

Implementing Programs of Study: What, Why and How?

(With Accompanying Toolkit)

Perkins IV requires all local grant recipients to offer at least one program of study; however, many states are mandating that more than one be offered. This requirement may seem innocuous on its face but has the potential to be revolutionary. This brief will share programs of study requirements, discuss implementation strategies and explore how Maryland and Oregon are leading change in their states by developing and implementing programs of study.

Why programs of study? While programs of study are not new to CTE - given our rich heritage of Tech Prep, career academies and Career Clusters - Perkins IV is the first federal statute to require their systemic implementation. Programs of study were deliberately added into Perkins IV as a way to achieve a new vision for CTE by more consistently and thoroughly connecting secondary and postsecondary education, requiring integration of rigorous academic and technical instruction and encouraging the acquisition of dual credit. Programs of study provide a roadmap for students to navigate educational options and prepare them to successfully transition into postsecondary education, careers, and lifelong learning.¹ Further, programs of study serve as a tool for collaboration between the learner levels, a framework for curriculum revision and alignment and a dynamic mechanism that can ensure that CTE is meeting the needs of the ever-changing economy.

Programs of Study: the Bottom Line

- Secondary & postsecondary
- Non-duplicative sequence that is coherent and rigorous
- May provide opportunities for dual/concurrent enrollment in a postsecondary program
- AND** lead to an industry-recognized credential, certificate, or an associate or baccalaureate degree

How are states approaching programs of study development? The first step for most states is to define a framework that programs of study will be organized around, grouping occupations according to common knowledge and skills. The majority of states use the U.S. Department of Education's 16 Career Clusters as a starting point and then adapt the model to better meet their state's economic and industry needs.

Implementation of pathways organized around the 16 career clusters provides:

- ❖ Consistency for better data (results) and shared opportunities for development
- ❖ Articulation within and between states
- ❖ Employer and postsecondary validated standards
- ❖ Opportunities for all students
- ❖ A "place" for all career goals and interests

Secondly, states must define their role in developing programs of study.

- States can develop state-level models and either mandate local adoption of the program of study or allow for their voluntary use.
- States can create guidelines for local development of programs of study that will require state approval following specified criteria or guidelines;
- Or a combination of both.

In a 2007 NASDCTEc survey, states were asked how they plan to develop programs of study during their transition year of Perkins IV. Of the 52 responses, 17 planned to

develop programs of study at the state level with voluntary local use and 16 with mandatory local use. 24 states indicated that locals would develop programs of study with state approval². Many states chose to incorporate adaptations of their state models that reflected scope, scale, and capacity issues. For 2008, the trend is for more states to develop programs of study with input at both the state and local levels.

The third step is to begin the actual development of the programs of study or the criteria/guidelines that will be used in approving locally developed programs of study. The States' Career Clusters Initiative created [15 critical components](#), with an accompanying guide/self-assessment tool for [state or local](#) implementation of career clusters. The 15 critical components also serve as a vehicle for stakeholder input. States may want to seek out other states as learning partners in progress toward implementing career clusters and programs of study.

State Snapshots

Maryland (contributed by Kathy Oliver koliver@msde.state.md.us and Lynne Gilli lgilli@msde.state.md.us)

In Maryland, programs of study are developed at the state level, following the *Policies and Procedures for the Development and Continuous Improvement of Career and Technology Education Programs*.³ Maryland's new [model of CTE](#) includes organizing instructional programs within 10 broad career clusters⁴ designed to provide students with multiple career pathways leading to employment and further education.

The Maryland State Department of Education, in partnership with statewide industry advisory groups, identified ten Career Clusters that represent core business functions across broad industry areas in Maryland. Over 350 business partners further identified career pathways based on the end-to-end business process within career clusters.⁵

At the state level, there are over 40 Maryland CTE Programs of Study that align with the ten career clusters. The programs of study are designed as sequences of four or more related courses to enable students to successfully transition from high school into two- or four-year colleges. The following criteria guide the development of Maryland CTE Programs of Study:

- Standards-based curriculum and assessments aligned to current industry/technical skill standards, academic standards, and Skills for Success (communication, technology, interpersonal, learning, and thinking skills);
- Value-added options for students through industry certification, licensure, or college credit earned while in high school;
- Capstone and work-based learning opportunities for students directly related to the CTE program;
- Oversight and quality assurance through program certification and industry advisory groups; and
- Teacher professional development for implementation of the program as well as on-going upgrades.

