

Minnesota Rigorous Programs of Study Guide



Revised,
4/1/15

Career and Technical Rigorous Programs of Study: A Design Framework

Overview

The Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV) calls for states to offer "career and technical programs of study," which may be adopted by local educational agencies and postsecondary institutions, as an option to students (and their parents as appropriate) when planning for and completing future coursework. These programs, at a minimum, must:

- Incorporate and align secondary and postsecondary education elements,
- Include academic and CTE content in a coordinated, non-duplicative progression of courses,
- Offer the opportunity, where appropriate, for secondary students to acquire postsecondary credits, and
- Lead to an industry-recognized credential or certificate at the postsecondary level, or an associate or baccalaureate degree.

To help states and local recipients meet these requirements, the Office of Vocational and Adult Education (OVAE), in collaboration with major national associations, organizations, and states, have formulated a "Career and Technical Programs of Study Design Framework."

- The framework identifies a system of 10 components that, taken together, support the development and implementation of effective programs of study.
 - Legislation & Policy
 - Partnerships
 - Professional Development
 - Accountability & Evaluation Systems
 - College & Career Readiness Standards
 - Course Sequences
 - Credit Transfer Agreements
 - Guidance Counseling & Academic Advisement
 - Teaching & Learning Strategies
 - Technical Skills Assessments
- Although all 10 components are important, they are neither independent nor of equal priority.
- State and local program developers should identify the most pressing components for state or local adoption, taking into consideration their relative need within their educational context.

Rigorous Programs of Study and its Role in Education Reform

Creating effective secondary/ postsecondary programs of study can be part of the solution for education reform and redesign as we strive to improve our schools, colleges, and communities. The careful orchestration of a broad stakeholder group must occur to address four major challenges in the transition from secondary to post-secondary education:

- Increasing the relevance and impact of student's education.
- Reducing the number of remediation courses taken by students upon entrance to college.
- Improving graduation rates in high school and completion rates in college.
- Actively helping students gain the skills, technical knowledge, and the rigorous academic foundation and real-world experience they need for high-skill, high-demand, high-wage careers.

The Career and Technical Programs of Study Design Framework adds value to school redesign and can assist educational leaders in this effort.

Minnesota's Career and Technical Education Programs of Study – Redesign for Success

In Minnesota, a Career and Technical Education Program of Study has followed the Perkins IV federal law defining it as a non-duplicative sequence of academic (liberal arts and sciences) and technical courses, beginning no later than grade 11 and continuing for at least two years beyond high school, culminating in a degree, diploma, or certification recognized as valuable by our business and industry partners.

In recent years, Minnesota leadership has supported and promoted OVAE's "Career and Technical Programs of Study Design Framework" - often referred to as "Rigorous Programs of Study (RPOS)".

This framework continues to be a focus at the national level as well as key points of discussion in OVAE's "Blueprint for Transformation of CTE".

- RPOS aligns with national and state education efforts encouraging systemic reform in academics/liberal arts and sciences and career and technical education.
- It guides leaders on steps to follow to enhance and strengthen CTE programs at the secondary and postsecondary levels.
- It truly supports the Minnesota consortium model as it emphasizes continued leadership and collaboration-multiple secondary high schools and college(s) working with regional business/industry partners and government agencies.

Rigorous Programs of Study – Building for Continuous Improvement

Minnesota's state leadership is grateful to the Minnesota Perkins Consortium leaders for their hard work and effort in developing and implementing Programs of Study in the state. Thanks also to all administrators, counselors/advisors, teachers/faculty, and business/industry partners who participated in the POS process. We have made significant strides in this initiative and are pleased with the progress to date.

Minnesota is ready to build on this past work focusing on Rigorous Programs of Study. Based on OVAE's Career and Technical Programs of Study Design Framework and its established components and subcomponents, the Minnesota Rigorous Program of Study Guide was written specifically for Minnesota Perkins consortium leadership to help build upon previous efforts in Programs of Study. This Guide will assist leaders in the development, implementation, and maintenance for Rigorous Programs of Study for the Consortium. Using this guide should result in:

1. creating a stronger connection among all stakeholders and
2. bringing focus to the needs of education and workforce development in the region.

The ultimate goal is to create effective Programs of Study for Minnesota students and their families as they prepare for college and careers.

Minnesota Programs of Study will now include the following types:

- **State-Approved Rigorous Program of Study for the Consortium:** Program of Study for the Consortium based on the Rigorous Programs of Study components and subcomponents, developed at the consortium level, and approved by state CTE leadership.
- **State-Approved Program of Study:** Program of Study for at least one high school and one college CTE program in a Consortium that have been approved by the state CTE leadership based on Minnesota's definition of a Program of Study.
- **Consortium-Approved Program of Study:** Program of Study for a local high school and college within and/or outside of a Consortium and approved through a process established by Consortium leadership.

Currently Minnesota leadership requires all Consortia to have at least seven state-approved Programs of Study.

Beginning with the FY15 Perkins plan, each Consortium will be required to have at least one State-Approved Rigorous Program of Study for the Consortium and at least six additional State-Approved Programs of Study.

