	1 credit
*Agribusiness	18201	1 credit

APPLICATION LEVEL

Title	Code	Credit		Title	Code	Credit
*Applications in Agribusiness	18220	1 credit		Agricultural Leadership and Communications	18203	1 credit
Research in Agriculture	18206	1 credit		Advanced Internship	18049	1 credit
Agriculture Entrepreneurship	18202	1 credit		Internship	18048	1 credit

*   Required courses in pathway.

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.
   - 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.

AGRICULTURE, FOOD AND NATURAL RESOURCES CAREER CLUSTER DESIGN

Animal Science Pathway
CIP CODE 01.0901

INTRODUCTORY LEVEL

Must ch**oos**e **ONE** of the following courses.

Title	Code	Credit
*Exploratory Agriculture	68001	1 credit
*Introduction to Agriculture	18001	1 credit

TECHNICAL LEVEL

Title	Code	Credit
Agriscience	18002	1 credit
*Animal Science	18101	1 credit

APPLICATION LEVEL

Must choose **ONE** of the following boxed courses.

Title	Code	Credit
Advanced Animal Science	18103	1 credit
Equine Science	18104	1 credit
Small Animal Care	18102	1 credit
Animal Health/Vet Tech	18105	1 credit
Research in Agriculture	18206	1 credit
Agricultural Entrepreneurship	18202	1 credit

Title	Code	Credit
Agricultural Business	18201	1 credit
Agricultural Leadership and Communications	18203	1 credit
Advanced Internship	18049	1 credit
Internship	18048	1 credit

* Required courses in pathway.

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.
   - 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.

AGRICULTURE, FOOD AND NATURAL RESOURCES CAREER CLUSTER DESIGN

Biotechnology in Agriculture Pathway
CIP CODE 26.1201

INTRODUCTORY LEVEL

Must choose **ONE** of the following courses.

Title	Code	Credit
*Exploratory Agriculture	68001	1 credit
*Introduction to Agriculture	18001	1 credit

TECHNICAL LEVEL

Title	Code	Credit		Title	Code	Credit
Agricultural Food Science	18305	1 credit		*****Biotechnology in Agriculture	18308	1 credit
Agriscience	18002	1 credit		Horticulture	18052	1 credit
Animal Science	18101	1 credit		Plant and Soil Science	18058	1 credit

APPLICATION LEVEL

Title	Code	Credit		Title	Code	Credit
*Applications in Biotechnology	18320	1 credit		Agricultural Leadership and Communications	18203	1 credit
Agricultural Business	18201	1 credit		Advanced Internship	18049	1 credit
Agricultural Entrepreneurship	18202	1 credit		Internship	18048	1 credit
Research in Agriculture	18206	1 credit				

* Required courses in pathway.

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.
   - 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.

AGRICULTURE, FOOD AND NATURAL RESOURCES CAREER CLUSTER DESIGN

Comprehensive Agricultural Science Pathway

CIP CODE 01.9999

INTRODUCTORY LEVEL

Must choose **ONE** of the following courses.

Title	Code	Credit
*Exploratory Agriculture	68001	1 credit
*Introduction to Agriculture	18001	1 credit

TECHNICAL LEVEL

Must select at least **TWO** of the courses in this level.

Title	Code	Credit	Title	Code	Credit
Agricultural Food Science	18305	1 credit	Horticulture	18052	1 credit
Agriscience	18002	1 credit	Natural Resource Management	18504	1 credit
Animal Science	18101	1 credit	Plant and Animal Science	18301	1 credit
Biotechnology in Agriculture	18308	1 credit	Plant and Soil Science	18058	1 credit

APPLICATION LEVEL

Title	Code	Credit	Title	Code	Credit
Advanced Plant and Animal Science	18302	1 credit	Agribusiness	18201	1 credit
Agricultural Entrepreneurship	18202	1 credit	Advanced Internship	18049	1 credit
Agricultural Leadership and Communications	18203	1 credit	Internship	18048	1 credit
			Research in Agriculture	18206	1 credit

    *   Required courses in pathway.

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.

   • 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.

AGRICULTURE, FOOD AND NATURAL RESOURCES CAREER CLUSTER DESIGN

Food Products and Processing Systems Pathway

CIP CODE 01.0401

INTRODUCTORY LEVEL

Must choose **ONE** of the following courses.

Title	Code	Credit
*Exploratory Agriculture	68001	1 credit
*Introduction to Agriculture	18001	1 credit

TECHNICAL LEVEL

Must choose **ONE** of the following boxed courses.

Title	Code	Credit		Title	Code	Credit
*Ag Food Science	18305	1 credit		Animal Science	18101	1 credit
*Food Science	22203	1 credit		Plant and Soil Science	18058	1 credit
Agriscience	18002	1 credit		Horticulture	18052	1 credit

APPLICATION LEVEL

Title	Code	Credit		Title	Code	Credit
*Advanced Food Science	18317	1 credit		Agricultural Leadership and Communications	18203	1 credit
Research in Agriculture	18206	1 credit		Advanced Internship	18049	1 credit
Agricultural Entrepreneurship	18202	1 credit		Agricultural Business	18201	1 credit
Internship	18048	1 credit				

* Required courses in pathway.

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.
   - 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.

AGRICULTURE, FOOD AND NATURAL RESOURCES CAREER CLUSTER DESIGN

Natural Resources and Environmental Systems Pathway

CIP CODE 03.0101

INTRODUCTORY LEVEL

Must choose **ONE** of the following courses.

Title	Code	Credit
* Exploratory Agriculture	68001	1 credit
* Introduction to Agriculture	18001	1 credit

TECHNICAL LEVEL

Title	Code	Credit
Agriscience	18002	1 credit
* Natural Resources Management	18504	1 credit

APPLICATION LEVEL

Title	Code	Credit
Agricultural Business	18201	1 credit
Research in Agriculture	18206	1 credit
Agricultural Entrepreneurship	18202	1 credit
* Environmental Resources and Wildlife Science	37506	1 credit

Title	Code	Credit
Agricultural Leadership and Communications	18203	1 credit
Advanced Internship	18049	1 credit
Internship	18048	1 credit

* Required courses in pathway.

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.

   • 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.

AGRICULTURE, FOOD AND NATURAL RESOURCES CAREER CLUSTER DESIGN

Plant Systems Pathway
CIP CODE 01.1101

INTRODUCTORY LEVEL

Must choose **ONE** of the following courses.

Title	Code	Credit
*Exploratory Agriculture	68001	1 credit
*Introduction to Agriculture	18001	1 credit

TECHNICAL LEVEL

Must choose **ONE** of the following boxed courses.

Title	Code	Credit
Agriscience	18002	1 credit
*Plant and Soil Science	18058	1 credit
*Horticulture	18052	1 credit

APPLICATION LEVEL

Must choose **ONE** of the following boxed courses.

Title	Code	Credit
Agricultural Entrepreneurship	18202	1 credit
Agricultural Leadership and Communications	18203	1 credit
Agribusiness	18201	1 credit
*Applications in Horticulture	18071	1 credit
*Crop and Range Management	18081	1 credit
*Floriculture and Greenhouse Management	18057	1 credit

Title	Code	Credit
Advanced Internship	18049	1 credit
Internship	18048	1 credit
Research in Agriculture	18206	1 credit

*   Required courses in pathway.

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.
   - 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.