Maryland uses a policies and procedures guide (on page 7) to review CTE programs that are under consideration for adoption or in the development phase, which guides and informs the process to identify new Maryland CTE programs of study.

Oregon (contributed by Jim Schoelkopf jschoelkopf@mprinc.com and Laura Roach laura.s.roach@state.or.us)

In Oregon, locals develop programs of study, with regional and state approval. Oregon chose to refine the 16 national career clusters to six Career Learning Areas based on the state's workforce opportunities and the educational delivery system.

Oregon created a Program Design and Development Task Force⁶ which provided specific recommendations identifying programs of study core elements, additional quality design elements, and system-wide policy and process improvements. The recommendations were informed, in part, by the various career pathways initiatives, the Career Clusters Transition Initiative and the high school diploma revision. The Program Design and Development Task Force identified four core elements⁷ for designing CTE programs of study:

Historically, for many states such as Oregon, secondary and postsecondary programs have been developed independently. The concept of a single, cohesive, secondary-postsecondary continuum of study constitutes a significant paradigm shift for program design and development.⁶

1. Standards and Content are academic and technical knowledge and skills. The knowledge and skills are a basis for curriculum and instruction that has the depth and breadth to address all aspects of an industry and prepare students for high-skill, high-wage and high-demand occupations.
2. Alignment and Articulation lead to non-duplicative sequences of courses and/or education experiences. Students receive credit at the next step institution through institutional level agreements to ensure long term sustainability and cross system cooperation.
3. Technical Skill Measurement/Assessment incorporates academic and technical skill attainment measurements and assessments that are designed to meet or exceed state adjusted levels of performance. Assessments meet the state criteria for external, valid and reliable assessments.
4. Student Support Services provide guidance, advising and resources to assist students to transition through the educational continuum towards a career goal or next step educational opportunity.

To assist in implementing programs of study, Oregon's *CTE Network*, a regional collaborative system, brings together state and local staff to provide technical assistance, develop program implementation strategies, conduct program review and approval, and disburse resources. Key elements of the 5 year implementation plan include strategies, activities and timelines to meet state benchmarks and federal performance measures; policy development with associated implementation guidelines; and a continuous improvement process for planning, implementation and evaluation.

Oregon uses Perkins state leadership funds to identify successful models and practices of programs of study, develop an [online CTE resource portal](#), and support professional development and technical assistance for CTE staff.



Food for thought: As you move through the implementation phase of Perkins IV, you may face challenges⁸ in implementing programs of study. Anticipating these challenges, such as those listed below (identified by states more advanced in their implementation of career clusters and programs of study) can ensure that these challenges become opportunities to strengthen your programs rather than obstacles.

- Bridging the gap between secondary and post-secondary to develop seamless programs of study that connect at the college/university level
- Funding necessary to support the new mandates stipulated in the new Perkins IV
- The data and accountability requirements of Perkins IV pose a significant challenge due to the limited number of staff in state offices
- Professional development⁹ for state and locals on program of study requirements
- Resistance to change

And as you begin developing your programs of study, you might consider these questions¹⁰:

- Does your state's framework promote curriculum development, professional development and teacher preparation?
- How do your programs of study support your state's education improvement, workforce development and economic development initiatives, including recognition by state education policy—e.g., through legislation, regulations, or other official practices?
- Are the programs of study rigorous, aligned and focused on high skill, high wage and high demand areas?
- Do your programs of study link to state standards and accountability and thus are your accountability and state standards systems set up to monitor the performance of programs of study?
- Where appropriate, are selected CTE courses in each program designed to qualify for academic credit needed for high school graduation or postsecondary admissions?
- Do your programs of study incorporate state wide articulation agreements?
- Is each program a coherent and comprehensive cluster of both academic and technical courses?
- Does each program connect clearly to a range of postsecondary options, including two- and four-year college, apprenticeship, or the military?

