

Arkansas Department of Higher Education

The Carl D. Perkins Career and Technical Education Improvement Act of 2006

**Guidelines for Submission of
2007-08 Local Transition and Annual Plan**

Due: June 15, 2007

www.adheperkins.com

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INTRODUCTION

Purpose of the Guide

This guide has been prepared to assist local recipients in preparing the 2007-2008 Transition Plan required under the newly authorized Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV). The framework for the guide is based on requirements in the Act and the renewed vision of career and technical education programs expressed therein. This vision supports rigorous CTE programs that prepare students for today's competitive workforce, envisions that all students will achieve challenging academic and technical standards, and be prepared for high skill, high wage, and high demand occupations in current or emerging professions. The Act provides an increased focus on the academic achievement of CTE students, improves state and local accountability, and strengthens the connections between secondary and postsecondary education.

Part A-Transition Plan Narrative is a description of how the local recipient will address the major elements of PIV during the transition year. These elements are specified in the law.

Part B-Annual Plan of Activities details individual activities to be funded during the transition year including expenditure details for each proposed activity. Activities can be approached from the four different options below and described in detail beginning on page 7 of this guide.

- Those that target individual performance indicators (option used under PIII).
- Those that target specific programs of study which meet the definitions of high skill, high wage, and high demand programs (new option).
- Those that will affect all performance indicators rather than one indicator (new option).
- Those which are necessary to adequately prepare for Program Year 2008-09 when accountability for performance measures begins (new option).

Part C-Appendices which provide additional background on issues relevant to Perkins IV implementation.

Submission of the Plan

For the transition year, local recipients will submit a combined transition plan and annual plan as outlined on the following pages. It is intended that the web-based Perkins Accountability Portal (www.XXXX.XXXX) will be active by the time transition plans are to be submitted. In the meantime, this guide indicate the scope of information required and help organize information for eventual online submission.

PART A: LOCAL TRANSITION PLAN NARRATIVE

Local recipients (individual institutions and consortia) will be required to submit a one-year transition plan for Program Year 2007-2008. The transition plan must include how the recipient will either address the required elements of the transition plan or the process that will be used to address the required elements during Year I of Perkins IV. The 2007-08 Local Transition Plan is due June 15, 2007 and must be approved by state staff before expenditure of funds can be made. Any funds expended prior to approval will be ineligible for Perkins funding.

1. Description of Local Recipient

- **Institution Name**
- **President or Chancellor Name/Email**
- **Chief Financial Officer Name/Email**
- **Perkins Coordinator Name/Email/Phone**
- **Name and Address where reimbursement funds are to be mailed**

2. Description of Consortium

Title I Section 132 requires that local allocations be based upon the number of Federal Pell Grant recipients and recipients of assistance from the Bureau of Indian Affairs who are enrolled in CTE programs. In order to receive funding, a local recipient must receive no less than \$50,000 or join a consortium with the total of all individual allocations exceeding \$50,000.

- **Institution Name of Fiscal Agent**
- **President or Chancellor Name/Email of Fiscal Agent Institution**
- **Chief Financial Officer Name/Email of Fiscal Agent Institution**
- **Perkins Coordinator Name/Email/Phone for each consortium member**

3. Describe the process used to develop the local transition plan. Identify members of the team that contributed to development of the plan. The team should include representation from all institutional departments that affect student performance including academics, support services, and financial aid. The team should also include representation from departments responsible for collecting and reporting data required by Perkins.

4. Describe how career and technical education programs will be carried out using activities designated as required and permissive use of funds. The local transition plan must describe how the recipient will address the required uses of funds whether by use of Perkins funds or non-Perkins funds. The institution must use Perkins funds to address these areas or indicate how other institutional funds will be used to do so. The recipient must address all required uses of funds before using funds for activities designated as a permissive. You are not required to describe activities for permissive use of funds unless Perkins funds will be used for these purposes. (See Appendix A for list of required and permissive uses.)

5. Describe how CTE activities will be carried out in order to meet state and local levels of performance.

(See Appendix B for description of accountability measures.)

- a) 1P1-Technical Skill Attainment
- b) 2P1-Credential Attainment
- c) 3P1-Student Retention and Transfer
- d) 4P1-Student Placement
- e) 5P1-Nontraditional Participation
- f) 5P2-Nontraditional Credential Attainment

- 6. Describe how the institution will offer the appropriate courses of not less than one of the CTE programs of study. Identify and describe any existing secondary to postsecondary linkages and how Perkins funds will be used to improve or expand such programs.** For the purposes of Perkins funding, a program of study must include both secondary and postsecondary elements that are coordinated, non-duplicative and aligned. Institutions are also encouraged extend the program of study to include baccalaureate or above level elements. If an existing Career Pathways Initiative program is used to fulfill the requirements of this portion of the law, the program must include secondary elements and meet all of the requirements stated in the law.
- 7. Describe how academic and technical coursework will be integrated to strengthen the academic and technical skills of students participating in CTE programs and how CTE students will be taught to the same standards as other students.** The description must demonstrate how academic and technical coursework will be integrated; how CTE coursework content will be coherent, rigorous and aligned with challenging academic standards and relevant technical education programs to ensure learning in both core academic coursework and technical coursework.
- 8. Describe how activities will provide students with strong experience in and an understanding of all aspects of an industry.** Describe any opportunities for work-based learning experiences, mentoring or internships for both faculty and students.
- 9. Describe how comprehensive professional development for CTE, academic, guidance and administrative personnel will be provided.** Professional development funded by Perkins should be high quality, sustained, intensive and focused on improving the quality of instruction. It may include initial faculty preparation and activities that support faculty recruitment from industry. It should promote the integration of coherent and rigorous content aligned with challenging academic standards and relevant CTE coursework (including curriculum development); increase instructor understanding of industry standards; encourage applied learning, provide knowledge and skills needed to work with and improve instruction for special populations, or increase the use of data to analyze achievement gaps. Professional development must be broader than just teaching faculty.
- 10. Describe how a variety of stakeholders are involved in the development, implementation and evaluation of CTE programs, and how such individuals and entities are informed about, and assisted in understanding the requirements of Perkins, including CTE programs of study.** Stakeholders include parents, students, academic and CTE faculty, administrators, counselors and advisors, business and industry including small business, labor, and special populations.
- 11. Provide assurances that the recipient will provide CTE programs that are of such size, scope and quality as to bring about improvement in the quality of CTE programs.** Consideration should be given to the CIP codes containing the largest number of Perkins concentrators and to activities that are substantial enough to significantly impact performance results.
- 12. Describe the process that will be used to evaluate and continuously improve performance of CTE programs.**
- 13. Describe how the institution will address the needs of special populations enrolled in CTE programs.** Special populations include individuals with disabilities, individuals from economically disadvantaged families (including foster children), individuals preparing for nontraditional fields, single parents (including single pregnant women), displaced homemakers, and individuals with limited English proficiency. The description must identify how the recipient will:
 - a) Review CTE programs, identify and adopt strategies to overcome barriers that result in lower access or reduced success for special populations.
 - b) Provide programs that enable special populations to meet local performance levels.

- c) Provide activities to prepare special populations, including single parents and displaced homemakers, for high-skill, high-wage, and high-demand occupations that will lead to self-sufficiency. (See Appendix C for targeted pathways.)
- d) Ensure that individuals who are members of special populations will not be discriminated against on the basis of their status as members of special populations.

14. Describe how funds will be used to promote preparation for nontraditional fields. (See Appendix D for nontraditional fields.)

15. Describe how career guidance and academic counseling will be provided to CTE students, including linkages to baccalaureate and above education or other training opportunities.

16. Describe efforts to improve the recruitment and retention of CTE teachers, faculty, and guidance and academic counselors, including under-represented groups, and the transition to teaching from business and industry.

17. Describe how funds will be distributed among consortium members, if appropriate. In order for a consortium to receive assistance, the consortium shall operate joint programs that provide services to all postsecondary institutions participating in the consortium and are of sufficient size, scope, and quality as to be effective. Funds allocated to a consortium shall be used only for purposes and programs that are mutually beneficial to all members of the consortium. Such funds may not be reallocated to individual members of the consortium for programs benefiting only one member of the consortium. Once funds are allocated to a consortium, the funds are to be used for the consortium as a whole and are not to be distributed to individual members based upon Pell count. While the state will continue to provide individual performance results for each consortium member, the consortium will negotiate performance measures as a single entity and will be held accountable for results collectively rather than individually.

18. Describe how the local recipient will report data that is complete, accurate, and reliable. See Appendix B for Perkins definitions and measurement methods. The local recipient must demonstrate how data collected will be complete, valid, and reliable. Data must be complete in that all required elements are submitted. It must be valid in that measurement methods actually measure what is required to be measured. It must be reliable in that data is reported in the same manner every year and the same way across all participating institutions. Particular attention must be given to identifying and reporting performance of members of special populations so that data can be disaggregated and analyzed for improved performance of these sub-groups.

PART B: ANNUAL PLAN OF ACTIVITIES

Part B-Annual Plan of Activities details individual activities to be carried out during the transition year, including expenditure details for each proposed activity. The annual plan can include a combination of any or all of the following four approaches.

Activities That Target Individual Indicators

This is the approach that was used under Perkins III and will likely be the most common approach for postsecondary institutions under PIV. Achieving performance targets is of paramount importance since failure in this area will force the institution into an improvement plan for each performance target that is deficient.

Activities That Affect All Performance Indicators

There are certain activities that affect multiple indicators—professional development, evaluation of CTE programs, integration of career and technical education, special population gap analysis. This option will allow the institution to fund activities that are broader than one indicator but, if used, it must be understood that these activities should be of such size and scope as to be effective across all areas measured by Perkins.

Activities That Target Specific Programs Of Study

A key element of PIV is the seamless transition from secondary to postsecondary through programs of study. These programs incorporate secondary and postsecondary elements, include coherent and rigorous content aligned with challenging academic and relevant technical content in a coordinated, non-duplicated progression of courses, and prepare the secondary student to succeed at the postsecondary level. This approach includes activities related to curriculum alignment, articulation agreements, concurrent enrollment and other methods whereby the student can acquire college credit prior to college enrollment.

In developing a program of study, it may be necessary to develop new certificate or degree programs. For example, a local high school may have an e-Commerce program of study which the local college doesn't offer. In this case, approval of funding for a new CIP could be approved if the CIP has been identified as high skill, high wage, and high demand or identified as an emerging field. (See Appendix C for additional details related to these targeted areas.) Individual courses that are needed in order to enhance an existing program of study will be considered without the high skill, high wage, high demand requirements. For example, there may be existing articulation agreements that, with the additional of additional coursework, could be developed into a Perkins approved program of study.

Caution should be used when considering this approach. Because the institution is still responsible for performance measures, program of study approaches should incorporate several elements of Perkins required uses of funds so that all performance indicators will be affected.

Activities That Will Prepare The Institution For Program Year 2008-09

After reviewing the requirements of Perkins IV, the institution may find areas where improvements are needed in order to meet performance measures. For example, if the institution has no data on the performance of special populations or on nontraditional students, an activity could be funded that would provide an analysis of performance gaps. The institution could also fund an activity that would increase the data collection process in order to assure complete, valid and reliable data. The transition year offers a one-time opportunity to PREPARE for upcoming years when performance will be measured.

Annual Plan Forms

It is expected that annual plans will be submitted online but a description of the type of information required can be found in Appendix D.