AGRICULTURE, FOOD AND NATURAL RESOURCES CAREER CLUSTER DESIGN

Power, Structural and Technical Systems Pathway
CIP CODE 01.0201

INTRODUCTORY LEVEL

Title	Code	Credit	Title	Code	Credit
*Exploratory Agriculture	68001	1 credit	*Introduction to Agriculture	18001	1 credit

TECHNICAL LEVEL

Title	Code	Credit	Title	Code	Credit
Agriscience	18002	1 credit	*Agricultural Welding I	18404/39207	1 credit
*Agricultural Mechanics	18401	1 credit	*Small Engines	18410	1 credit

APPLICATION LEVEL

Title	Code	Credit	Title	Code	Credit
*Advanced Agricultural Mechanics	18402	1 credit	*Agricultural Structures	18403	1 credit
*Advanced Agricultural Power	18411	1 credit	*Agricultural Welding II	18407/39208	1 credit
Agricultural Business	18201	1 credit	Research in Agriculture	18206	1 credit
Agricultural Entrepreneurship	18202	1 credit	Advanced Internship	18049	1 credit
*Agricultural Fabrication	18409	1 credit	Internship	18048	1 credit
Agricultural Leadership and Communications	18203	1 credit			

    *   A minimum of one starred course from each level is 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.
   - 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.

ARCHITECTURE AND CONSTRUCTION CAREER CLUSTER DESIGN
Construction and Design Pathway
CIP CODE 46.0000

INTRODUCTORY LEVEL

Title	Code	Credit
**Introduction to Industrial Technology	38001	.5 credit
Drafting	21102	.5 credit

Title	Code	Credit
Production Blueprint Reading	21108	.5 credit

TECHNICAL LEVEL

Design Strand

Title	Code	Credit
Architecture Design	21103	1 credit
Drafting/CAD	21107	1 credit
Interior Design I (*requires FACS Licensure*)	19263	.5 credit
Interior Design II (*requires FACS Licensure*)	22212	.5 credit

Construction Strand

Title	Code	Credit
Carpentry	17002	1 credit
Skilled Mechanical Crafts	17062	.5 credit
Woodworking Principles	17007	1 credit

APPLICATION LEVEL

Design Strand

Title	Code	Credit
Advanced Studies	38050	.5 credit
Interior Architectural Design	38212	.5 credit
Research and Design for Pre-construction	21109	1 credit
Comprehensive Workplace Experience in A&C	38110	1 credit
Workplace Experience in A&C	38100	.5 credit

Construction Strand

Title	Code	Credit
*Carpentry II	38002	1 credit
Furniture and Cabinetry Fabrication	38007	1 credit
***Advanced Materials Technology	38010	1 credit

Construction Strand

Title	Code	Credit
*Electrical and Security Systems	17113	.5 credit
*HVAC Technology	17056	.5 credit
*Pipefitting Technology	17061	1 credit
*Plumbing Technology	17058	.5 credit
*Remodel and Building Maintenance	17009	.5 credit
*Research and Design in Building Trades	17005	1 credit
*Sheet Metal	13205	.5 credit
Comprehensive Workplace Experience in A&C	38110	1 credit
Workplace Experience in A&C	38100	.5 credit

* Has a prerequisite.

** Required for construction strand.

*** 17007 and 38007 are prerequisites.

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.
   - 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, A/V AND COMMUNICATION CAREER CLUSTER DESIGN

Digital Media Pathway
CIP CODE 09.0702

INTRODUCTORY LEVEL

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

TECHNICAL LEVEL

Title	Code	Credit	Title	Code	Credit
*21st Century Journalism	30100	.5 credit	Graphic Design Fundamentals	30102	.5 credit
Digital Media Technology	30104	.5 credit	Graphic Design	05162/11154	1 credit
Media and Public Relations	43115	.5 credit	Digital Marketing	35162	.5 credit
Audio/Video Production Fund	30103	.5 credit	Sports and Entertainment Marketing	12163	.5 credit
Photo Imaging	30105	.5 credit			

APPLICATION LEVEL

Title	Code	Credit
Digital Media Project Management	31091	1 credit
Video Production	30150	1 credit
Digital Media Design and Production	30151	1 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.
   - 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, A/V AND COMMUNICATION CAREER CLUSTER DESIGN

Graphic Design Pathway
CIP CODE 50.0499

INTRODUCTORY LEVEL

Title	Code	Credit	Title	Code	Credit
Introduction To Drawing and Design	30006	.5 credit	Computer Applications	10004/60004	1 credit

TECHNICAL LEVEL

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

APPLICATION LEVEL

Title	Code	Credit
Graphic Design Project Management	31090	1 credit
Media Technology – Workplace Experience	10248	1 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.
   - 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.

BUSINESS MANAGEMENT AND ADMINISTRATION CAREER CLUSTER DESIGN

Business Management and Entrepreneurship Pathway

CIP CODE 52.0799

INTRODUCTORY LEVEL

Title	Code	Credit
*Business Essentials	12050**	.5 credit

TECHNICAL LEVEL

Title	Code	Credit
*Entrepreneurship	12053	.5 credit
*Business Communications	12009	.5 credit

Title	Code	Credit
*Business Management	12052	.5 credit

OPTIONAL TECHNICAL COURSES

Supportive Business and Entrepreneurship Technical

Title	Code	Credit
Business Economics	12105	.5 credit
Accounting	12104	1 credit
Business Law	12054	.5 credit
Principles of Marketing	12164	1 credit
IB Business and Management	12059	1 credit

Supportive Entrepreneurship Technical

Title	Code	Credit
Web Page Design	10201	1 credit
Internet Marketing	12162	1 credit

Supportive Entrepreneurship Technical

Title	Code	Credit
Woodworking Principles	17007	1 credit
Drafting/CAD	21107	1 credit
Agricultural Welding I	18404	1 credit
Production Welding	39207	1 credit
Remodel and Building Maintenance	17009	.5 credit
Residential Carpentry	17002	1 credit
Culinary Essentials	16052	.5 credit
Foundations of Early Childhood	19052	1 credit
Engineering Design and Development	21007	1 credit
Consumer and Personal Finance	22210	.5 credit

APPLICATION LEVEL

Title	Code	Credit
*Applied Business Development	32200	1 credit

*   Required for pathway approval.

**   Business Essentials 12050 may be integrated with Computer Applications 10004.

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.
   - 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.

EDUCATION AND TRAINING CAREER CLUSTER DESIGN

Teaching/Training Pathway
CIP CODE 13.0101

INTRODUCTORY LEVEL

Title	Code	Credit
Career and Life Planning	22207	.5 credit
Introduction to Family and Consumer Sciences	45001	1 credit

TECHNICAL LEVEL

Must choose **ONE** of the following boxed courses.

Title	Code	Credit		Title	Code	Credit
*Teaching as a Career	19151	1 credit		Family Studies	22208**	.5 credit
*Human Growth and Development A	45004**	.5 credit		Educational Leadership and Training A	19154	.5 credit
*Human Growth and Development B	45014**	1 credit		Education Research and Innovation	19155	.5 credit
Teaching Observation	42251	.5 credit				

APPLICATION LEVEL

Title	Code	Credit
Teaching Internship	19152	1 credit
Educational Leadership and Training B	19198	.5 credit

*   Required for pathway approval.