Conclusion

- Remember that developing programs of study is a process, not an event.
- Don't start from scratch – use existing models and make them your own.
- Connect and learn from other states. Network to increase your awareness of the successes other states are enjoying in implementing programs of study.
- Make sure you have all the stakeholders at the table: business and industry partners, administrators, academic and technical instructors, counselors and parents, all of higher education (2 and 4 year programs), etc.
- Once a program of study is created, further refinement and continuous evaluation¹¹ is important in order to keep programs cutting-edge.

- Implementation takes time (and should never really end). Try not to do it all at once.¹²
- Choose first to develop programs of study that have the greatest need--thus proving the value of the model, paving the way for future implementation success.

And finally, have patience, persistence, a sense of humor and a commitment to excellence.



If you have any questions or would like additional information regarding this brief, please contact Ramona Schescke, NASDCTEc Research and Government Relations Assistant, at rschescke@careertech.org or 301-588-9630. Release date: October 2008.

Implementing Programs of Study: What, Why and How? Resources Toolkit

The following links and resources provide guides and examples for you as you work on your state's program of study development process. The States' Career Cluster Initiative is a veritable treasure trove of valuable information as well as the NASDCTEc website, which now has a cache of [Perkins 5-year plans](#), which you can research to find tips on what other states are doing, or glean contact names of colleagues who face similar challenges or have innovative programs that you would like to explore further.

From the [Career Clusters Website](http://www.careerclusters.org) (www.careerclusters.org)

- [Sample Programs of Study](#)
- Pyramid [Chart of the 15 critical components for implementation of career clusters](#)
- [Critical component descriptions](#) Word document
- Quick Reference Guides: Critical Components and Benchmarks for [Local/School](#) Implementation and [State/System](#) Implementation
- Career cluster Implementation How To's: Designing and Implementing a Cluster Program of Study (from 2007 Career Cluster Institute) By Becky Nelson
[PowerPoint](#)

From the [NASDCTEc website](http://www.careertech.org) (www.careertech.org)

- Brief: [Career Clusters and Programs of Study: State of the States](#)
- Brief: [Career Clusters: A Plan for Education for a Global Economy](#)

Maryland Resources

Maryland CTE Programs of Study have been developed at the state level following the [Policies and Procedures for the Development and Continuous Improvement of Career and Technology Education Programs](#).

The Maryland State Department of Education (MSDE) in partnership with statewide industry advisory groups, identified ten Career Clusters that represent core business functions across broad industry areas in Maryland. Over 350 business partners further identified career pathways based on the end-to-end business process within career clusters. This representation of industry clusters and pathways is provided in the MSDE publication titled: *Maryland Career Clusters: Restructuring Learning for Student Achievement in a Technologically Advanced, Global Society* and serves as a starting point

for the identification of Maryland CTE Programs.

<http://www.marylandpublicschools.org/MSDE/divisions/careertech/>

Maryland Career Clusters

- Arts, Media, and Communication
- Business Management and Finance
- Consumer Services, Hospitality, and Tourism
- Construction and Development
- Environmental, Agricultural, and Natural Resources Systems
- Health and Biosciences
- Human Resource Services
- Information Technology
- Manufacturing, Engineering, and Technology
- Transportation Technologies

Oregon Resources

Career and Technical Education (CTE) Programs of Study [Core Elements](#)

Perkins IV [Professional Development](#) Summary of Professional Development Taskforce Recommendations

Online [CTE Resource Portal](#)

Oregon Career Clusters

Oregon chose to refine the 16 national career clusters to six Career Learning Areas based on the state's workforce opportunities and the educational delivery system.