APPENDIX A: REQUIRED AND PERMISSIVE USE OF PERKINS FUNDS

Required Uses of Funds

- (1) Strengthen academic and technical skills of students participating in CTE programs through the **integration of academics with CTE programs**.
- (2) **Link secondary and postsecondary** levels, including not less than **1 CTE program of study** containing both secondary and postsecondary elements that are coordinated, non-duplicative and aligned.
- (3) Provide students with strong **experience and understanding of all aspects of an industry**, which may include **work-based learning** experiences.
- (4) Develop, improve, or expand the use of **technology** in CTE which may include:
 - **training** of career and technical education teachers, faculty, and administrators to use technology, and which may include distance learning.
 - providing career and technical education students with the academic and career and technical skills (including the mathematics and science knowledge that provide a strong basis for such skills) that lead to **entry into the technology fields**.
 - encouraging schools to **collaborate with technology industries** to offer voluntary internships and mentoring programs, including programs that improve the mathematics and science knowledge of students.
- (5) Provide in-service and pre-service **professional development** programs to faculty, administrators, and career guidance and academic counselors who are involved in integrated career and technical education programs, on topics including:
 - effective **integration** of academics and CTE.
 - **effective teaching skills** based on research.
 - effective practices to improve parental and **community involvement**.
 - effective use of **scientifically based research** and data to **improve instruction**.Professional development should:
 - ensure that teachers and personnel **stay current with all aspects of an industry**.
 - involve **internship programs** that provide relevant business experience.
 - **train teachers** specifically in the effective use and application of **technology to improve instruction**.
- (6) Develop and implement **evaluations of the CTE programs** carried out with PIV funds, including an assessment of how the needs of special populations are being met.
- (7) **Initiate, improve, expand, and modernize** CTE programs, including relevant technology.
- (8) Provide services and activities that are of **sufficient size, scope, and quality** to be effective.
- (9) Provide activities to prepare **special populations**, including single parents and displaced homemakers who are enrolled in CTE programs for **high skill, high wage, and high demand occupations** that will lead to self-sufficiency.

Permissive Uses of Funds

- (1) **Involve stakeholders** (parents, businesses and labor organizations) in the design, implementation and evaluation of CTE programs.
- (2) Provide **career guidance and counseling** to postsecondary CTE students.
- (3) Create **business-education partnerships**, including work-related experiences for students, adjunct faculty arrangements for qualified industry professionals and industry experience for faculty.
- (4) Provide programs for **special populations**.
- (5) Assist **CTE student organizations**.
- (6) Provide **mentoring and support** services.
- (7) Leasing, purchasing, upgrading or adapting **equipment** including **instructional aids** and **publications** (including for library resources) designed to strengthen and support academic and technical skill attainment.
- (8) **Teacher preparation** programs that address the integration of academic and CTE and that assist individuals who are interested in becoming CTE faculty, including individuals with experience in business and industry.
- (9) **Developing and expanding postsecondary program offerings** at times and in formats that are accessible for all students, including through the use of distance education.
- (10) Developing initiatives that facilitate the **transition of sub-baccalaureate CTE students into baccalaureate degree programs**, including **articulation** agreements, **dual** and **concurrent** enrollment programs, academic and financial aid **counseling** and other initiatives to overcome barriers and encourage enrollment and completion.
- (11) Provide activities to support **entrepreneurship** education and training.
- (12) Improving or developing **new CTE courses**, including the development of programs of study and courses that prepare individuals academically and technically for high-skill, high-wage and high-demand occupations and dual or concurrent enrollment opportunities.
- (13) Developing and supporting small personalized career-themed **learning communities**.
- (14) Providing support for **family and consumer science** programs.
- (15) Provide CTE programs for **adults and school dropouts** to complete secondary education or to upgrade technical skills.
- (16) Provide assistance to students who have participated in Perkins-funded services and activities in **continuing their education or training or in finding an appropriate job**.
- (17) Support **nontraditional** training and employment activities such as mentoring and outreach.
- (18) Provide support for training programs in **automotive technologies**.
- (19) **Pooling** a portion of Perkins postsecondary funds with a portion of funds available to other recipients for innovative initiatives.
- (20) Support **other CTE activities** that support the purposes of the Act.

APPENDIX B: ACCOUNTABILITY

Performance Measures

- No performance measures will be required during the 2007-08 transition year. Baselines and measurement systems which will provide for complete, valid and reliable data are to be designed during the transition year for use in Year 1/PY 2008-09.
- Definitions for all core indicators of performance (below) were provided by the U.S. Department of Education and are included in the state's transition plan. All local plans will be based on these definitions.
- Institutions must submit an annual performance report with data disaggregated for each indicator of special populations. Institutions must identify and quantify gaps in performance between various sub-groups of students.
- Only Perkins Concentrators are measured and should therefore be the major focus of Perkins expenditures. Concentrators are defined as:
 - A student enrolled in and completed at least 12 credit hours in a program of study comprised of more than 12 credits and which terminates in an industry-recognized credential, certificate or degree.
 - A student that enrolled in and completed a short-term program of less than 12 hours which terminates in an industry recognized credential, certificate or degree.

Negotiation of Performance Measure Targets

- The State will negotiate performance levels with the U.S. Department of Education prior to the first, third and fifth years of the State Plan.
- Locals must accept the state negotiated levels or negotiate a different level with the State. It is expected that all recipients will achieve the state targets by Program Year 2012-2013, the final year of PIV. To achieve this, negotiation models will be established as follows for each of the six performance indicators:
 - For recipients performing below the state goal, the recipient must determine the difference in their baseline performance level and the state goal for 2012-13. The difference will be divided by the number of years that the recipient will receive PIV funds (5 years). This number will be the amount of improvement required annually. There is some margin for flexibility but each local must closely mirror the targets to which the state is obligated.
 - For recipients already performing above the state goal, a higher target must be negotiated to satisfy "continuous improvement" requirements. The minimum level of improvement will be 1/10th of 1%.
- Revisions to negotiated performance goals can be requested as a result of unexpected circumstances such as natural disasters or other unforeseen events experienced by the institution. These revisions will be rare and will require substantial justification.

Improvement Plans

- If the institution fails to meet at least 90% of the performance target for any indicator, it will have to develop and implement an improvement plan, with special consideration for performance gaps between special population subgroups.
- The improvement plan must be developed and implemented during the first program year after the year the performance level was not met.
- The State may, after an opportunity for a hearing, withhold all or part of an institution's funding if the institution:
 - Fails to implement the required improvement plan.
 - Makes no improvement within one year of implementing the improvement plan.
 - Fails to meet at least 90% of a performance level for the same performance indicator three years in a row.
- If the State withholds funds from a local program, it must use those funds to provide, through alternative arrangements, services and activities to students within the area served by the local program. Alternate arrangements must be provided by the state agency or another eligible recipient.

Sanctions Schedule

The following guidelines for improvement plans will be used to develop an improvement plan for each indicator with deficient results. In summary,

- IP Year 1: State staff will prescribe uses of funds.
- IP Year 2: State may withhold administrative funds.
- IP Year 3: State staff may recommend that some or all of basic grant funds are to be redirected to an alternate provider.
- IP Year 4: State will recommend that all basic funds be redirected to an alternate provider or that the institution be released from improvement plan status because targets have been met.

Recommendations for sanctions will be made by state staff to the ADHE associate director for academic affairs who will inform the chief academic officer of the affected institution. Guidelines to determine amounts to be withheld will be determined in consultation with chief academic officers of institutions during the transition year concurrent with negotiation of performance measures for Program Years 1 and 2. Guidelines will provide for the release from an improvement plan at such time as the institution meets performance targets.

Program Year 1 (2008-09):

Institution fails to achieve 90% of an indicator and is notified by the state that an improvement plan must be implemented during Program Year 2 (2009-10). This may result in revisions to the annual plan approved for Program Year 2. Because results for Program Year 1 will be known as early as mid-September 2009, sufficient time will be available to fully implement an improvement plan for Program Year 2, the program year immediately following the year for which performance was deficient.

Program Year 2/Improvement Plan Year 1 (2009-10):

State staff will work with local coordinators to have an improvement plan approved for implementation no later than second semester of Program Year 2. State staff will prescribe uses of basic grant funds as the improvement plan is developed with special consideration for performance gaps of members of special populations. State staff will monitor progress and provide technical assistance as needed to assure that the improvement plan is fully implemented during Improvement Plan Year 1.

Program Year 3/Improvement Plan Year 2 (2010-11):

State staff will review performance results from Improvement Plan Year 1 to determine level of improvement. If PY 3 performance has not improved over Program Year 2 performance results, staff may recommend the withholding of the institution's administrative funds beginning with Program Year 3/Improvement Plan Year 2 and continuing until the institution is no longer required to operate under an improvement plan or until sanctions have been removed.

Program Year 4/Improvement Plan Year 3 (2011-12):

If results from Program Year 3 show no positive improvement, state staff may recommend that some or all of basic grant funds be redirected to an alternate provider with the capacity and expertise to provide services to the failing institution's CTE students.

Program Year 5/Improvement Plan Year 4 (2012-13):

If results from Program Year 4 show insufficient improvement or if the institution has failed to meet 90% of the same performance target for 3 consecutive years, state staff will recommend sanctioning actions to redirect all Perkins funds to an alternate provider.

DEFINITIONS

Postsecondary Participant: Postsecondary student who has earned 1 or more credits in any CTE program area.

Postsecondary Concentrator: Student who (1) completes at least 12 academic or CTE credits within a single program area sequence that is comprised of 12 or more academic and technical credits and terminates in the award of an industry-recognized credential, a certificate, or a degree; or (2) completes a short-term CTE program sequence of less than 12 credit units that terminates in an industry-recognized credential, certificate or degree.

Postsecondary Completer: Not defined in PIV Law

IPI: TECHNICAL ATTAINMENT

Definition: Student achievement of challenging CTE skill proficiencies, including student achievement on third-party technical assessments that are aligned with industry recognized standards.

Numerator: Number of CTE concentrators who passed technical skill assessments that are aligned with industry-recognized standards during the reporting year.

Denominator: Number of CTE concentrators who took technical skill assessments during the reporting year.

Performance Targets: (State Goal by PYE 2013: XX%)	Baseline	Transition	Year 1	Year 2	Year 3	Year 4	Year 5
	PYE 2006	PYE 2008	PYE 2009	PYE 2010	PYE 2011	PYE 2012	PYE 2013
		NA					

2PI: CREDENTIAL ATTAINMENT

Definition: Student attainment of an industry-recognized credential, certificate, or degree.

Numerator: Number of CTE concentrators who received an industry-recognized credential, a certificate, or a degree during the reporting year.

Denominator: Number of CTE concentrators who left postsecondary education during the reporting year.

Performance Targets: (State Goal by PYE 2013: XX%)	Baseline	Transition	Year 1	Year 2	Year 3	Year 4	Year 5
	PYE 2006	PYE 2008	PYE 2009	PYE 2010	PYE 2011	PYE 2012	PYE 2013
		NA					

3PI: STUDENT RETENTION/TRANSFER

Definition: Student retention in postsecondary education or transfer to a baccalaureate degree program.

Numerator: Number of CTE concentrators who remained enrolled in their original postsecondary institution or transferred to another 2- or 4-year postsecondary institution during the reporting year and who were enrolled in postsecondary education in the fall of the previous reporting year.

Denominator: Number of CTE concentrators who were enrolled in postsecondary education in the fall of the previous reporting year and who did not earn an industry-recognized credential, certificate or a degree in the previous reporting year.