**   Alternative course (19051) maybe allowed with prior approval.

ENGINEERING CAREER CLUSTER DESIGN

Aviation Production Pathway

CIP CODE 15.0000

INTRODUCTORY LEVEL

Title	Code	Credit
Introduction to Industrial Technology	38001	.5 credit
Production Blueprint Reading	21108	.5 credit

TECHNICAL LEVEL

Title	Code	Credit
*Hand and Power Tools (*prerequisite for Tooling I*)	40400	.5 credit
*Aviation Fundamentals	40410	.5 credit
Aviation Systems	40420	1 credit

Design Strand

Title	Code	Credit
Drafting/Computer-aided Drafting (CAD) (*prerequisite for Part Design-41500*)	21107	1 credit

Production Strand

Title	Code	Credit
Mass Production I	13052	1 credit

APPLICATION LEVEL

Design Strand

Title	Code	Credit
Part Design	41500	.5 credit
Assembly Design	41505	.5 credit
Wireframe and Surfaces	41510	.5 credit
Aerospace Drawings	41515	.5 credit
Workplace Experience in Engineering	41048	.5 credit
Workplace Experience	21048	1 credit
**Special Projects and Research in Aviation	41520	1 credit

Production Strand

Title	Code	Credit
***Tooling I	40600	1 credit
Tooling II	40610	1 credit
***Aerostructures I	40620	1 credit
Aerostructures II	40630	1 credit
***Composites I	40640	1 credit
Composites II	40650	1 credit
Workplace Experience in Engineering	41048	.5 credit
Workplace Experience	21048	1 credit

*   Required for pathway approval.

**   Must offer 41500, 41505, 41510 and 41515 before offering this course.

*** Prerequisite for Level II courses.

ENGINEERING CAREER CLUSTER DESIGN

Energy Pathway
CIP CODE 17.2071

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.
   - 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

Title	Code	Credit		Title	Code	Credit
Environmental Science	41207	.5 credit		*Introduction to Energy	41100	.5 credit

TECHNICAL LEVEL

Title	Code	Credit		Title	Code	Credit
*Energy Industry Fundamentals	41105	1 credit		Wind Energy Operations	41160	1 credit
Principles Of Applied Engineering	41320	1 credit		Mechanical Power Transmission and Conveyor Systems	13302	.5 credit
Fundamentals of Electricity and Electronics	41170	1 credit		Meteorology	03006	1 credit
AP Environmental Science	03207	1 credit				
Energy, Power and Society	41150	1 credit				

APPLICATION LEVEL

Title	Code	Credit		Title	Code	Credit
Research and Development for Energy	41250	.5 credit		Materials Science in Engineering	41355	.5 credit
Research and Development for Energy Comprehensive	41260	1 credit		Hydraulics and Pneumatics	39302	.5 credit
Advanced Electricity and Electronics	41270	.5 credit		HVAC Technology	17056	.5 credit

*   Course 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.
   - 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 and Applied Mathematics Pathway

CIP CODE 14.0101

INTRODUCTORY LEVEL

Title	Code	Credit		Title	Code	Credit
*Introduction to Engineering	41310	1 credit		Production Blueprint Reading	21108	.5 credit
Chemistry	03101	1 credit				

TECHNICAL LEVEL

Must choose **ONE** of the following boxed courses.

Title	Code	Credit		Title	Code	Credit
**Engineering Design	21006	1 credit		Principles of Applied Engineering	41320	1 credit
**Drafting / CAD	21107	1 credit		Robotics	21009	1 credit
				Foundations of Electronics	21201	1 credit

APPLICATION LEVEL

Title	Code	Credit		Title	Code	Credit
Emerging Technologies	21053	1 credit		Aerospace Engineering	21013	1 credit
Digital Electronics	21008	1 credit		Particular Topics in Engineering	21015	1 credit
Computer Integrated Manufacturing	21010	1 credit		Engineering Design and Development	21007	1 credit
Project Management	41350	.5 credit		Workplace Experience in Engineering	41048	.5 credit
Materials Science and Engineering	41355	.5 credit		Workplace Experience	21048	1 credit
Civil Engineering and Architecture	21012	1 credit				

   *   Required for pathway approval

   **   Must offer 21006 or 21107, but not both in this pathway

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.
   - 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

Title	Code	Credit
*Business Essentials	12050	.5 credit

TECHNICAL LEVEL

Title	Code	Credit
*Accounting	12104	1 credit
*Consumer and Personal Finance	22210	.5 credit

OPTIONAL COURSES

Supportive

Title	Code	Credit
Business Economics	12105	.5 credit
Business Communications	12009	.5 credit

Supportive

Title	Code	Credit
Business Law	12054	.5 credit
Entrepreneurship	12053	.5 credit
Advanced Spreadsheet Applications	33110	.5 credit

APPLICATION LEVEL

Financial Institutions and Services Strand**

Title	Code	Credit
Banking and Finance	12101	.5 credit
Investing	12107	.5 credit
Risk Management and Insurance	12106	.5 credit

Accounting Strand**

Title	Code	Credit
Advanced Accounting	33108	1 credit
College Accounting	33109	1 credit

OPTIONAL COURSES

Supportive

Title	Code	Credit
Finance – Workplace Experience*****	12148	.5 credit
Finance – Workplace Experience*****	12148	1 credit
Advanced Finance – Workplace Experience	33200	1 credit

*   Required course for pathway approval.

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

*** School may include both in pathway / Student only takes one for Completer Status.

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.
   - 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.

GOVERNMENT AND PUBLIC ADMINISTRATION CAREER CLUSTER DESIGN

Government and Public Administration Pathway

CIP CODE 44.0401

INTRODUCTORY LEVEL

Title	Code	Credit
*Introduction to Government and Public Administration	43001	.5 credit
Career and Life Planning	22207	.5 credit

TECHNICAL LEVEL

Title	Code	Credit
*Government and Public Administration Fundamentals	43105	.5 credit
Human Growth and Development A	45004	.5 credit
IT for Service Professions	44010	.5 credit

Business Strand

Title	Code	Credit
Business Economics	12105	.5 credit
**Business Law	12054	.5 credit
Business Management	12052	.5 credit
Accounting	12104	1 credit

Pre-Law Legal Assistance Strand

Title	Code	Credit
Business Economics	12105	.5 credit
**Business Law	12054	.5 credit
**Practical Law	44300	.5 credit
Media and Public Relations	43115	.5 credit

APPLICATION LEVEL

Title	Code	Credit
Foundations in Law	44305	1 credit
Career Connections	22275	.5 credit

Title	Code	Credit
Governance Applications	43250	1 credit
Youth Court	44310	1 credit

*   Required for pathway approval.

**   Required in the strand.

HEALTH AND 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.
   - 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

Title	Code	Credit	Title	Code	Credit
Environmental Science	03003	1 credit	Computer Applications (8-9)	10004/60004	1 credit
Computing Systems (8-9)	10002/60002	1 credit	Chemistry	03101	1 credit

TECHNICAL LEVEL

Title	Code	Credit	Title	Code	Credit
*Anatomy and Physiology	03053	1 credit	Applied Biochemistry	03203	1 credit
Biotechnology in Agriculture	18308	1 credit	Pharmacology	14253	1 credit
AP Environmental Science	03207	1 credit	Plant and Soil Science	18058	1 credit

APPLICATION LEVEL

Must choose **ONE** of the boxed courses.

Title	Code	Credit	Title	Code	Credit
Emerging Technologies	21053	1 credit	BioChem Workplace Experience	21048	1 credit
*Bioengineering	21020	1 credit	Applications in Biotechnology in Ag	18320	1 credit
*Biotechnical Engineering	21014	1 credit	Environmental Resources and Wildlife Science	37506	1 credit
Natural Resources Management	18504	1 credit			

* Required for pathway approval.