- Agriculture
- Food and Natural Resources
- Arts, Information and Communication
- Business and Management
- Health Services
- Human Resources
- Industrial and Engineering Systems

Additional Resources

From the U.S. Department of Education

Perkins IV Programs of Study State by State Review PY 2007-2008

<http://www.ed.gov/about/offices/list/ovae/pi/cte/prgms-stdy2007.doc>

[Career Pathways How-To Guide](#) from the Workforce Strategy Center. (2006). Cited in the Final Report for the Program of Study Pilot Project, Missouri Center for Career Education, by Terri Fayle, Paul Macka, and Larae Watkins (June 2007)

College and Career Transitions Initiative (CCTI) College [Toolkits](#) -an initiative of the League for Innovation in the Community College

[From High School to College and Career](#): Strengthening Secondary-Postsecondary Transitions Using Programs of Study Organized Around the Career Clusters. Scott Hess and Kim Green, PowerPoint presentation at May 2007 CCTI Conference

Criteria Chart: The specific criteria used in Maryland to review CTE programs are similar to those developed by Project Lead The Way (PLTW). The *Appendix to the Policies and Procedures for the Development and Continuous Improvement of CTE Programs of Study* below is used by state staff members to review programs that are under consideration for adoption or as programs are developed. While not all criteria are always met, these policies and procedures guide and inform the process to identify new Maryland CTE Programs of Study.

Yes	No	Criteria
		1. Standards-Based Curriculum
		a. Aligns to National Technical Skills Standards Source:
		b. Aligns to Academic Standards Source:
		c. Aligns to Maryland's Skills for Success Source:
		2. Curriculum Development and Dissemination
		a. Frequently updated – How Often:
		b. Provides scope and sequence.
		c. Includes Units, Lesson Plans, and Objectives.
		d. Includes worksheets and PowerPoint presentations.
		3. Oversight/Quality Assurance
		a. Operates under a signed agreement with provider.
		b. Requires a school certification process to ensure quality of program implementation.
		c. Requires a state partnership team.
		d. Requires a program advisory committee.
		4. Value-Added Opportunities
		a. Leads to advanced placement in college through articulated credit, dual enrollment, transcribed college credit, or credit by examination.
		b. Offers a valid and reliable end of course/program assessment.
		c. Leads to a certificate, license, or other industry-recognized credential. Identify:
		d. Includes work-based learning experiences or a capstone industry-mentored culminating project.
		5. Professional Development and Technical Assistance to Teachers
		a. Requires orientation and professional development to prepare teachers planning to teach. Notes:
		b. Provides technical assistance throughout program implementation. Notes:
		c. Conducts periodic refresher courses for teachers.
		6. Program Sustainability
		a. Includes cost estimates for program implementation.
		b. Identifies start up and maintenance costs for equipment.
		c. Includes estimate of annual ongoing costs for consumable materials and supplies.

Endnotes

¹ www.careerclusters.org

² "Career Clusters and Programs of Study: State of Implementation Survey" (November 2007) www.careertech.org

³ Accessed at http://www.marylandpublicschools.org/MSDE/divisions/careertech/career_technology/programs/.

⁴ See Toolkit for list of 10 clusters for Maryland

⁵ Accessed at <http://www.marylandpublicschools.org/MSDE/divisions/careertech/>

⁶ Oregon 5-Year State Plan. Accessible at www.careertech.org.

⁷ Oregon Career and Technical Education (CTE) Programs of Study Core Elements

<http://www.ode.state.or.us/teachlearn/pte/cteprogramsofstudybrief.pdf>

⁸ [Two-Minute Roundup](#), page 17 (Georgia) NASDCTEc 2008 Spring Meeting

⁹ Oregon Summary of Professional Development Taskforce Recommendations

http://www.ode.state.or.us/teachlearn/pte/profdevpolicyadvrev_4_.pdf

¹⁰ List partially paraphrased from comments made by Gary Hoachlander during CTES TRP meeting discussion on August 15, 2008. (Career/Technical Educational Statistics Technical Review Panel). Used with permission and thanks.

¹¹ Workforce Strategy Center (2006). *The Career Pathways How-To Guide*

http://www.workforcestrategy.org/publications/WSC_howto_10.16.06.pdf

¹² Green, Kimberly. [Bringing it to Scale](#) (2008 NACTEI Conference PPT presentation).



**8484 Georgia Avenue
Suite 320
Silver Spring, MD 20910
Phone: 301-588-9630**

www.careertech.org