Performance Targets: (State Goal by PYE 2013: XX%)	Baseline	Transition	Year 1	Year 2	Year 3	Year 4	Year 5
	PYE 2006	PYE 2008	PYE 2009	PYE 2010	PYE 2011	PYE 2012	PYE 2013
		NA					

4PI: STUDENT PLACEMENT

Definition: Student placement in military service or apprenticeship program or placement or retention in employment, including placement in high skill, high wage, or high demand occupations or professions.

Numerator: Number of CTE concentrators who were placed or retained in employment, or placed in military service or apprenticeship programs in the 2nd quarter following the program year in which they left postsecondary education (i.e., unduplicated placement status for CTE concentrators who graduated June 20, 2007 would be assessed between October 1, 2007 and December 31, 2007).

Denominator: Number of CTE concentrators who left postsecondary education during the reporting year.

Performance Targets: (State Goal by PYE 2013: XX%)	Baseline	Transition	Year 1	Year 2	Year 3	Year 4	Year 5
	PYE 2006	PYE 2008	PYE 2009	PYE 2010	PYE 2011	PYE 2012	PYE 2013
		NA					

5P1: NONTRADITIONAL PARTICIPATION

Definition: Student participation in CTE programs that lead to employment in nontraditional fields.

Numerator: Number of CTE participants from underrepresented gender groups who participated in a program that leads to employment in nontraditional fields during the reporting year.

Denominator: Number of CTE participants who participated in a program that leads to employment in nontraditional fields during the reporting year.

Performance Targets: (State Goal by PYE 2013: XX%)	Baseline	Transition	Year 1	Year 2	Year 3	Year 4	Year 5
	PYE 2006	PYE 2008	PYE 2009	PYE 2010	PYE 2011	PYE 2012	PYE 2013
		NA					

5P2: NONTRADITIONAL CREDENTIAL ATTAINMENT

Definition: Student completion of CTE programs that lead to employment in nontraditional fields.

Numerator: Number of CTE concentrators from underrepresented gender groups who completed a program that leads to employment in nontraditional fields during the reporting year.

Denominator: Number of CTE concentrators who completed a program that leads to employment in nontraditional fields during the reporting year.

Performance Targets: (State Goal by PYE 2013: XX%)	Baseline	Transition	Year 1	Year 2	Year 3	Year 4	Year 5
	PYE 2006	PYE 2008	PYE 2009	PYE 2010	PYE 2011	PYE 2012	PYE 2013
		NA					

APPENDIX C: HIGH SKILL/HIGH WAGE/HIGH DEMAND/EMERGING

Perkins IV has a strong focus on preparing CTE students for employment in careers that are in high demand, require high skills, and pay high wages. The U.S. Department of Education has designated 16 career clusters with 81 associated career pathways. Using the definitions noted below, Arkansas has identified 31 pathways that meet the requirements of all three definitions— high skill, high wage, and high demand.

ADWE is requiring that secondary schools focus Perkins funds on career pathways where 50% of the occupations within the pathway meet all three of the definitions. Because postsecondary organizes programs of study by CIP codes, a crosswalk of CIP codes to these pathways has been established and can be found in Appendix D.

PIV accountability will require that local recipients report performance measures as related to these targeted areas—placement in employment of all CTE concentrators as well as members of special populations.

High Wage: Defined as 20% above the average wage for all occupations in Arkansas. A high wage pathway is one with 50% or more of the individual occupations exceeding the high wage definition.

High Demand: Defined by the Department of Workforce Services and available at www.discoverarkansas.net. A high demand pathway is one with 50% or more of the individual occupations designated as high demand.

High Skill: Any program of study that leads to a baccalaureate or above degree. This definition will be reviewed during the transition year. (Secondary: Any pathway that leads to an AAS or apprenticeship program.)

Emerging Industries: To be defined during the transition year.

APPENDIX D: LOCAL APPLICATION REQUIREMENTS

SECTION 1: ASSURANCES AND CERTIFICATIONS

- Name and Address of Institution/Consortium
- If consortium, list all member institutions
- Local Coordinator Name and Contact Information
- Basic Grant Amount
- Signature of President, Chief Academic Officer, and Chief Financial Officer
- Statement of Assurances and Certifications

SECTION 2: OP1-ADMINISTRATIVE FUNDS

- How will administrative funds be used?
- Amount of basic grant allocated to administrative uses (not to exceed 5% of total grant).

SECTION 3: 1P1-TECHNICAL SKILLS ATTAINMENT CORE INDICATOR

Core Indicator Overview

- Current year local target
- Historical performance results for local and state (baseline plus cumulative for Perkins III years)
- Was actual performance results within 90% of core indicator target
- Description of status of improvement plan required for the indicator, including description of strategies required as a result of previous year's performance
- CIP codes of programs of study targeted for technical skills improvement
- Description of data used to determine core indicator need and to select activities that address the need

Activity Description (for each activity in support of the indicator)

- Activity number/name
- Number of years previously funded by Perkins
- If previously funded, summary of results from previous years
- Activity description
- How performance will be measured and the expected measurable outcome
- CIP code(s) of programs of study targeted by this activity
- Number of Perkins concentrators affected by this activity

Activity Budget

- Activity cost by budget category and function category (projected, amended, and actual)
- Required or permissive use of funds

SECTION 4: 2P1-CREDENTIAL ATTAINMENT CORE INDICATOR

SECTION 5: 3P1-STUDENT RETENTION CORE INDICATOR

SECTION 6: 4P1-STUDENT PLACEMENT CORE INDICATOR

SECTION 7: 5P1-NONTRADITIONAL PARTICIPATION CORE INDICATOR

SECTION 8: 5P2-NONTRADITIONAL CREDENTIAL ATTAINMENT CORE INDICATOR

SECTION 9: SPECIFIC PROGRAM OF STUDY PROJECT

- Career cluster
- Career pathway
- Program of study CIP
- Does this program of study meet high skill, high wage, and high demand designations or support emerging industries?
- If the program does not meet the required designations, regional data must be provided to document that the program meets the designations locally (exceptions will be rare).

Project Description (for each program of study)

- Activity number/name
- Number of years previously funded by Perkins
- If previously funded, summary of previous years' results
- Project description
 - Summary of project
 - Describe how academic and technical coursework will be integrated
 - Describe equipment/supplies to be purchased
 - Describe professional development required (CTE and academic faculty/administrators/staff)
 - Describe how special populations, include nontraditional students, will be affected
 - Describe how work-based learning will be integrated into the project
 - Number of Perkins concentrators affected by this activity
- List all core indicators that will be improved as a result of this project
- Description of data used to determine project need and to select activities that address the need
- How performance will be measured and the expected measurable outcome

Activity Budget

- Activity cost by budget category and function category (projected, amended, and actual)
- Required or permissive use of funds

SECTION 10: ACROSS ALL INDICATORS PROJECT

Project Description (for project)

- Activity number/name
- Number of years previously funded by Perkins
- If previously funded, summary of results from previous years
- Project description
 - Summary of project
 - Estimate of number of students, faculty, support staff, or administrators affected by this project
- List all core indicators that will be improved as a result of this project
- Description of data used to determine project need and to select activities that address the need
- How performance will be measured and the expected measurable outcome

Activity Budget

- Activity cost by budget category and function category (projected, amended, and actual)
- Required or permissive use of funds

SECTION 11: BUDGET SUMMARY

- Summary of all activities by budget category (original and amended)
- Reimbursement ledger
- Total basic grant allocation
- 5% maximum administration funds
- 25% first quarter maximum

APPENDIX E: CIP CODE CROSSWALK TO PERKINS TARGET AREAS

CC	PATH	CIP	CTE	ARK	FNT	MNT	HSWD	EMERG
1.0 Agriculture, Food and Natural Resource Cluster								
1.10000 Food Products and Processing Systems Pathway								
		01.0105 Agricultural/Farm Supplies Retailing and Wholesaling	x		x		x	
		01.0106 Agricultural Business Technology	x				x	
		01.0199 Agricultural Business and Management, Other	x		x		x	
		01.0401 Agricultural and Food Products Processing	x		x		x	
		01.1001 Food Science	x				x	
		01.1002 Food Technology and Processing	x				x	
		01.1099 Food Science and Technology, Other	x				x	
1.20000 Plant Systems Pathway								
		01.0000 Agriculture, General	x				x	
		01.0101 Agricultural Business and Management, General	x	x	x		x	
		01.0102 Agribusiness/Agricultural Business Operations	x		x		x	
		01.0103 Agricultural Economics	x				x	
		01.0104 Farm/Farm and Ranch Management	x		x		x	
		01.0301 Agricultural Production Operations, General	x	x	x		x	
		01.0303 Aquaculture	x				x	
		01.0304 Crop Production	x		x		x	
		01.0399 Agricultural Production Operations, Other	x		x		x	
		01.0601 Applied Horticulture/Horticultural Operations, General	x	x	x		x	
		01.0603 Ornamental Horticulture	x	x	x		x	
		01.0604 Greenhouse Operations and Management	x		x		x	
		010605 Landscaping and Groundskeeping	x	x	x		x	
		010606 Plant Nursery Operations and Management	x		x		x	
		010607 Turf and Turfgrass Management	x		x		x	
		010608 Floriculture/Floristry Operations and Management	x				x	
		010699 Applied Horticulture/Horticultural Business Services, Other	x		x		x	
		011101 Plant Sciences, General	x		x		x	
		011102 Agronomy and Crop Science	x		x		x	
		011103 Horticultural Science	x		x		x	
		011104 Agricultural and Horticultural Plant Breeding	x				x	
		011105 Plant Protection and Integrated Pest Management	x		x		x	
		011106 Range Science and Management	x		x		x	
		011199 Plant Sciences, Other	x				x	
		011201 Soil Science and Agronomy, General	x				x	
		011202 Soil Chemistry and Physics	x				x	
		011203 Soil Microbiology	x				x	
		011299 Soil Sciences, Other	x				x	
		019999 Agriculture, Agriculture Operations, & Related Sciences, Other	x	x			x	
1.30000 Animal Systems Pathway								
		010302 Animal/Livestock Husbandry and Production	x		x		x	
		010306 Dairy Husbandry and Production	x		x		x	
		010307 Horse Husbandry/Equine Science and Management	x		x		x	
		010504 Dog/Pet/Animal Grooming	x				x	
		010505 Animal Training	x				x	
		010507 Equestrian/Equine Studies	x				x	
		010508 Taxidermy/Taxidermist	x				x	
		010599 Agricultural and Domestic Animal Services, Other	x				x	
		010901 Animal Sciences, General	x		x		x	
		010902 Agricultural Animal Breeding	x		x		x	
		010903 Animal Health	x				x	
		010904 Animal Nutrition	x		x		x	
		010905 Dairy Science	x		x		x	
		010906 Livestock Management	x		x		x	
		010907 Poultry Science	x		x		x	