HEALTH AND BIO SCIENCES 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.
   - 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

Title	Code	Credit	Title	Code	Credit
Biology	03051/03052	1 credit	Computing Systems (8-9)	10002/60002	1 credit
Chemistry	03101	1 credit	Computer Application (8-9)	10004/60004	1 credit

TECHNICAL LEVEL

Must choose **ONE** course in each boxed courses.

Title	Code	Credit	Title	Code	Credit
Prin. of Biomedical Science	14251	1 credit	Pharmacology	14253	1 credit
Medical Interventions	14105	1 credit	Food Science	22203	1 credit
*Human Body Systems	14102	1 credit	Agricultural Food Science	18305	1 credit
*Anatomy and Physiology	03053	1 credit	AP Biology	03056	1 credit
Robotics	21009	1 credit			

APPLICATION LEVEL

Must choose **ONE** of the boxed courses.

Title	Code	Credit	Title	Code	Credit
Biomedical Innovation	14255	1 credit	Emerging Technologies	21053	1 credit
*Bioengineering	21020	1 credit	Particular Topics in Engineering	21015	1 credit
*Biotechnical Engineering	21014	1 credit	Biomedical Workplace Experience	14998	1 credit

* Required for pathway approval.

HEALTH AND 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.
   - 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

Title	Code	Credit	Title	Code	Credit
*Intro to Health Care	14000	.5 credit	Chemistry	03101	1 credit
Biology	03051	1 credit			

TECHNICAL LEVEL

Title	Code	Credit
Nutrition and Wellness	08057	.5 credit
*Anatomy and Physiology	03053	1 credit
First Aid/CPR/EMR	44050	.5 credit
Medical Terminology	14154	.5 credit
Health Information (HIT)	14157	1 credit
AP Biology	03056	1 credit
Health Care Research and Clinical Skills A	14254	.5 credit
Health Care Research and Clinical Skills B	36254	1 credit

General Health (PA, Med) Strand

Title	Code	Credit
Fund. of Emergency Services	14055	.5 credit

General Health (PA, Med) Strand

Title	Code	Credit
Medical Interventions	14105	1 credit

Sports Med/Rehabilitation (ATC,PT,OT) Strand

Title	Code	Credit
† Sports Medicine I	14072	1 credit
† Physical Therapy	14060	1 credit
† Care of Athletes	14062	.5 credit

Allied Health (Nursing, X-Ray, EMT, Lab Sciences) Strand

Title	Code	Credit
† Emergency Medical Tech (EMT)	44060	1 credit
† Pharmacology	14253	1 credit
Medical Imaging	14103	.5 credit

APPLICATION LEVEL

Title	Code	Credit
† Certified Medication Aide	36156	.5 credit
† Certified Nursing Assistant	14997	.5 or 1 credit
Health care Work Experience	36992	1 credit
Health care Work Experience	36993	2 credit

General Health (PA, Med) Strand

Title	Code	Credit
† Phlebotomy Technician	14104	.5 credit

Sports Med/Rehabilitation (ATC,PT,OT) Strand

Title	Code	Credit
† Sports Medicine II	14073	1 credit

Allied Health (Nursing, X-Ray, EMT, Lab Sciences) Strand

Title	Code	Credit
† Home Health Aide	36053	.5 credit
† Phlebotomy Technician	14104	.5 credit
† Pharmacy Technician	36157	1 credit
† Dental Assistant	36054	1 credit
† **Emergency Medical Tech II (EMT II)	44065	1 credit

* Required for pathway approval.

** Prerequisite: Emergency Medical Tech (44060)

† Courses may require specialized teacher certification and/or offer professional certification.

HOSPITALITY AND TOURISM CAREER CLUSTER DESIGN

Restaurant and Event Management Pathway

CIP CODE 12.0504

INTRODUCTORY LEVEL

Title	Code	Credit
Career and Life Planning	22207	.5 credit
Business Essentials	12050	.5 credit

Title	Code	Credit
Introduction to Family and Consumer Sciences	45001	1 credit

TECHNICAL LEVEL

Select a strand at division.

Title	Code	Credit
*Culinary Essentials	16052	.5 credit
Nutrition and Wellness	08057	.5 credit

Event Planning and Management Strand

Title	Code	Credit
*Event Planning and Management	34052	.5 credit
Found. of Travel and Tour	34053	.5 credit

Culinary Arts and Management Strand

Title	Code	Credit
*Culinary Arts I (*prerequisite for 34058*)	34056	1 credit
Culinary Arts II	34058	.5 credit

Culinary Arts and Management Strand

Title	Code	Credit
Baking and Pastry I (*prerequisite for 34059*)	34057	.5 credit
Baking and Pastry II	34059	.5 credit
Food Science	22203	1 credit
Event Plan and Management	34052	.5 credit

These may be offered after 3 credits have been selected:

Title	Code	Credit
Principles of Marketing	12164	1 credit
Entrepreneurship	12053	.5 credit

APPLICATION LEVEL

Event Planning and Management Strand

Title	Code	Credit
Community Connections	22270	.5 credit
Career Connections	22275	.5 credit
Applied Business Development	32200	1 credit

Culinary Arts and Management Strand

Title	Code	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.
   - 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

Title	Code	Credit
Career Life Planning	22207	.5 credit
Business Essentials	12050	.5 credit
Introduction to Family and Consumer Sciences	45001	1 credit

TECHNICAL LEVEL

Must choose **ONE** of the following boxed courses.

Title	Code	Credit		Title	Code	Credit
* Culinary Essentials	16052	.5 credit		***** Event Planning and Management	34052	.5 credit
Entrepreneurship	12053	.5 credit		***** Foundations of Travel and Tourism	34053	.5 credit
Marketing	12164	1 credit		***** Foundations of Hospitality and Lodging	34054	.5 credit
Nutrition and Wellness	08057	.5 credit				

APPLICATION LEVEL

Title	Code	Credit
Hospitality and 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 and Services Pathway

CIP CODE 19.0709

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.
   - 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

Title	Code	Credit
Career and Life Planning	22207	.5 credit

Title	Code	Credit
Introduction to Family and Consumer Sciences	45001	1 credit

TECHNICAL LEVEL

Select a strand at the division.

Title	Code	Credit
Leadership Service in Action	22255	.5 credit

Must teach <u>ALL</u> courses in the strand of your choice.

Strand 1

Title	Code	Credit
*Orientation to Early Childhood Development	19051	1 credit
*Foundations to Early Childhood Development	19052	1 credit

Strand 2

Must choose <u>ONE</u> of the boxed courses.

Title	Code	Credit
*Human Growth and Dev. A	45004	.5 credit
*Human Growth and Dev. B	45014	1 credit
*Family Studies	22208	.5 credit
*Foundations to Early Childhood Development	19052	1 credit

APPLICATION LEVEL

Title	Code	Credit
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.
   - 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

INTRODUCTORY LEVEL

Title	Code	Credit
Career and Life Planning	22207	.5 credit
Introduction to Family and Consumer Sciences	45001	1 credit

TECHNICAL LEVEL

Must choose **ONE** of the boxed courses.

Title	Code	Credit
*Human Growth and Develop. A	45004	.5 credit
*Human Growth and Develop. B	45014	1 credit
*Family Studies	22208	.5 credit

Title	Code	Credit
*Consumer and Personal Finance	22210	.5 credit
Nutrition and Wellness	08057	.5 credit
Culinary Essentials	16052	.5 credit
Leadership Service in Action	22255	.5 credit

APPLICATION LEVEL

Title	Code	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.
   - 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

Fashion, Apparel, Interior Design (FAID) Pathway
CIP CODE 19.0999

INTRODUCTORY LEVEL

Title	Code	Credit
Career and Life Planning	22207	.5 credit
Introduction to Drawing	30005	.5 credit

Title	Code	Credit
**Drafting	21102	.5 credit
Introduction to Family and Consumer Sciences	45001	1 credit

TECHNICAL LEVEL

Select a strand at the division.