010999 Animal Sciences, Other	X		X
1.40000 Power Structure and Technical Systems Pathway			
010201 Agricultural Mechanization, General	X		X
010204 Agricultural Power Machinery Operation	X		X
010205 Agricultural Mechanics & Equipment/Machine Technology	X		X
010299 Agricultural Mechanization, Other	X		X
1.50000 Natural Resources Systems Pathway			
030101 Natural Resources/Conservation, General	X		
030103 Environmental Studies	X		X
030104 Environmental Science	X		X
030199 Natural Resources Conservation and Research, Other	X		
030201 Natural Resources Management and Policy	X		
030204 Natural Resource Economics	X		
030205 Water, Wetlands, and Marine Resources Management	X		
030206 Land Use Planning and Management/Development	X		
030299 Natural Resources Management and Policy, Other	X		
030301 Fishing and Fisheries Sciences and Management	X		
030501 Forestry, General	X		
030502 Forest Sciences and Biology	X		
030506 Forest Management/Forest Resources Management	X		
030508 Urban Forestry	X		
030509 Wood Science and Wood Products/Pulp and Paper Technology	X	X	
030510 Forest Resources Production and Management	X		X
030511 Forest Technology/Technician	X	X	
030599 Forestry, Other	X		
030601 Wildlife and Wildlands Science and Management	X		
039999 Natural Resources and Conservation, Other	X		
310101 Parks, Recreation and Leisure Studies	X	X	
310301 Parks, Recreation and Leisure Facilities Management	X		
319999 Parks, Recreation, Leisure and Fitness Studies, Other	X		
490303 Commercial Fishing	X		
490304 Diver, Professional and Instructor	X		
1.60000 Environmental Service Systems Pathway			
150506 Water Quality & Wastewater Treatment Management & Recycling Technology/Technician	X		X
150507 Environmental Engineering Technology/Environmental Technology	X	X	X
150508 Hazardous Materials Management & Waste Technology/Technician	X		
150599 Environmental Control Technologies/Technicians, Other	X		X
150704 Hazardous Materials Information Systems Technology/Technician	X		X
1.70000 Agribusiness Systems Pathway			
010701 International Agriculture	X		
010801 Agricultural and Extension Education Services	X		
010802 Agricultural Communication/Journalism	X		X
010899 Agricultural Public Services, Other	X		
2.0 Architecture and Construction Cluster			
2.10000 Design/Pre-Construction Pathway			
040201 Architecture (BArch, BA/BS, MArch, MA/MS, PhD)	X		X
040401 Environmental Design/Architecture	X		X
040501 Interior Architecture	X		X
040601 Landscape Architecture (BS, BSLA, BLA, MSLA, MLA, PhD)	X		X
040801 Architectural History and Criticism, General	X		X
040901 Architectural Technology/Technician	X		X
049999 Architecture and Related Services, Other	X		X
143801 Surveying Engineering	X		X

150101 Architectural Engineering Technology/Technician	x		
150201 Civil Engineering Technology/Technician	x		x
151102 Surveying Technology/Surveying	x	x	x
151301 Drafting and Design Technology/Technician, General	x	x	x
151302 CAD/CADD Drafting and/or Design Technology/Technician	x		x
151303 Architectural Drafting and Architectural CAD/CADD	x	x	x
151304 Civil Drafting and Civil Engineering CAD/CADD	x		x
151305 Electrical/Electronics Drafting & Electrical/Electronics CAD/CADD	x		x
151306 Mechanical Drafting and Mechanical Drafting CAD/CADD	x	x	x
151399 Drafting/Design Engineering Technologies/Technicians, Other	x		x
190601 Housing and Human Environments, General	x		
190699 Housing and Human Environments, Other	x		
2.20000 Construction Pathway			
151001 Construction Engineering Technology/Technician	x		x
150501 Heating, AC & Refrig Tech/Tech (ACH/ACR/ACHR/HRAC/HVAC)	x	x	x
150503 Energy Management and Systems Technology/Technician	x		x
150505 Solar Energy Technology/Technician	x		x
460000 Construction Trades, General	x		x
460101 Mason/Masonry	x		x
460201 Carpentry/Carpenter	x	x	x
460301 Electrical & Power Transmission Installation/Installer, General	x		x
460302 Electrician	x		x
460303 Lineworker	x		x
460399 Electrical and Power Transmission Installers, Other	x		x
460401 Building/Property Maintenance and Management	x		x
460402 Concrete Finishing/Concrete Finisher	x		x
460403 Building/Home/Construction Inspection/Inspector	x		x
460404 Drywall Installation/Drywaller	x		x
460406 Glazier	x		x
460408 Painting/Painter and Wall Coverer	x		x
460410 Roofer	x		x
460411 Metal Building Assembly/Assembler	x		x
460412 Building/Construction Site Management/Manager	x		x
460499 Building/Construction Finishing, Management, & Inspection, Other	x	x	x
460502 Pipefitting/Pipefitter and Sprinkler Fitter	x		x
460503 Plumbing Technology/Plumber	x		x
460504 Well Drilling/Driller	x		x
460505 Blasting/Blaster	x		x
460599 Plumbing and Related Water Supply Services, Other	x		x
469999 Construction Trades, Other	x	x	x
480509 Ironworking/Ironworker	x		x
480599 Precision Metal Working, Other	x		x
480801 Boilermaking/Boilermaker	x		x
490202 Construction/Heavy Equipment/Earthmoving Equipment Operation	x	x	x
490206 Mobil Crane Operation/Operator	x		x
49.0299 Vehicles and Equipment	x		x
522001 Construction Management	x		x
2.30000 Maintenance/Operations Pathway			
470110 Security System Installation, Repair, & Inspection Technology/Technician	x		x
470199 Electrical/Electronics Maintenance & Repair Technology, Other	x		x
47.0201 Heating, Air Conditioning, Ventilation & Refrigeration Maintenance	x		x
47.0302 Heavy Equipment Maintenance Technology/Technician	x		x
3.0 Arts, A/V Technology and Communication Cluster			
3.10000 Audio and Video Technologies Pathway			
100299 Audiovisual Communications Technologies/Technicians, Other	x		x
110803 Computer Graphics	x		

500401 Design and Visual Communications, General	X	
500605 Photography	X	
500699 Film/Video and Photographic Arts, Other	X	
500701 Art/Art Studies, General	X	
500702 Fine/Studio Arts, General	X	
500703 Art History, Criticism and Conservation	X	
500704 Arts Management	X	
500705 Drawing	X	
500706 Intermedia/Multimedia	X	
500708 Painting	X	
500709 Sculpture	X	
500710 Printmaking	X	
500711 Ceramic Arts and Ceramics	X	
500712 Fiber, Textile and Weaving Arts	X	
500713 Metal and Jewelry Arts	X	
500799 Fine Arts and Art Studies, Other	X	
	X	
3.20000 Printing Technologies Pathway	X	
100301 Graphic Communications, General	X	
100302 Printing Management	X	X
100303 Prepress/Desktop Publishing and Digital Imaging Design	X	
100304 Animation, Interactive Technology, Video Graphics & Special Effects	X	
100305 Graphic and Printing Equipment Operator, General Production	X	X
100306 Platemaker/Imager	X	X
100307 Printing Press Operator	X	X
100308 Computer Typography and Composition Equipment Operator	X	
100399 Graphic Communications, Other	X	X
3.30000 Visual Arts Pathway		
100201 Photographic and Film/Video Technology/Technician & Assistant	X	X
190605 Home Furnishings and Equipment Installers	X	
500101 Visual and Performing Arts, General	X	
500201 Crafts/Craft Design, Folk Art and Artisanry	X	
500402 Commercial and Advertising Art	X	X
500404 Industrial Design	X	
500406 Commercial Photography	X	
500407 Fashion/Apparel Design	X	
500408 Interior Design	X	
500409 Graphic Design	X	X
500410 Illustration	X	
500499 Design and Applied Arts, Other	X	
500605 Photography	X	
500699 Film/Video and Photographic Arts, Other	X	
3.40000 Performing Arts Pathway		
500301 Dance, General	X	
500302 Ballet	X	
500399 Dance, Other	X	
500501 Drama and Dramatics/Theatre Arts, General	X	
500502 Technical Theatre/Theatre Design and Technology	X	
500504 Playwriting and Screenwriting	X	
500505 Theatre Literature, History and Criticism	X	
500506 Acting	X	
500507 Directing and Theatrical Production	X	
500508 Theatre/Theatre Arts Management	X	
500599 Dramatic/Theatre Arts and Stagecraft, Other	X	
500601 Film/Cinema Studies	X	
500602 Cinematography and Film/Video Production	X	
500901 Music, General	X	

500902 Music History, Literature, and Theory	x			
500903 Music Performance, General	x			
500904 Music Theory and Composition	x			
500905 Musicology and Ethnomusicology	x			
500906 Conducting	x			
500907 Piano and Organ	x			
500908 Voice and Opera	x			
500909 Music Management and Merchandising	x			
500910 Jazz/Jazz Studies	x			
500911 Violin, Viola, Guitar and Other Stringed Instruments	x			
500912 Music Pedagogy	x			
500999 Music, Other	x			
509999 Visual and Performing Arts, Other	x			
3.50000 Journalism and Broadcasting Pathway				
090101 Communication Studies/Speech Communication and Rhetoric	x		x	
090102 Mass Communication/Media Studies	x			
090199 Communication and Media Studies, Other	x			
090401 Journalism	x			
090402 Broadcast Journalism	x		x	
090404 Photojournalism	x			
090499 Journalism, Other	x			
090701 Radio and Television	x		x	
090702 Digital Communication and Media/Multimedia	x			
090799 Radio, Television, and Digital Communication, Other	x			
091001 Publishing	x			
099999 Communication, Journalism, and Related Programs, Other	x			
100202 Radio and Television Broadcasting Technology/Technician	x	x	x	
100203 Recording Arts Technology/Technician	x		x	
3.60000 Telecommunications Technologies Pathway				
100105 Communications Technology/Technician	x		x	x
109999 Communications Technologies/Technicians & Support Services, Other	x			x
470103 Communications Systems Installation and Repair Technology	x		x	x
4.0 Business and Administration Cluster				
4.10000 Management Pathway				
090901 Organizational Communication, General	x			x
090902 Public Relations/Image Management	x			x
520101 Business/Commerce, General	x	x	x	x
520201 Business Administration and Management, General	x	x	x	x
520202 Purchasing, Procurement/Acquisitions & Contracts Management	x			x
520203 Logistics and Materials Management	x		x	x
520204 Office Management and Supervision	x	x		x
520205 Operations Management and Supervision	x	x	x	x
520207 Customer Service Management	x			x
520601 Business/Managerial Economics	x			x
520701 Entrepreneurship/Entrepreneurial Studies	x	x	x	x
520702 Franchising and Franchise Operations	x			x
520703 Small Business Administration/Management	x			x
520799 Entrepreneurial and Small Business Operations, Other	x			x
521101 International Business/Trade/Commerce	x		x	x
521301 Management Science, General	x			x
4.20000 Business Financial Management and Accounting Pathway				
301601 Accounting and Computer Science	x			x
520299 Business Administration, Management and Operations, Other	x	x		x
520301 Accounting	x	x		x
520302 Accounting Technology/Technician and Bookkeeping	x	x	x	x