Title	Code	Credit
*Essentials of FAID	30110	.5 credit
FAID Merchandising and Entrepreneurship	30112	.5 credit

Fashion and Apparel Design (Strand A)

Title	Code	Credit
*Fashion Trends	30111	.5 credit
*Apparel Production I	19201	.5 credit
Apparel Production II	19203	.5 credit

Interior Design (Strand B)

Title	Code	Credit
*Interior Design I	19263	.5 credit
Interior Design II	22212	.5 credit
**Architecture Design	21103	1 credit

APPLICATION LEVEL

Strands A and B

Title	Code	Credit
FAID Studio	30160	1 credit
Career Connections	22275	.5 credit

* Required for pathway approval per strand.

** Only for Interior 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.

   • 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

Information Support and Services Pathway
CIP CODE 11.0301

INTRODUCTORY LEVEL

Title	Code	Credit
Computing Systems	10002/60002	1 credit
Computer Applications	10004/60004	1 credit

TECHNICAL LEVEL

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

APPLICATION LEVEL

Title	Code	Credit
Database Management and Data Warehousing	10052	1 credit
Particular Topics in Information Support and Service	10055	1 credit
Educational Trainer	10260	1 credit
Information Systems Project Management and Resource Scheduling	31097	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.
   - 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

Network Systems Pathway
CIP CODE 11.0901

INTRODUCTORY LEVEL

Title	Code	Credit
Computing Systems	10002/60002	1 credit
Computer Applications	10004/60004	1 credit

TECHNICAL LEVEL

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

APPLICATION LEVEL

Title	Code	Credit
Applied Concepts of Networking Systems	31095	1 credit
Network Systems Project Management and 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.
   - 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

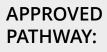# Programming and Software Development Pathway

CIP CODE 11.0201

INTRODUCTORY LEVEL

Title	Code	Credit	Title	Code	Credit
Computing Systems	10002/60002	1 credit	Introduction to Computer Coding	31001	.5 credit
Computer Applications	10004/60004	1 credit	Introduction to Physical Computing	31002	.5 credit

TECHNICAL LEVEL

Title	Code	Credit	Title	Code	Credit
Technical Introduction to Computer Science	41010	1 credit	Data Systems/Processing	10054	1 credit
Computer Programming	10152	1 credit	Computer Programming Other Language	10156	1 credit
Database Applications	10053	1 credit	AP Computer Science Principles	31094	1 credit
Web Page Design	10201	1 credit			

APPLICATION LEVEL

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

INTRODUCTORY LEVEL

Title	Code	Credit
Computing Systems	10002/60002	1 credit
Computer Applications	10004/60004	1 credit

TECHNICAL LEVEL

Title	Code	Credit	Title	Code	Credit
Web Page Design	10201	1 credit	Computer Programming	10152	1 credit
Computer Graphics	10202	1 credit	Internet Marketing	12162	1 credit
Interactive Media	10203	1 credit	Animation	10210	1 credit
Graphic Design	05162/11154	1 credit	GIS Technology	21058	1 credit

APPLICATION LEVEL

Title	Code	Credit	Title	Code	Credit
Particular Topics in Media Technology	10204	1 credit	Game Design and Authoring for the Web	10165	1 credit
IB Information Technology in Global Society	10007	1 credit	Web and Digital Communications Project Management	31096	1 credit
Emerging Technologies - Computing	10040	1 credit	GIS Spatial Applications	21112	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.
   - 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.

LAW, PUBLIC SAFETY, CORRECTIONS AND SECURITY CAREER CLUSTERS DESIGN

Emergency and Fire Management Services
CIP CODE 43.0299

INTRODUCTORY LEVEL

Title	Code	Credit		Title	Code	Credit
*Introduction to Law Public Services and Security (LPSS)	44001	.5 credit		History of Emergency Medical Services	44005	.5 credit

TECHNICAL LEVEL

Title	Code	Credit		Title	Code	Credit
First Aid/CPR/EMR	44050	.5 credit		Hazardous Materials for the First Responder	44070	.5 credit
EMT I	44060	1 credit		† **Fire Science I** †	44100	1 credit
Public Safety Physical Education	44020	1 credit				

APPLICATION LEVEL

Title	Code	Credit		Title	Code	Credit
Fire Science II †	44101	1 credit		**Public Safety Telecommunications**	44220	.5 credit
**LPSS Internship	44298	.5 credit		**EMT II**	44065	1 credit

*   Required for pathway approval.

**   Has a prerequisite course. LPSS Internship (44298) must be preceded by EMT or Fire Science.

†   First Aid/CPR is included in Fire Science.

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

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.
   - 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.

LAW, PUBLIC SAFETY, CORRECTIONS AND SECURITY CAREER CLUSTERS DESIGN

Corrections, Security, Law and Law Enforcement Services

CIP CODE 43.0199

INTRODUCTORY LEVEL

Title	Code	Credit
*Introduction to Law Public Services and Security (LPSS)	44001	.5 credit

TECHNICAL LEVEL

Pre-Law Strand

Title	Code	Credit
*Business Law	12054	.5 credit
*Practical Law	44300	.5 credit
Business Economics	12105	.5 credit
Accounting	12104	1 credit
Business Management	12052	.5 credit
Business Communications	12009	.5 credit

Law Enforcement Strand

Title	Code	Credit
Law Enforcement I	44200	1 credit
First Aid/CPR/EMR	44050	.5 credit
Public Safety Physical Education	44020	1 credit
Hazardous Materials for the First Responder	44070	.5 credit
Forensic Science	44224	.5 credit
Forensic Science Comprehensive	44225	1 credit

APPLICATION LEVEL

Pre-Law Strand

Title	Code	Credit
Foundations in Law	44305	1 credit
Youth Court	44310	1 credit
***LPSS Internship	44298	.5 credit

Law Enforcement Strand

Title	Code	Credit
**Law Enforcement II	44201	1 credit
Certified Protection Officer	44210	.5 credit
Corrections Officer	44215	.5 credit
Public Safety Telecom.	44220	.5 credit
**Forensic Science II	44226	1 credit
† LPSS Internship	44298	.5 credit

* Required for pathway and/or strand.