520303 Auditing	X		X
520304 Accounting and Finance	X		X
520305 Accounting and Business/Management	X		X
520399 Accounting and Related Services, Other	X	X	X
4.30000 Human Resources Pathway			
420901 Industrial and Organizational Psychology	X		
521001 Human Resources Management/Personnel Administration, General	X		
521002 Labor and Industrial Relations	X		
521003 Organizational Behavior Studies	X		
521004 Labor Studies	X		
521005 Human Resources Development	X		
521099 Human Resources Management and Services, Other	X		
4.40000 Business Analysis Pathway			
521201 Management Information Systems, General	X	X	X
521206 Information Resources Management/CIO Training	X		X
521207 Knowledge Management	X		X
521299 Management Information Systems and Services, Other	X	X	X
521399 Management Sciences and Quantitative Methods, Other	X		X
4.50000 Marketing and Communications Pathway			
520501 Business/Corporate Communications	X		X
90903 Advertising	X		X
090999 Public Relations, Advertising & Applied Communication, Other	X		X
4.60000 Administrative and Information Support Pathway			
110601 Data Entry/Microcomputer Applications, General	X		X
110602 Word Processing	X		X
110699 Data Entry/Microcomputer Applications, Other	X		
520401 Administrative Assistant and Secretarial Science, General	X	X	X
520402 Executive Assistant/Executive Secretary	X		X
520406 Receptionist	X		X
520407 Business/Office Automation/Technology/Data Entry	X	X	X
520408 General Office Occupations and Clerical Services	X	X	X
520411 Customer Service Support/Call Center/Teleservice Operation	X		X
520499 Business Operations Support and Secretarial Services, Other	X	X	
5.0 Education and Training Cluster			
5.10000 Administration and Administrative Support Pathway			
130401 Educational Leadership and Administration, General	X		X
130402 Administration of Special Education	X		X
130403 Adult and Continuing Education Administration	X		X
130404 Educational, Instructional, and Curriculum Supervision	X		X
130406 Higher Education/Higher Education Administration	X		X
130407 Community College Education	X		X
130408 Elementary & Middle School Administration/Principalship	X		X
130409 Secondary School Administration/Principalship	X		X
130410 Urban Education and Leadership	X		X
130411 Superintendency and Educational System Administration	X		X
130499 Educational Administration and Supervision, Other	X		X
130501 Educational/Instructional Media Design	X	X	X
130601 Educational Evaluation and Research	X		X
130603 Educational Statistics and Research Methods	X		X
130604 Educational Assessment, Testing, and Measurement	X		X
130699 Educational Assessment, Evaluation, and Research, Other	X		X
130701 International and Comparative Education	X		X
130901 Social and Philosophical Foundations of Education	X		X

5.20000 Support Services Pathway			
131101	Counselor Education/School Counseling and Guidance Services	x	x
131102	College Student Counseling and Personnel Services	x	x
131199	Student Counseling and Personnel Services, Other	x	x
250101	Library Science/Librarianship	x	x
250301	Library Assistant/Technician	x	x
259999	Library Science, Other	x	x
5.30000 Teaching/Training Pathway			
130101	Education, General	x	x
130201	Bilingual and Multilingual Education	x	x
130202	Multicultural Education	x	x
130203	Indian/Native American Education	x	x
130299	Bilingual, Multilingual, a&Multicultural Education, Other	x	x
130301	Curriculum and Instruction	x	x
131001	Special Education and Teaching, General	x	x
131003	Education/Teaching of Individuals with Hearing Impairments	x	x
131004	Education/Teaching of the Gifted and Talented	x	x
131005	Education/Teaching of Individuals with Emotional Disturbances	x	x
131006	Education/Teaching of Individuals with Mental Retardation	x	x
131007	Education/Teaching of Individuals with Multiple Disabilities	x	x
131008	Education/Teaching of Individ w Orthopedic & Oth Physical Impairments	x	x
131009	Education/Teaching of Individuals with Vision Impairments	x	x
131011	Education/Teaching of Individuals with Specific Learning Disabilities	x	x
131012	Education/Teaching of Individuals with Speech or Language Impairments	x	x
131013	Education/Teaching of Individuals with Autism	x	x
131014	Education/Teaching of Individuals Who are Developmentally Delayed	x	x
131015	Education/Teaching of Individ in Early Childhood Spec Ed Programs	x	x
131016	Education/Teaching of Individuals with Traumatic Brain Injuries	x	x
131099	Special Education and Teaching, Other	x	x
131201	Adult and Continuing Education and Teaching	x	x
131202	Elementary Education and Teaching	x	x
131203	Junior High/Intermediate/Middle School Education & Teaching	x	x
131205	Secondary Education and Teaching	x	x
131206	Teacher Education, Multiple Levels	x	x
131207	Montessori Teacher Education	x	x
131208	Waldorf/Steiner Teacher Education	x	x
131209	Kindergarten/Preschool Education and Teaching	x	x
131210	Early Childhood Education and Teaching	x	x
131299	Teacher Education & Prof Dev, Specific Levels & Methods, Other	x	x
131301	Agricultural Teacher Education	x	x
131302	Art Teacher Education	x	x
131303	Business Teacher Education	x	x
131304	Driver and Safety Teacher Education	x	x
131305	English/Language Arts Teacher Education	x	x
131306	Foreign Language Teacher Education	x	x
131307	Health Teacher Education	x	x
131308	Family & Consumer Sciences/Home Economics Teacher Education	x	x
131309	Technology Teacher Education/Industrial Arts Teacher Education	x	x
131310	Sales & Marketing Operations/Marketing & Distribution Teacher Educ	x	x
131311	Mathematics Teacher Education	x	x
131312	Music Teacher Education	x	x
131314	Physical Education Teaching and Coaching	x	x
131315	Reading Teacher Education	x	x
131316	Science Teacher Education/General Science Teacher Education	x	x
131317	Social Science Teacher Education	x	x
131318	Social Studies Teacher Education	x	x
131319	Technical Teacher Education	x	x
131320	Trade and Industrial Teacher Education	x	x

131321 Computer Teacher Education	x			x
131322 Biology Teacher Education	x			x
131323 Chemistry Teacher Education	x			x
131324 Drama and Dance Teacher Education	x			x
131325 French Language Teacher Education	x			x
131326 German Language Teacher Education	x			x
131327 Health Occupations Teacher Education	x			x
131328 History Teacher Education	x			x
131329 Physics Teacher Education	x			x
131330 Spanish Language Teacher Education	x			x
131331 Speech Teacher Education	x			x
131332 Geography Teacher Education	x			x
131333 Latin Teacher Education	x			x
131334 School Librarian/School Library Media Specialist	x		x	x
131335 Psychology Teacher Education	x			x
131399 Teacher Education & Prof Devt, Specific Subject Areas, Other	x			x
131401 Teaching English as a Second or Foreign Language	x	x		x
131402 Teaching French as a Second or Foreign Language	x			x
131499 Teaching English or French as a Second or Foreign Language, Other	x			x
131501 Teacher Assistant/Aide	x		x	x
131502 Adult Literacy Tutor/Instructor	x			x
131599 Teaching Assistants/Aides, Other	x		x	x
139999 Education, Other	x			x
6.0 Finance and Insurance Cluster				
6.10000 Financial and Investment Planning Pathway	x			
520801 Finance, General	x	x		x
520804 Financial Planning and Services	x			x
520806 International Finance	x			x
520807 Investments and Securities	x			x
520808 Public Finance	x			x
520809 Credit Management	x			x
520899 Finance and Financial Management Services, Other	x			x
521908 Business & Personal/Financial Services Marketing Operations	x			x
6.20000 Business Financial Management Pathway				
521601 Taxation	x			x
6.30000 Banking and Related Services Pathway				
520803 Banking and Financial Support Services	x	x	x	x
6.40000 Insurance Services Pathway				
52.21701 Insurance	x			x
7.0 Government and Public Administration Cluster				
7.10000 Governance (Legislators & gen govt executives and staff) Career Pathway	x			
440401 Public Administration	x		x	
440501 Public Policy Analysis	x		x	
451001 Political Science and Government, General	x			
451002 American Government and Politics (United States)	x			
451099 Political Science and Government, Other	x			
7.20000 National Security Career Pathway				
290101 Military Technologies	x			
300501 Peace Studies and Conflict Resolution	x			
7.30000 Foreign Service Career Pathway				
450901 International Relations and Affairs	x			x

7.40000 Planning Career Pathway			
040301 City/Urban, Community and Regional Planning	x	x	
451201 Urban Studies/Affairs	x		
7.50000 Revenue and Taxation Career Pathway	x		x
7.60000 Regulation Career Pathway	x		x
7.70000 Public and Nonprofit Management and Administration Career Pathway			
520206 Non-Profit/Public/Organizational Management	x		x
8.0 Health Science Cluster			
8.10000 Therapeutic Services Pathway	x		
190501 Foods, Nutrition, and Wellness Studies, General	x		x
190504 Human Nutrition	x		x
190505 Foodservice Systems Administration/Management	x		x
190599 Foods, Nutrition, and Related Services, Other	x		x
310501 Health and Physical Education, General	x		
310504 Sport and Fitness Administration/Management	x		
310505 Kinesiology and Exercise Science	x		
310599 Health and Physical Education/Fitness, Other	x		
420101 Psychology, General	x		
420201 Clinical Psychology	x		
420801 Experimental Psychology	x		
421001 Personality Psychology	x		
421101 Physiological Psychology/Psychobiology	x		
422201 Geropsychology	x		
422301 Health/Medical Psychology	x		
422401 Psychopharmacology	x		
422501 Family Psychology	x		
422601 Forensic Psychology	x		
429999 Psychology, Other	x		
420301 Cognitive Psychology and Psycholinguistics	x		
510101 Chiropractic (DC)	x	x	
510201 Communication Disorders, General	x		x
510202 Audiology/Audiologist and Hearing Sciences	x	x	
510203 Speech-Language Pathology/Pathologist	x		x
510204 Audiology/Audiologist & Speech-Language Pathology/Pathologist	x		x
510299 Communication Disorders Sciences and Services, Other	x		x
510401 Dentistry (DDS, DMD)	x	x	
510501 Dental Clinical Sciences, General (MS, PhD)	x	x	
510502 Advanced General Dentistry (Cert, MS, PhD)	x	x	
510503 Oral Biology and Oral Pathology (MS, PhD)	x	x	
510504 Dental Public Health & Education (Cert, MS/MPH, PhD/DPH)	x	x	
510505 Dental Materials (MS, PhD)	x	x	
510506 Endodontics/Endodontology (Cert, MS, PhD)	x	x	
510507 Oral/Maxillofacial Surgery (Cert, MS, PhD)	x	x	
510508 Orthodontics/Orthodontology (Cert, MS, PhD)	x	x	
510509 Pediatric Dentistry/Pedodontics (Cert, MS, PhD)	x	x	
510510 Periodontics/Periodontology (Cert, MS, PhD)	x	x	
510511 Prosthodontics/Prosthodontology (Cert, MS, PhD)	x	x	
510599 Advanced/Graduate Dentistry and Oral Sciences, Other	x	x	
510601 Dental Assisting/Assistant	x	x	x
510602 Dental Hygiene/Hygienist	x	x	x
510603 Dental Laboratory Technology/Technician	x		
510699 Dental Services and Allied Professions, Other	x		
510801 Medical/Clinical Assistant	x	x	
510803 Occupational Therapist Assistant	x	x	
510805 Pharmacy Technician/Assistant	x		x

510806 Physical Therapist Assistant	x	x	x
510808 Veterinary/Animal Health Technology/Technician & Veterinary Assistant	x		x
510809 Anesthesiologist Assistant	x		x
510810 Emergency Care Attendant (EMT Ambulance)	x		
510908 Respiratory Care Therapy/Therapist	x	x	
510909 Surgical Technology/Technologist	x	x	x
510999 Allied Health Diagnostic, Intervention, & Treatment Professions, Other	x		
511001 Blood Bank Technology Specialist	x		
511011 Renal/Dialysis Technologist/Technician	x		
511101 Pre-Dentistry Studies	x		
511102 Pre-Medicine/Pre-Medical Studies	x		
511103 Pre-Pharmacy Studies	x		
511104 Pre-Veterinary Studies	x		
511105 Pre-Nursing Studies	x		
511199 Health/Medical Preparatory Programs, Other	x		
511201 Medicine (MD)	x		
511502 Psychiatric/Mental Health Services Technician	x		x
511601 Nursing - Registered Nurse Training (RN, ASN, BSN, MSN)	x	x	x
511602 Nursing Administration (MSN, MS, PhD)	x		
511603 Adult Health Nurse/Nursing	x		x
511604 Nurse Anesthetist	x		x
511605 Family Practice Nurse/Nurse Practitioner	x		x
511606 Maternal/Child Health and Neonatal Nurse/Nursing	x		x
511607 Nurse Midwife/Nursing Midwifery	x		x
511608 Nursing Science (MS, PhD)	x		x
511609 Pediatric Nurse/Nursing	x		x
511610 Psychiatric/Mental Health Nurse/Nursing	x		x
511611 Public Health/Community Nurse/Nursing	x		x
511612 Perioperative/Operating Room and Surgical Nurse/Nursing	x		x
511613 Licensed Practical /Vocational Nurse Training (LPN, LVN, Cert, Dipl, AAS)	x	x	x
511614 Nurse/Nursing Assistant/Aide and Patient Care Assistant	x	x	x
511616 Clinical Nurse Specialist	x		x
511617 Critical Care Nursing	x		x
511618 Occupational and Environmental Health Nursing	x		x
511699 Nursing, Other	x		
511701 Optometry (OD)	x		
511801 Opticianry/Ophthalmic Dispensing Optician	x	x	
511802 Optometric Technician/Assistant	x		
511803 Ophthalmic Technician/Technologist	x		
511804 Orthoptics/Orthoptist	x		
511899 Ophthalmic & Optometric Support Services & Allied Professions, Other	x		
511901 Osteopathic Medicine/Osteopathy (DO)	x		
512001 Pharmacy (PharmD [USA] PharmD, BS/BPharm [Canada])	x		
512002 Pharmacy Admin & Pharmacy Policy & Regulatory Affairs (MS, PhD)	x		
512003 Pharmaceuticals and Drug Design (MS, PhD)	x		
512008 Clinical, Hospital, & Managed Care Pharmacy (MS, PhD)	x		
512101 Podiatric Medicine/Podiatry (DPM)	x		
512301 Art Therapy/Therapist	x		
512302 Dance Therapy/Therapist	x		
512305 Music Therapy/Therapist	x		
512401 Veterinary Medicine (DVM)	x		
512501 Veterinary Sciences/Veterinary Clinical Sciences, General (Cert, MS, PhD)	x		
512502 Veterinary Anatomy (Cert, MS, PhD)	x		
512503 Veterinary Physiology (Cert, MS, PhD)	x		
512504 Veterinary Microbiology & Immunobiology (Cert, MS, PhD)	x		
512505 Veterinary Pathology & Pathobiology (Cert, MS, PhD)	x		
512506 Veterinary Toxicology & Pharmacology (Cert, MS, PhD)	x		
512507 Large Animal/Food Animal & Equine Surgery & Medicine (Cert, MS, PhD)	x		
512508 Small/Companion Animal Surgery & Medicine (Cert, MS, PhD)	x		

512509 Comparative & Laboratory Animal Medicine (Cert, MS, PhD)	x		
512510 Veterinary Preventive Medicine Epidemiology & Public Health	x		
512511 Veterinary Infectious Diseases (Cert, MS, PhD)	x		
512599 Veterinary Biomedical & Clinical Sciences, Other (Cert, MS, PhD)	x		
512601 Health Aide	x		x
512602 Home Health Aide/Home Attendant	x		x
512603 Medication Aide	x		
512699 Health Aides/Attendants/Orderlies, Other	x		
513101 Dietetics/Dietitian (RD)	x	x	x
513102 Clinical Nutrition/Nutritionist	x		x
513103 Dietetic Technician (DTR)	x		x
513104 Dietitian Assistant	x	x	x
513199 Dietetics and Clinical Nutrition Services, Other	x		x
513301 Acupuncture	x		
513302 Traditional Chinese/Asian Medicine & Chinese Herbology	x		
513303 Naturopathic Medicine/Naturopathy (ND)	x		
513304 Homeopathic Medicine/Homeopathy	x		
513305 Ayurvedic Medicine/Ayurveda	x		
513399 Alternative & Complementary Medicine & Medical Systems, Other	x		
513401 Direct Entry Midwifery (LM, CPM)	x		
513499 Alternative & Complementary Medical Support Services, Other	x		
513501 Massage Therapy/Therapeutic Massage	x		x
513502 Asian Bodywork Therapy	x		x
513503 Somatic Bodywork	x		x
513599 Somatic Bodywork & Related Therapeutic Services, Other	x		x
513601 Movement Therapy and Movement Education	x		
513602 Yoga Teacher Training/Yoga Therapy	x		
513603 Hypnotherapy/Hypnotherapist	x		
513699 Movement & Mind-Body Therapies & Education, Other	x		
513701 Aromatherapy	x		
513702 Herbalism/Herbalist	x		
513703 Polarity Therapy	x		
513704 Reiki	x		
513799 Energy and Biologically Based Therapies, Other	x		
519999 Health Professions and Related Clinical Sciences, Other	x		
8.20000 Diagnostics Services Pathway			
410101 Biology Technician/Biotechnology Laboratory Technician	x		
510802 Clinical/Medical Laboratory Assistant	x		
510811 Pathology/Pathologist Assistant	x		x
510812 Respiratory Therapy Technician/Assistant	x		x
510813 Chiropractic Assistant/Technician	x		
510899 Allied Health and Medical Assisting Services, Other	x		
510901 Cardiovascular Technology/Technologist	x		
510902 Electrocardiograph Technology/Technician	x		
510903 Electroneurodiagnostic/Electroencephalographic Tech/Technologist	x		
510904 Emergency Medical Technology/Technician (EMT Paramedic)	x	x	
510905 Nuclear Medical Technology/Technologist	x		
510906 Perfusion Technology/Perfusionist	x		
510907 Medical Radiologic Technology/Science - Radiation Therapist	x	x	
510910 Diagnostic Medical Sonography/Sonographer & Ultrasound Technician	x	x	
510911 Radiologic Technology/Science - Radiographer	x		
510912 Physician Assistant	x		
510913 Athletic Training/Trainer	x		
510914 Gene/Genetic Therapy	x		
510915 Cardiopulmonary Technology/Technologist	x		
510916 Radiation Protection/Health Physics Technician	x		
511002 Cytotechnology/Cytotechnologist	x		
511003 Hematology Technology/Technician	x		

511004 Clinical/Medical Laboratory Technician	x	x		
511005 Clinical Laboratory Science/Medical Technology/Technologist	x	x		
511006 Ophthalmic Laboratory Technology/Technician	x			
511007 Histologic Technology/Histotechnologist	x			
511008 Histologic Technician	x			
511009 Phlebotomy/Phlebotomist	x	x		
511010 Cytogenetics/Genetics/Clinical Genetics Technology/Technologist	x			
511099 Clinical/Medical Laboratory Science & Allied Professions, Other	x	x		
8.30000 Health Informatics Pathway				
510000 Health Services/Allied Health/Health Sciences, General	x			x
510701 Health/Health Care Administration/Management	x			x
510702 Hospital & Health Care Facilities Administration/Management	x			x
510703 Health Unit Coordinator/Ward Clerk	x		x	x
510704 Health Unit Manager/Ward Supervisor	x			x
510705 Medical Office Management/Administration	x	x		x
510706 Health Information/Medical Records Administration/Administrator	x			x
510707 Health Information/Medical Records Technology/Technician	x	x		x
510708 Medical Transcription/Transcriptionist	x	x		x
510709 Medical Office Computer Specialist/Assistant	x			x
510710 Medical Office Assistant/Specialist	x		x	x
510711 Medical/Health Management & Clinical Assistant/Specialist	x			x
510712 Medical Reception/Receptionist	x		x	x
510713 Medical Insurance Coding Specialist/Coder	x		x	x
510714 Medical Insurance Specialist/Medical Biller	x		x	x
510715 Health/Medical Claims Examiner	x			x
510716 Medical Administrative/Executive Assistant & Medical Secretary	x	x	x	x
510717 Medical Staff Services Technology/Technician	x			x
510799 Health and Medical Administrative Services, Other	x			x
511503 Clinical/Medical Social Work	x		x	x
511509 Genetic Counseling/Counselor	x			x
512201 Public Health, General (MPH, DPH)	x			x
512202 Environmental Health	x			x
512205 Health/Medical Physics	x			x
512206 Occupational Health and Industrial Hygiene	x			x
512207 Public Health Education and Promotion	x			x
512208 Community Health and Preventive Medicine	x			x
512209 Maternal and Child Health	x			x
512210 International Public Health/International Health	x			x
512211 Health Services Administration	x			x
512299 Public Health, Other	x			x
512306 Occupational Therapy/Therapist	x		x	x
512307 Orthotist/Prosthetist	x			x
512308 Physical Therapy/Therapist	x			x
512309 Therapeutic Recreation/Recreational Therapy	x			x
512310 Vocational Rehabilitation Counseling/Counselor	x			x
512311 Kinesiotherapy/Kinesiotherapist	x			x
512312 Assistive/Augmentative Technology & Rehabilitation Engineering	x			x
512399 Rehabilitation and Therapeutic Professions, Other	x			x
512703 Medical Illustration/Medical Illustrator	x			x
512706 Medical Informatics	x		x	x
512799 Medical Illustration and Informatics, Other	x		x	x
513201 Bioethics/Medical Ethics	x			x
8.40000 Support Services Pathway				
190501 Foods, Nutrition, and Wellness Studies, General	x		x	
190504 Human Nutrition	x			
190505 Foodservice Systems Administration/Management	x			
190599 Foods, Nutrition, and Related Services, Other	x			

8.50000 Biotechnology Research and Development Pathway				
512004 Medicinal and Pharmaceutical Chemistry (MS, PhD)	x			
512005 Natural Products Chemistry & Pharmacognosy (MS, PhD)	x			
512006 Clinical and Industrial Drug Development (MS, PhD)	x			
512007 Pharmacoeconomics/Pharmaceutical Economics (MS, PhD)	x			
512009 Industrial & Physical Pharmacy & Cosmetic Sciences (MS, PhD)	x			
512099 Pharmacy, Pharmaceutical Sciences, and Administration, Other	x	x		
9.0 Hospitality and Tourism Cluster				
9.10000 Restaurants and Food and Beverage Services Pathway				
120500 Cooking and Related Culinary Arts, General	x		x	
120501 Baking and Pastry Arts/Baker/Pastry Chef	x			
120502 Bartending/Bartender	x			
120503 Culinary Arts/Chef Training	x	x	x	
120504 Restaurant, Culinary, and Catering Management/Manager	x	x		
120505 Food Preparation/Professional Cooking/Kitchen Assistant	x		x	
120506 Meat Cutting/Meat Cutter	x		x	
120507 Food Service, Waiter/Waitress, & Dining Room Management/Manager	x			x
120508 Institutional Food Workers	x	x		
120599 Culinary Arts and Related Services, Other	x			
129999 Personal and Culinary Services, Other	x			
520905 Restaurant/Food Services Management	x			
9.20000 Lodging Pathway				
520904 Hotel/Motel Administration/Management	x			
	x			
9.30000 Travel and Tourism Pathway				
190604 Facilities Planning and Management	x			
520901 Hospitality Administration/Management, General	x	x		
520903 Tourism and Travel Services Management	x			
520999 Hospitality Administration/Management, Other	x			
521905 Tourism and Travel Services Marketing Operations	x			x
521906 Tourism Promotion Operations	x			
	x			
9.40000 Recreation, Amusements and Attractions Pathway				
520906 Resort Management	x			
521910 Hospitality and Recreation Marketing Operations	x			
	x			
10.0 Human Service Cluster				
10.10000 Early Childhood Development and Services Career Pathway				
190706 Child Development	x	x		x
190708 Child Care and Support Services Management	x	x	x	x
190709 Child Care Provider/Assistant	x	x	x	x
	x			
10.20000 Counseling and Mental Health Services Career Pathway				
420401 Community Psychology	x			
420601 Counseling Psychology	x			
420701 Developmental and Child Psychology	x			
511501 Substance Abuse/Addiction Counseling	x			
511504 Community Health Services/Liaison/Counseling	x			
511505 Marriage and Family Therapy/Counseling	x			
511506 Clinical Pastoral Counseling/Patient Counseling	x			
511508 Mental Health Counseling/Counselor	x			
511599 Mental & Social Health Services & Allied Professions, Other	x			
	x			
10.30000 Family and Community Services Career Pathway				
190000 Work and Family Studies	x			
190701 Human Development and Family Studies, General	x			