** Has a prerequisite course.

*** Must be preceded by Business Law, Practical Law AND Foundations in Law or Youth Court.

† Law Enforcement Strand LPSS Internship (44298) must be preceded by:
- Law Enforcement I & II
- OR Law Enforcement 1 AND Certified Protection Officer or Corrections Officer or Public Safety Telcom
- OR Forensic Science, Hazardous Materials, AND Forensic Science II
- OR Forensic Science Comprehensive AND Forensic Science II

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

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.
   - 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

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

TECHNICAL LEVEL

Production Strand

Title	Code	Credit
Manufacturing Processes	13002	1 credit
Advanced Production Blueprint Reading	39108	.5 credit
Drafting/CAD	21107	1 credit
Production Welding Processes I (Agricultural Welding)	39207 (18404)	1 credit
Machine Tool Technology	13203	1 credit
Mass Production	13052	1 credit
Computer-Aided Manufacturing (CAM)	13204	1 credit

Maintenance Strand

Title	Code	Credit
Skilled Mechanical Crafts	17062	.5 credit
Advanced Production Blueprint Reading	39108	.5 credit
Machine Tool Technology 1a	39203	.5 credit
Maintenance Welding Processes	13208	1 credit
Mechanical Power Transmission and Conveyor Systems	13302	.5 credit

APPLICATION LEVEL

Production Strand

Title	Code	Credit
**Advanced Drafting/CAD	21150	1 credit
**Advanced Materials Technology	38010	1 credit
**Automated Systems	39010	.5 credit
**Machine Tool Technology II	39204	1 credit
**Mass Production II	39052	1 credit
**Production Welding Processes II (Ag Welding II)	39208 (18407)	1 credit
**Research and Design for Manufacturing	13998	1 credit

Maintenance Strand

Title	Code	Credit
Remodeling and Building Maintenance	17009	.5 credit
Sheet Metal and HVACR	38012	1 credit
Sheet Metal Technology	13205	.5 credit
HVAC Technology	17056	.5 credit
Plumbing Technology	17058	.5 credit
Electrical and Security Systems	17113	.5 credit
**Hydraulics and Pneumatics	39302	.5 credit
Work-Based Maintenance Experience	13348	.5 credit

* Production strand only.

** Has a specific prerequisite course(s) – See Competency Profile for details.

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.
   - 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.

MARKETING CAREER CLUSTER DESIGN

Marketing Pathway
CIP CODE 52.1402

INTRODUCTORY LEVEL

Title	Code	Credit
**Business Essentials	12050	.5 credit

TECHNICAL LEVEL

Title	Code	Credit
****Business Communications	12009	.5 credit
Principles of Marketing	12164	1 credit

OPTIONAL TECHNICAL SUPPORTIVE COURSES

Title	Code	Credit	Title	Code	Credit
Accounting	12104	1 credit	Entrepreneurship	12053	.5 credit
Business Economics	12105	.5 credit	Graphic Design	05162/11154	1 credit
Business Management	12052	.5 credit	Principles of Advertising	12165	.5 credit
Computer Graphics	10202	1 credit	Sports/Entertainment Marketing	12163	.5 credit
Digital Marketing	35162	.5 credit	Web Page Design	10201	1 credit

APPLICATION LEVEL

Title	Code	Credit
Marketing Applications	35300	1 credit

OPTIONAL APPLICATION SUPPORTIVE COURSES

Title	Code	Credit	Title	Code	Credit
Integrated Marketing Applications	12195	.5 credit	Marketing Research	12196	1 credit
Marketing - Workplace Experience	12198	.5 credit	Marketing Communications	35168	.5 credit
Marketing Management	12166	1 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 Kansas Advisory Committee for Career and Technical Education (KACCTE).

Boldfaced courses - Marketing Completer Assessment aligns directly with MBA Research's 2 - Credit Standard Marketing Program of Study Exam.

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.
   - 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.

TRANSPORTATION CAREER CLUSTER DESIGN

Aviation Maintenance Pathway
CIP CODE 47.0608

INTRODUCTORY LEVEL

Title	Code	Credit	Title	Code	Credit
Introduction to Industrial Technology	38001	.5 credit	Production Blueprint Reading	21108	.5 credit

TECHNICAL LEVEL

Title	Code	Credit
*Hand and Power Tools	40400	.5 credit
*Aviation Fundamentals	40410	.5 credit
Aviation Systems	40420	1 credit

Avionics Strand

Title	Code	Credit
Foundations of Electronics	21201	1 credit

Engine Maintenance Strand

Title	Code	Credit
Foundations of Electronics	21201	1 credit
Aviation Engine Basics	40430	1 credit

APPLICATION LEVEL

Avionics Strand

Title	Code	Credit
AC Electronics	40450	.5 credit
DC Electronics	40460	.5 credit
Microcontrollers	40470	1 credit
Integrated Circuits	40480	1 credit
Drones	40490	1 credit
Digital Electronics	21008	1 credit
Workplace Experience in Engineering	41048	.5 credit
Workplace Experience	21048	1 credit

Engine Maintenance Strand

Title	Code	Credit
Aviation Engine Performance I	40500	1 credit
Aviation Engine Performance II	40510	1 credit
Aviation Material Processes	40520	1 credit
Aviation Pneumatics and Hydraulics	40530	1 credit
Workplace Experience in Engineering	41048	.5 credit
Workplace Experience	21048	1 credit

* Courses 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.
   - 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.

TRANSPORTATION CAREER CLUSTER DESIGN

Mobile Equipment Maintenance Pathway

CIP CODE 47.9999

Automotive Collision Strand

INTRODUCTORY LEVEL

Must choose **ONE** of the boxed courses.

Title	Code	Credit
*Introduction to Industrial Technology	38001	.5 credit
*Introduction to Transportation	40100	.5 credit

Title	Code	Credit
Automotive Information	40050	.5 credit
Business Essentials	12050	.5 credit

TECHNICAL LEVEL

Title	Code	Credit
***Entrepreneurship	12053	.5 credit
Auto Collision I	40300	1 credit

Title	Code	Credit
Auto Refinishing Comprehensive	40308	1 credit

APPLICATION LEVEL

Must choose **ONE** of the boxed courses.

Title	Code	Credit
**Auto Collision II	40302	1 credit
**Custom Refinishing A	40314	.5 credit
**Custom Refinishing B	40315	.5 credit

Title	Code	Credit
Research and Emerging Trends in Transportation	40250	.5 credit
Research and Emerging Trends in Transportation	40251	1 credit

*   One of these two courses is required for pathway approval.

**   Has a prerequisite course.

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

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.
   - 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.

TRANSPORTATION CAREER CLUSTER DESIGN

Mobile Equipment Maintenance Pathway

CIP CODE 47.9999

Automotive Technology Strands

INTRODUCTORY LEVEL

Title	Code	Credit
*Introduction to Industrial Technology	38001	.5 credit
*Introduction to Transportation	40100	.5 credit

Title	Code	Credit
Automotive Information	40050	.5 credit
Business Essentials	12050	.5 credit

TECHNICAL LEVEL

Title	Code	Credit
Small Gas Engines and 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

Title	Code	Credit
Strand One		
General Service I	40150	1 credit
Strand Two		
Fund. of Electronic/Electrical Systems	40200	1 credit
Brakes	40204	.5 credit
Drive Train Technology	40208	.5 credit
Engine Performance	40220	.5 credit
Steering/Suspension	40224	.5 credit
Mobile HVAC	40228	.5 credit

APPLICATION LEVEL

Must choose **ONE** of the boxed courses.

Title	Code	Credit
*Research and Emerging Trends in Transportation	40250	.5 credit
*Research and Emerging Trends in Transportation	40251	1 credit

Strand One

Title	Code	Credit
**General Service II	40152	1 credit
**General Service III	40154	1 credit

Strand Two

Title	Code	Credit
**Adv. Electronics/Electrical Systems	40202	1 credit
**Advanced Brakes	40206	.5 credit
**Advanced Small Engines/Powertrains	40214	1 credit
**Engine Performance II	40222	1 credit
**Advanced Steering/Suspension	40226	.5 credit

* One of these two courses is required for pathway approval.

** Has a prerequisite course.

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

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 experiences such as an internship, health science clinical, SAE, or school-based 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 AND TECHNICAL STUDENT ORGANIZATIONS (CTSOs): Student-led organizations which are aligned and integrated into CTE programs at the middle, secondary and/or post-secondary institutions. Members develop and demonstrate leadership, personal growth, civic engagement, technical skills and 21st century skills in authentic, real world applications.