190702 Adult Development and Aging	x			
190704 Family Systems	x			
190707 Family and Community Services	x			
190799 Human Development, Family Studies, & Related Services, Other	x			
301101 Gerontology	x			
440000 Human Services, General	x			
440201 Community Organization and Advocacy	x			x
440701 Social Work	x	x		x
440702 Youth Services/Administration	x			x
440799 Social Work, Other	x			
449999 Public Administration and Social Service Professions, Other	x		x	
450101 Social Sciences, General	x			
451101 Sociology	x			
459999 Social Sciences, Other	x			
10.40000 Personal Care Services Career Pathway				
120301 Funeral Service and Mortuary Science, General	x	x	x	
120302 Funeral Direction/Service	x		x	
120303 Mortuary Science and Embalming/Embalmer	x			
120399 Funeral Service and Mortuary Science, Other	x			
120401 Cosmetology/Cosmetologist, General	x	x		x
120402 Barbering/Barber	x		x	
120404 Electrolysis/Electrology and Electrolysis Technician	x			x
120406 Make-Up Artist/Specialist	x			x
120407 Hair Styling/Stylist and Hair Design	x			x
120408 Facial Treatment Specialist/Facialist	x			x
120409 Aesthetician/Esthetician and Skin Care Specialist	x			
120410 Nail Technician/Specialist and Manicurist	x			x
120411 Permanent Cosmetics/Makeup and Tattooing	x			x
120412 Salon/Beauty Salon Management/Manager	x			x
120413 Cosmetology, Barber/Styling, and Nail Instructor	x			x
120499 Cosmetology and Related Personal Grooming Arts, Other	x			x
	x			
10.50000 Consumer Services Career Pathway				
190101 Family and Consumer Sciences/Human Sciences, General	x			x
190201 Business Family and Consumer Sciences/Human Sciences	x			x
190202 Family and Consumer Sciences/Human Sciences Communication	x			x
190203 Consumer Merchandising/Retailing Management	x			x
190299 Family & Consumer Sciences/Human Sciences Business Services, Other	x			x
190401 Family Resource Management Studies, General	x			x
190402 Consumer Economics	x			x
190403 Consumer Services and Advocacy	x			x
190499 Family and Consumer Economics and Related Services, Other	x			x
199999 Family and Consumer Sciences/Human Sciences, Other	x			x
11.0 Information Technology Cluster				
11.10000 Network Systems Pathway				
110701 Computer Science	x	x	x	x
110801 Web Page, Digital/Multimedia & Information Resources Design	x			x
110901 Computer Systems Networking and Telecommunications	x	x	x	x
111002 System, Networking, and LAN/WAN Management/Manager	x	x	x	x
11.20000 Information Support Services Pathway				
110101 Computer and Information Sciences, General	x	x	x	x
110103 Information Technology	x	x	x	x
110199 Computer and Information Sciences, Other	x			x
110301 Data Processing and Data Processing Technology/Technician	x		x	x
110401 Information Science/Studies	x	x	x	x
110802 Data Modeling/Warehousing and Database Administration	x			x

111001 System Administration/Administrator	x		x		x
111099 Computer/IT Services Administration & Management, Other	x				x
119999 Computer and Information Sciences & Support Services, Other	x	x	x		x
11.30000 Interactive Media Pathway					
110102 Artificial Intelligence and Robotics	x		x		
110899 Computer Software and Media Applications, Other	x				
111004 Web/Multimedia Management and Webmaster	x	x			
11.40000 Programming and Software Development Pathway					
110201 Computer Programming/Programmer, General	x	x	x		x
110202 Computer Programming, Specific Applications	x				x
110203 Computer Programming, Vendor/Product Certification	x	x			x
110299 Computer Programming, Other	x				x
110501 Computer Systems Analysis/Analyst	x	x	x		x
111003 Computer and Information Systems Security	x		x		x
140901 Computer Engineering, General	x		x		x
140903 Computer Software Engineering	x		x		x
140999 Computer Engineering, Other	x		x		x
12.0 Law and Public Safety Cluster					
12.10000 Correction Services Pathway					
430102 Corrections	x		x		
430110 Juvenile Corrections	x			x	
430113 Corrections Administration	x				
430199 Corrections and Criminal Justice, Other	x				
12.20000 Emergency and Fire Management Services Pathway					
430201 Fire Protection and Safety Technology/Technician	x				
430202 Fire Services Administration	x	x			
430203 Fire Science/Firefighting	x	x	x		
430299 Fire Protection, Other	x		x		
12.30000 Security and Protective Services Pathway					
430109 Security and Loss Prevention Services	x		x		
430112 Securities Services Administration/Management	x		x		
439999 Security and Protective Services, Other	x				
12.40000 Law Enforcement Services Pathway					
430103 Criminal Justice/Law Enforcement Administration	x	x	x		
430104 Criminal Justice/Safety Studies	x	x	x		
430106 Forensic Science and Technology	x	x			
430107 Criminal Justice/Police Science	x	x	x		
430111 Criminalistics and Criminal Science	x		x		
450401 Criminology	x				
12.50000 Legal Services Pathway					
220000 Legal Studies, General	x				
220001 Pre-Law Studies	x				
220101 Law (LL.B., J.D.)	x				
220201 Advanced Legal Research/Studies, General (LL.M., M.C.L., M.L.I., M.S.L., J.S.D./S.J.D.)	x				
220202 Programs for Foreign Lawyers (LL.M., M.C.L.)	x				
220203 American/U.S. Law/Legal Studies/Jurisprudence (LL.M., M.C.J., J.S.D./S.J.D.)	x				
220205 Banking, Corporate, Finance, & Securities Law (LL.M., J.S.D./S.J.D.)	x				
220206 Comparative Law (LL.M., M.C.L., J.S.D./S.J.D.)	x				
220207 Energy, Environment, & Natural Resources Law (LL.M., M.S., J.S.D./S.J.D.)	x				
220208 Health Law (LL.M., M.J., J.S.D./S.J.D.)	x				
220209 International Law & Legal Studies (LL.M., J.S.D./S.J.D.)	x				

220210 International Business, Trade, & Tax Law (LL.M., J.S.D./S.J.D.).	x		
220211 Tax Law/Taxation (LL.M., J.S.D./S.J.D.).	x		
220299 Legal Research & Advanced Professional Studies, Other	x		
220301 Legal Administrative Assistant/Secretary	x	X	x
220302 Legal Assistant/Paralegal	x	X	x
220303 Court Reporting/Court Reporter	x		x
220399 Legal Support Services, Other	x		
229999 Legal Professions and Studies, Other	x		

13.0 Manufacturing Cluster

13.10000 Precision Metal Production Pathway	x		
480000 Precision Production Trades, General	x		
480303 Upholstery/Upholsterer	x	X	x
480304 Shoe, Boot and Leather Repair	x		
480399 Leatherworking and Upholstery, Other	x		
480501 Machine Tool Technology/Machinist	x	X	x
480503 Machine Shop Technology/Assistant	x	X	x
480506 Sheet Metal Technology/Sheetworking	x		x
480507 Tool and Die Technology/Technician	x	X	x
480508 Welding Technology/Welder	x	X	x
480701 Woodworking, General	x		
480702 Furniture Design and Manufacturing	x		
480703 Cabinetmaking and Millwork/Millwright	x		x
480799 Woodworking, Other	x		
489999 Precision Production, Other	x	X	
13.20000 Production Design, Operations, and Maintenance Pathway			
190901 Apparel and Textiles, General	x		
190902 Apparel and Textile Manufacture	x		
190904 Textile Science	x		
190999 Apparel and Textiles, Other	x		
410301 Chemical Technology/Technician	x		x
410399 Physical Science Technologies/Technicians, Other	x		
419999 Science Technologies/Technicians, Other	x		
13.30000 Electromechanical Installation and Maintenance Pathway			
150303 Electrical, Electronic & Communications Engineering Tech/Technician	x	x	x
150305 Telecommunications Technology/Technician	x		x
150399 Electrical & Electronic Engineering Technologies/Technicians, Other	x	x	x
150401 Biomedical Technology/Technician	x	x	x
150403 Electromechanical Technology/Electromechanical Engineering Tech	x	x	
150405 Robotics Technology/Technician	x		
150499 Electromechanical & Instrumentation and Maintenance Technologies/Technicians, Other	x	x	x
150607 Plastics Engineering Technology/Technician	x		x
150611 Metallurgical Technology/Technician	x	x	x
150612 Industrial Technology/Technicians.	x	x	x
150613 Manufacturing Technology/Technician	x		x
150699 Industrial Production Technologies/Technicians, Other	x	x	x
150701 Occupational Safety and Health Technology/Technician	x		
150703 Industrial Safety Technology/Technician	x		
151103 Hydraulics and Fluid Power Technology/Technician	x		x
151199 Engineering-Related Technologies, Other	x		
151201 Computer Engineering Technology/Technician	x	x	x
151202 Computer Technology/Computer Systems Technology	x	x	x
151203 Computer Hardware Technology/Technician	x		
151204 Computer Software Technology/Technician	x		
151299 Computer Engineering Technologies/Technicians, Other	x		x
410204 Industrial Radiologic Technology/Technician	x		
410205 Nuclear/Nuclear Power Technology/Technician	x		

410299 Nuclear & Industrial Radiologic Technologies/Technicians, Other	x		
470000 Mechanics and Repairers, General	x		
470101 Electrical/Electronics Equipment Installation & Repair, General	x	x	
470102 Business Machine Repair	x		x
470104 Computer Installation and Repair Technology/Technician	x	x	x
470105 Industrial Electronics Technology/Technician	x	x	
470106 Appliance Installation and Repair Technology/Technician	x		x
470303 Industrial Mechanics and Maintenance Technology	x	x	x
470399 Heavy/Industrial Equipment Maintenance Technologies, Other	x	x	x
470402 Gunsmithing/Gunsmith	x		
470403 Locksmithing and Safe Repair	x		
470404 Musical Instrument Fabrication and Repair	x		x
470408 Watchmaking and Jewelmaking	x		x
470409 Parts & Warehousing Operations & Maintenance Technology/Technician	x		
470499 Precision Systems Maintenance and Repair Technologies, Other	x		
13.40000 Precision Technology Processes Pathway			
150304 Laser and Optical Technology/Technician	x		x
150404 Instrumentation Technology/Technician	x		x
150702 Quality Control Technology/Technician	x	x	
150799 Quality Control and Safety Technologies/Technicians, Other	x		
14.00000 Marketing Sales and Service Career Cluster			
14.10000 Management and Entrepreneurship Pathway	x		
521401 Marketing/Marketing Management, General	x		x
521403 International Marketing	x		x
521499 Marketing, Other	x		x
14.20000 Professional Sales and Marketing Pathway			
190905 Apparel and Textile Marketing Management	x		
190906 Fashion and Fabric Consultant	x		
521501 Real Estate	x		
521803 Retailing and Retail Operations	x	x	x
521804 Selling Skills and Sales Operations	x		
521899 General Merchandising, Sales, & Related Marketing Operations, Other	x		
521901 Auctioneering	x		
521902 Fashion Merchandising	x		
521903 Fashion Modeling	x		x
521904 Apparel and Accessories Marketing Operations	x		
521909 Special Products Marketing Operations	x		
521999 Specialized Merchandising, Sales, & Related Marketing Operations, Other	x		
14.30000 Buying and Merchandising Pathway			
521801 Sales, Distribution, and Marketing Operations, General	x	x	
521802 Merchandising and Buying Operations	x		
14.40000 Marketing Communication and Promotion Pathway	x		x
14.50000 Marketing Information and Research Pathway			
521402 Marketing Research	x		x
14.60000 Distribution and Logistics Pathway	x		
14.70000 E-Marketing Pathway			
520208 E-Commerce/Electronic Commerce	x		x
15.0 Scientific Research/Engineering Cluster	x		
15.10000 Engineering and Technology Pathway	x		
140101 Engineering, General	x		x

140201 Aerospace, Aeronautical and Astronautical Engineering	x		x
140301 Agricultural/Biological Engineering and Bioengineering	x		x
140401 Architectural Engineering	x		x
140501 Biomedical/Medical Engineering	x		x
140601 Ceramic Sciences and Engineering	x		x
140701 Chemical Engineering	x		x
140801 Civil Engineering, General	x		x
140802 Geotechnical Engineering	x		x
140803 Structural Engineering	x		x
140804 Transportation and Highway Engineering	x		x
140805 Water Resources Engineering	x		x
140899 Civil Engineering, Other	x		x
140902 Computer Hardware Engineering	x		x
141001 Electrical, Electronics and Communications Engineering	x		x
141101 Engineering Mechanics	x		x
141201 Engineering Physics	x		x
141301 Engineering Science	x		x
141401 Environmental/Environmental Health Engineering	x		x
141801 Materials Engineering	x		x
141901 Mechanical Engineering	x		x
142001 Metallurgical Engineering	x		x
142101 Mining and Mineral Engineering	x		x
142201 Naval Architecture and Marine Engineering	x		x
142301 Nuclear Engineering	x		x
142401 Ocean Engineering	x		x
142501 Petroleum Engineering	x		x
142701 Systems Engineering	x		x
142801 Textile Sciences and Engineering	x		x
143201 Polymer/Plastics Engineering	x		x
143301 Construction Engineering	x		x
143401 Forest Engineering	x		x
143501 Industrial Engineering	x		x
143601 Manufacturing Engineering	x		x
143901 Geological/Geophysical Engineering	x		x
149999 Engineering, Other	x		x
150000 Engineering Technology, General	x		
15.0901 Mining Technology/Technician	x		x
15.0903 Petroleum Technology/Technician	x		x
15.0999 Mining and Petroleum Technologies/Technicians, Other	x		
151401 Nuclear Engineering Technology/Technician	x	x	
151501 Engineering/Industrial Management	x		x
159999 Engineering Technologies/Technicians, Other	x	x	x
15.30000 Science and Mathematics Pathway			
260101 Biology/Biological Sciences, General	x		
260102 Biomedical Sciences, General	x		
260202 Biochemistry	x		
260203 Biophysics	x		
260204 Molecular Biology	x		
260205 Molecular Biochemistry	x		
260206 Molecular Biophysics	x		
260207 Structural Biology	x		
260208 Photobiology	x		
260209 Radiation Biology/Radiobiology	x		
260210 Biochemistry/Biophysics and Molecular Biology	x		
260299 Biochemistry, Biophysics and Molecular Biology, Other	x		
260301 Botany/Plant Biology	x		
260305 Plant Pathology/Phytopathology	x		
260307 Plant Physiology	x		

260308 Plant Molecular Biology	x	
260399 Botany/Plant Biology, Other	x	
260401 Cell/Cellular Biology and Histology	x	
260403 Anatomy	x	
260404 Developmental Biology and Embryology	x	
260405 Neuroanatomy	x	
260406 Cell/Cellular and Molecular Biology	x	
260407 Cell Biology and Anatomy	x	
260499 Cell/Cellular Biology and Anatomical Sciences, Other	x	
260502 Microbiology, General	x	
260503 Medical Microbiology and Bacteriology	x	
260504 Virology	x	
260505 Parasitology	x	
260506 Mycology	x	
260507 Immunology	x	
260599 Microbiological Sciences and Immunology, Other	x	
260905 Reproductive Biology	x	
260906 Neurobiology and Neurophysiology	x	
260907 Cardiovascular Science	x	
260908 Exercise Physiology	x	
260909 Vision Science/Physiological Optics	x	
260910 Pathology/Experimental Pathology	x	
260911 Oncology and Cancer Biology	x	
260999 Physiology, Pathology, and Related Sciences, Other	x	
261001 Pharmacology	x	
261002 Molecular Pharmacology	x	
261003 Neuropharmacology	x	
261004 Toxicology	x	
261005 Molecular Toxicology	x	
261006 Environmental Toxicology	x	
261007 Pharmacology and Toxicology	x	
261099 Pharmacology and Toxicology, Other	x	
261101 Biometry/Biometrics	x	
261102 Biostatistics	x	x
261103 Bioinformatics	x	
261199 Biomathematics and Bioinformatics, Other	x	
261201 Biotechnology	x	x
261301 Ecology	x	
261302 Marine Biology and Biological Oceanography	x	
261303 Evolutionary Biology	x	
261304 Aquatic Biology/Limnology	x	
261305 Environmental Biology	x	
261306 Population Biology	x	
261307 Conservation Biology	x	
261308 Systematic Biology/Biological Systematics	x	
261309 Epidemiology	x	
261399 Ecology, Evolution, Systematics & Population Biology, Other	x	
269999 Biological and Biomedical Sciences, Other	x	
270101 Mathematics, General	x	
270102 Algebra and Number Theory	x	
270103 Analysis and Functional Analysis	x	
270104 Geometry/Geometric Analysis	x	
270105 Topology and Foundations	x	
270199 Mathematics, Other	x	
270301 Applied Mathematics	x	
270303 Computational Mathematics	x	
270399 Applied Mathematics, Other	x	
270501 Statistics, General	x	
270502 Mathematical Statistics and Probability	x	

270599 Statistics, Other	x		
279999 Mathematics and Statistics, Other	x		
300101 Biological and Physical Sciences	x		
300601 Systems Science and Theory	x		
300801 Mathematics and Computer Science	x		
301001 Biopsychology	x		
301801 Natural Sciences	x		
301901 Nutrition Sciences	x		x
400101 Physical Sciences	x		
400201 Astronomy	x		
400202 Astrophysics	x		
400203 Planetary Astronomy and Science	x		
400299 Astronomy and Astrophysics, Other	x		
400401 Atmospheric Sciences and Meteorology, General	x		
400402 Atmospheric Chemistry and Climatology	x		
400403 Atmospheric Physics and Dynamics	x		
400404 Meteorology	x		
400499 Atmospheric Sciences and Meteorology, Other	x		
400501 Chemistry, General	x		
400502 Analytical Chemistry	x		
400503 Inorganic Chemistry	x		
400504 Organic Chemistry	x		
400506 Physical and Theoretical Chemistry	x		
400507 Polymer Chemistry	x		
400508 Chemical Physics	x		
400599 Chemistry, Other	x		
400601 Geology/Earth Science, General	x		x
400602 Geochemistry	x		x
400603 Geophysics and Seismology	x		x
400604 Paleontology	x		x
400605 Hydrology and Water Resources Science	x		x
400606 Geochemistry and Petrology	x		x
400607 Oceanography, Chemical and Physical	x		x
400699 Geological and Earth Sciences/Geosciences, Other	x		x
400801 Physics, General	x		
400802 Atomic/Molecular Physics	x		
400804 Elementary Particle Physics	x		
400805 Plasma and High-Temperature Physics	x		
400806 Nuclear Physics	x		
400807 Optics/Optical Sciences	x		
400808 Solid State and Low-Temperature Physics	x		
400809 Acoustics	x		
400810 Theoretical and Mathematical Physics	x		
400899 Physics, Other	x		
409999 Physical Sciences, Other	x		
511401 Medical Scientist (MS, PhD)	x		
16.0 Transportation, Distribution, and Logistics Cluster			
16.10000 Transportation Operations Pathway	x		
490101 Aeronautics/Aviation/Aerospace Science & Technology, General	x		x
490102 Airline/Commercial/Professional Pilot and Flight Crew	x		x
490104 Aviation/Airway Management and Operations	x		x
490105 Air Traffic Controller	x		
490106 Airline Flight Attendant	x		
490108 Flight Instructor	x		x
490199 Air Transportation, Other	x		
490205 Truck and Bus Driver/Commercial Vehicle Operation	x	X	x
490299 Ground Transportation, Other	x		
490309 Marine Science/Merchant Marine Officer	x		

490399 Marine Transportation, Other	x		
499999 Transportation and Materials Moving, Other	x		x
16.20000 Logistics Planning and Management Services Pathway			
520209 Transportation/Transportation Management	x		x
16.30000 Warehousing and Distribution Center Operations Pathway			
520409 Parts, Warehousing, & Inventory Management Operations	x		
520410 Traffic, Customs, & Transportation Clerk/Technician	x		
16.40000 Facility and Mobile Equipment Maintenance Pathway			
470603 Autobody/Collision and Repair Technology/Technician	x	x	x
470604 Automobile/Automotive Mechanics Technology/Technician	x	x	x
470605 Diesel Mechanics Technology/Technician	x	x	x
470606 Small Engine Mechanics and Repair Technology/Technician	x	x	x
470607 Airframe Mechanics & Aircraft Maintenance Technology/Technician	x	x	x
470608 Aircraft Powerplant Technology/Technician	x	x	x
470609 Avionics Maintenance Technology/Technician	x	x	
470610 Bicycle Mechanics and Repair Technology/Technician	x		
470611 Motorcycle Maintenance and Repair Technology/Technician	x		x
470612 Vehicle Emissions Inspection & Maintenance Technology/Technician	x		x
470613 Medium/Heavy Vehicle and Truck Technology/Technician	x		x
470614 Alternative Fuel Vehicle Technology/Technician	x		x
470615 Engine Machinist	x		
470616 Marine Maintenance/Fitter & Ship Repair Technology/Technician	x	x	x
470699 Vehicle Maintenance and Repair Technologies, Other.	x	x	
479999 Mechanic and Repair Technologies/Technicians, Other	x		
16.5 Transportation Sys/ Infrastructure Planning, Mgt, & Regulation	x		
16.60000 Health, Safety and Environmental Pathway	x		
16.70000 Sales and Service Pathway			
521907 Vehicle & Vehicle Parts & Accessories Marketing Operations	x		x

Target	Source
CTE	
ARK	ADHE Accountability System
FNT	www.nape.org
MNT	www.nape.org
HS	
HW	ADWE & ADWS
HD	ADWS
EMERG	