CAREER CLUSTER(S): Divisions of the seven Kansas 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, A/V Technology and Communications;
4. Business, Management and Administration;
5. Education and Training;
6. Engineering;
7. Finance;
8. Government and Public Administration;
9. Health and 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 and 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.

CTE SCHOLAR: See Kansas CTE Scholar

CIVIC ENGAGEMENT: The sharing of personal skills and knowledge through actions intended to improve communities, states, nations, the world and themselves.

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.

INTERNSHIP: A supervised work-based experience that links a learner with an employer for a planned set of activities designed to give the learner a broad overview of a business or occupational field (can be for a short or long term period/paid or unpaid).

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 and Technology; Business; Agriculture; Design, Production, and Repair; Health; Public Services; and Family and 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 37 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: An outstanding career and technical education student in their senior year who has met criterion to indicate their well-rounded development.

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. These experiences are most commonly in application level courses.

PROFICIENCY CREDIT: Full or partial academic and/or CTE credit awarded to a student who has successfully demonstrated they have simultaneously met standards and expectations in more than 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.

21st CENTURY SKILLS: Skills that are essential for workplace/career success; including: critical thinking/problem solving skills, communication skills, creativity and innovation skills, collaboration skills, information and media literacy skills, and contextual learning skills. They are integrated into what is known as 21st 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)

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 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(.https://www.ksde.org/Portals/0/CSAS/ CSAS%20Home/CTE%20Home/Business_Industry/Advisory%20Committee%20 Handbook%202017.pdf*).

Pathway Crossover Course Information

Several of our Pathway courses are utilized in more than one Pathway. The following pages contain a chart that shows which courses are in multiple Pathways.

PATHWAY CLASSIFICATION OF INSTRUCTIONAL PROGRAM AND CIP CODE

COURSE TITLES	SCED	Agribusiness Systems 01.0101	Comp. Agriculture Science 01.9999	Animal Science 01.0901	Biotechnology in Agriculture 23.1201	Food Prod. and Proc. Systems 01.0401	Natural Res. and Env. Systems 03.0101	Plant Systems 01.1101	Power,Strctural and Tech. Systems 01.0201	Aviation Production 15.0000	Aviation Maintenance 47.0000	Construction and Design 46.0000	Energy 17.2071	Engineering and Appl. Math 14.0101	Manufacturing 48.0000	Mobile Equipment Maintenance 47.9999	Digital Media 09.0702	Info. Support and Services 11.0301	Network Systems 11.0901	Programming and Software Dev. 11.0201	Graphic Design 50.0499	Web and Digital Communications 11.1004	Business Mgmnt and Entrepreneurship 52.0799	Business Finance 52.0801	Marketing 52.1402	Restaurant and Event Management 12.0504	Travel and Tourism 52.0901	Early Childhood Develop. 19.0709	Family, Consumer and Community Srv. 19.0799	F.A.I.D. 19.0999	Corrections, Security, Law and Law Enforcement 43.0199	Emergency and Fire Mgmnt 43.0299	Government and Public Admin. 44.0401	Teaching/Training 13.0101	BioChemistry/Green/Hazmat 14.1401	BioMedical 14.0501	Health Science 51.9999
Accounting	12104																						X	X	X						X		X				
Adv. Materials Technology	38010											X		X																							
Advanced Internship	18049	X	X	X	X	X	X	X	X																												
Ag. Entrepreneurship	18202	X	X	X	X	X	X	X	X																												
Ag. Food Science	18305		X			X	X																													X	
Ag. Leadership and Communications	18203	X	X	X	X	X	X	X	X																												
Ag. Welding I	18404											X			X								X														
Ag. Welding II	18407											X			X																						
Agribusiness	18201	X	X	X	X	X	X	X	X														X														
Agriscience	18002	X	X	X	X	X	X	X	X																												
Anatomy and Physiology	03053																																		X	X	X
Animal Science	18101		X	X	X	X																															
AP Biology	03056																																			X	X
Applied Business Development	32200																						X			X											
Architecture Design	21103											X																	X								
Aviation Fundamentals	40410									X	X																										
Aviation Systems	40420									X	X																										
Bioengineering	21020																																		X	X	
Biology	03051/53051																																			X	X
Biomedical Innovation	14255																																			X	X

PATHWAY CLASSIFICATION OF INSTRUCTIONAL PROGRAM AND CIP CODE

Column groups:
- **Agriculture, Food and Natural Resources**
- **Architecture and Construction • Engineering • Transportation, Distribution and Logistics**
- **Arts, A/V Technology and Communications • Information Technology**
- **Business Management and Administration • Finance • Manufacturing • Marketing**
- **Education and Training • Hospitality and Tourism • Human Services**
- **Government and Public Administration • Law, Public Safety, Corrections and Security**
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COURSE TITLES	SCED	Agribusiness Systems 01.0101	Comp. Agriculture Science 01.9999	Animal Science 01.0901	Biotechnology in Agriculture 23.1201	Food Prod. and Proc. Systems 01.0401	Natural Res. and Env. Systems 03.0101	Plant Systems 01.1101	Power, Strctural and Tech. Systems 01.0201	Aviation Production 15.0000	Aviation Maintenance 47.0000	Construction and Design 46.0000	Energy 17.2071	Engineering and Appl. Math 14.0101	Manufacturing 48.0000	Mobile Equipment Maintenance 47.9999	Digital Media 09.0702	Info. Support and Services 11.0301	Network Systems 11.0901	Programming and Software Dev. 11.0201	Graphic Design 50.0499	Web and Digital Communications 11.1004	Business Mgmnt and Entrepreneurship 52.0799	Business Finance 52.0801	Marketing 52.1402	Restaurant and Event Management 12.0504	Travel and Tourism 52.0901	Early Childhood Develop. 19.0709	Family, Consumer and Community Srv. 19.0799	F.A.I.D. 19.0999	Corrections, Security, Law and Law Enforcement 43.0199	Emergency and Fire Mgmnt 43.0299	Government and Public Admin. 44.0401	Teaching/Training 13.0101	BioChemistry/Green/Hazmat 14.1401	BioMedical 14.0501	Health Science 51.9999
Biotech in Agriculture	18308	X			X																														X		
Biotechnical Engin.	21014																																		X	X	
Bus. Communications	12009																						X	X	X								X				
Bus. Economics	12105																						X	X	X						X		X				
Business Essentials	12050																X	X					X	X	X	X	X										
Business Law	12054																						X	X							X		X				
Business Management	12052																						X		X						X		X				
Career and Life Planning	22207																									X	X	X	X	X			X	X			
Career Connections	22275																									X	X	X	X	X			X				
Community Connections	22270																									X	X	X	X								
Computer Applications	10004/60004																X	X	X	X	X	X													X	X	
Computer Graphics	10202																		X	X					X												
Computer Progr.	10152																		X		X																
Computing Systems	10002/60002																	X	X	X		X													X	X	
Consumer and Personal Finance	22210																						X	X					X								
Culinary Essentials	16052																						X			X	X		X								
Data Systems/Processing	10054																		X		X																
Database Applications	10053																		X		X																
Digital Electronics	21008										X			X																							
Drafting	21102											X																					X				

PATHWAY CLASSIFICATION OF INSTRUCTIONAL PROGRAM AND CIP CODE

Cluster groupings across the column headers:
- **Agriculture, Food and Natural Resources** (columns: Agribusiness Systems 01.0101 – Power, Strctural and Tech. Systems 01.0201)
- **Architecture and Construction • Engineering • Transportation, Distribution and Logistics** (Aviation Production 15.0000 – Mobile Equipment Maintenance 47.9999)
- **Arts, A/V Technology and Communications • Information Technology** (Digital Media 09.0702 – Web and Digital Communications 11.1004)
- **Business Management and Administration • Finance • Marketing** (Business Mgmnt and Entrepreneurship 52.0799 – Marketing 52.1402)
- **Education and Training • Hospitality and Tourism • Human Services** (Restaurant and Event Management 12.0504 – F.A.I.D. 19.0999)
- **Government and Public Administration • Law, Public Safety, Corrections and Security** (Corrections, Security, Law and Law Enforcement 43.0199 – Teaching/Training 13.0101)
- **Health and Bio Sciences** (BioChemistry/Green/Hazmat 14.1401 – Health Science 51.9999)

COURSE TITLES	SCED	Agribusiness Systems 01.0101	Comp. Agriculture Science 01.9999	Animal Science 01.0901	Biotechnology in Agriculture 23.1201	Food Prod. and Proc. Systems 01.0401	Natural Res. and Env. Systems 03.0101	Plant Systems 01.1101	Power, Strctural and Tech. Systems 01.0201	Aviation Production 15.0000	Aviation Maintenance 47.0000	Construction and Design 46.0000	Energy 17.2071	Engineering and Appl. Math 14.0101	Manufacturing 48.0000	Mobile Equipment Maintenance 47.9999	Digital Media 09.0702	Info. Support and Services 11.0301	Network Systems 11.0901	Programming and Software Dev. 11.0201	Graphic Design 50.0499	Web and Digital Communications 11.1004	Business Mgmnt and Entrepreneurship 52.0799	Business Finance 52.0801	Marketing 52.1402	Restaurant and Event Management 12.0504	Travel and Tourism 52.0901	Early Childhood Develop. 19.0709	Family, Consumer and Community Srv. 19.0799	F.A.I.D. 19.0999	Corrections, Security, Law and Law Enforcement 43.0199	Emergency and Fire Mgmnt 43.0299	Government and Public Admin. 44.0401	Teaching/Training 13.0101	BioChemistry/Green/Hazmat 14.1401	BioMedical 14.0501	Health Science 51.9999
Drafting/CAD	21107											X		X	X								X														
Educational Trainer	10260																	X															X				
Electrical and Security Systems	17113											X			X																						
Emergency Medical Tech. (EMT)	44060																															X					X
Emerging Technologies	21053												X	X																					X	X	
Engineering Appl.	21002/71002																																		X	X	
Engineering Design and Development	21007													X									X														
Engineering Tech	21003/71003																																		X	X	
Entrepreneurship	12053																					X	X	X	X	X	X										
Envir. Res and Wildlife Science	37506						X																												X		
Event Planning and Management	34052																						X	X													
Exploratory Agric.	68001	X	X	X	X	X	X	X	X																												
Family Studies	22208																											X	X					X			
First Aid/CPR/EMR	44050																									X	X										X
Food Science	22203				X																					X										X	
Forensic Science	44224																														X						
Forensic Science (Comprehensive)	44225																														X						
Forensic Science II	44226																														X						
Foundation to Early Childhood Development	19052																						X					X									

PATHWAY CLASSIFICATION OF INSTRUCTIONAL PROGRAM AND CIP CODE

COURSE TITLES	SCED	Agribusiness Systems 01.0101	Comp. Agriculture Science 01.9999	Animal Science 01.0901	Biotechnology in Agriculture 23.1201	Food Prod. and Proc. Systems 01.0401	Natural Res. and Env. Systems 03.0101	Plant Systems 01.1101	Power, Strctural and Tech. Systems 01.0201	Aviation Production 15.0000	Aviation Maintenance 47.0000	Construction and Design 46.0000	Energy 17.2071	Engineering and Appl. Math 14.0101	Manufacturing 48.0000	Mobile Equipment Maintenance 47.9999	Digital Media 09.0702	Info. Support and Services 11.0301	Network Systems 11.0901	Programming and Software Dev. 11.0201	Graphic Design 50.0499	Web and Digital Communications 11.1004	Business Mgmnt and Entrepreneurship 52.0799	Business Finance 52.0801	Marketing 52.1402	Restaurant and Event Management 12.0504	Travel and Tourism 52.0901	Early Childhood Develop. 19.0709	Family, Consumer and Community Srv. 19.0799	F.A.I.D. 19.0999	Corrections, Security, Law and Law Enforcement 43.0199	Emergency and Fire Mgmnt 43.0299	Government and Public Admin. 44.0401	Teaching/Training 13.0101	BioChemistry/Green/Hazmat 14.1401	BioMedical 14.0501	Health Science 51.9999
Foundations In Law	44305																														X		X				
Foundations of Electronics	21201										X			X																							
Foundations of Travel and Tourism	34152																									X	X										
Graphic Design	05162/11154																X			X	X			X													
Graphic Design Fundamentals	30102																X			X																	
Hand and Power Tools	40400									X	X																										
Hazardous Materials for the First Responder	44070																														X	X					
Horticulture	18052		X		X	X		X																													
Human Body Systems	14102																																		X	X	X
Human Growth and Dev. A	45004																											X	X				X	X			
Human Growth and Dev. B	45014																											X	X					X			
HVAC Technology	17056											X	X		X																						
Hydraulics and Pneumatics	39302											X			X																						
Internet Marketing	12162																						X	X													
Internship	18048	X	X	X	X	X	X	X	X																												
Intro to Ag./Intro to Agriscience	18001	X	X	X	X	X	X	X	X																												
Intro to Family and Consumer Science	45001																									X	X	X	X	X				X			
Intro to Ind. Tech.	38001									X	X	X		X	X																						
Intro to LPSS	44001																														X	X					

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IT Essentials: PC Hardware and Software	10254																	X	X																		
Leadership Service in Action	22255																											X	X								
LPSS Internship	44298																														X	X					
Mass Production I	13052									X					X																						
Media and Public Relations	43115																X																X				
Medical Intervention	14105																																			X	X
Natural Resource Mgmt	18504		X				X																														
Nutrition and Wellness	08057																									X	X		X								X
Pharmacology	14253																																		X	X	X
Photo Imaging	30105																X				X																
Plant and Soil Science	18058		X	X	X		X																														
Plumbing Technology	17058											X			X																						
Practical law	44300																														X		X				
Prin. Of Biomedical Science	14251																																			X	X
Prin. Of Marketing	12164																						X		X												
Production Blueprint Reading	21108									X	X			X	X																						
Prod. Welding I	39207											X			X								X														
Prod. Welding II	39208											X			X																						
Public Safety Physical Education	44020																														X	X					

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Public Safety Telecommunicator	44220																														X	X					
Remodel and Bldg. Maintenance	17009											X			X								X														
Research in Agric.	18206	X	X	X	X	X	X	X	X																												
Residential Carpentry I	17002											X											X														
Residential Interior Design	22212											X																	X								
Robotics	21009													X																						X	
Sheet Metal	13205											X			X																						
Sheet Metal and HVACR	38012											X			X																						
Skilled Mechanical Crafts	17062											X			X																						
Web Page Design	10201																		X		X	X	X														
Woodworking Principles	17007											X											X														
Workplace Experience	21048									X	X			X																				X			
Workplace Exp. In Engineering	41048									X	X			X																							
Youth Court	44310																														X		X				

For more information, contact:

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