State-Approved Rigorous Program of Study For the Consortium

A State-Approved Rigorous Program of Study for the Consortium (RPOS for the Consortium) is a Program of Study for the Consortium based on the Rigorous Programs of Study components and subcomponents, developed at the consortium level, and approved by state CTE leadership.

Development of State-Approved RPOS for the Consortium:

The State-Approved Rigorous Program of Study (RPOS) for the Consortium must meet a minimum of Level 1 in all of the ten components of the Minnesota Rigorous Programs of Study Guide.

- State-Approved RPOS for the Consortium should include a non-duplicative list of academic and state-approved CTE course(s) offered in one or more of the high schools and connected to one or more college CTE program(s) within a consortium.
- A Consortium may choose to identify the RPOS for the Consortium from its current list of State-Approved Programs of Study. If this occurs, Consortium leaders should ensure that the POS has been reviewed/revised to meet the criteria of the ten (10) components.
- Secondary CTE courses in a State-Approved RPOS for the Consortium must meet state criteria for CTE coursework established in rule or policy.

Submission for Approval and Review:

A proposed Rigorous POS for the Consortium will be submitted on the "back end" of the Mnprogramsofstudy.org system.

- Submit the RPOS for the Consortium and complete the RPOS Components Rating Form when applying for state-approval. This includes also reviewing/ revising the course sequence for the RPOS on the web site.
- The State-Approved RPOS for the Consortium will be used for accountability purposes-identifying the State-Approved RPOS for the Consortium as well as implications for concurrent enrollment aid at the secondary level under M.S. § 1240.091.
- The State-Approved RPOS for the Consortium are subject to review along with other Perkins Consortium activities as part of the Perkins accountability review cycle (i.e., Perkins annual application, review and approval and Perkins monitoring visits).
- The State-Approved RPOS for the Consortium will not be available on the public side of the website-only to those with administrative rights at the state and local level.

State-Approved Programs of Study

A State-Approved Program of Study (State-Approved POS) is a Program of Study for at least one high school and one college CTE program in a Consortium that have been approved by the state CTE leadership based on Minnesota's definition of a Program of Study.

- Currently each Minnesota Perkins Consortium must have at least seven State-Approved Program of Study (State-Approved POS).
- The term, "MASTER" POS will no longer be used to identify a State-Approved Program of Study; this term will not be used on Mnprogramsofstudy.org web site.
- At this time, State-Approved POS will not require immediate revisions or modifications; however these are subject to review along with all other Perkins Consortium activities as part of the Perkins accountability review cycle (i.e., Perkins annual application, review and approval and Perkins monitoring visits).

Consortium-Approved Programs of Study

A Consortium-Approved Program of Study is a Program of Study for a local high school and college within and/or outside of a Consortium and approved through a process established by Consortium leadership.

- No state approval or state reporting is required for Consortium-Approved POS.
- Consortium leaders will continue to work with local high schools and college(s) to develop a process for Consortium-Approved POS. Consortium leaders are encouraged to use the Minnesota Rigorous Program of Study Guide for approval purposes with local high schools/college(s) POS to strengthen local secondary and postsecondary CTE programs and follow the intent of the Perkins IV law.
- Local high schools and colleges will continue to submit their local programs of study for Consortium approval on the Mnprogramsofstudy.org web site.

Rigorous Programs of Study Timeline for Implementation and Reporting

<p>February-April, PLAN</p>	<p>Each Consortium will identify at least one Rigorous Program of Study (RPOS) for the Consortium. Leaders will begin to plan for implementation of RPOS for the Consortium using the Minnesota Rigorous Program of Study Guide.</p>
<p>May REPORT</p>	<p>Each Consortium will report the following information in the online Perkins plan:</p> <ul style="list-style-type: none"> • Name of at least one (1) Rigorous Program of Study (RPOS) for the Consortium and the state-approved technical skill assessment at the secondary and postsecondary level in the RPOS. • List of current State-Approved Programs of Study-at least six (6)-and the state-approved technical skill assessment(s) at the secondary and postsecondary level in these State-Approved POS (when applicable). Identified assessments will continue to be administered annually in at least one high school and one college program in the Consortium.
<p>Academic Year PLAN/ IMPLEMENT</p>	<p>Consortium leaders continue the planning and implementation of a RPOS for the Consortium.</p> <ul style="list-style-type: none"> • Leaders can submit applications for state-approval on MnProgramsofStudy.org; beginning date of submission will be announced later this spring or summer. • When submitting the RPOS for the Consortium for state-approval, complete the RPOS Components Rating Form. This also includes reviewing/ revising the course sequence for the RPOS on the web site.
<p>Academic Year PLAN/ IMPLEMENT</p>	<p>Assessments will be administered for each of the seven (7) State-Approved POS in at least one high school and one college program in the Consortium.</p>
<p>REPORT</p>	<p>Deadline to submit application for state-approval of RPOS for the Consortium – March 15th of each academic year.</p>
<p>May and beyond REPORT</p>	<p>Each Consortium will submit required reports for the following information in the online Perkins plan:</p> <ul style="list-style-type: none"> • At least one (1) Rigorous Program of Study for the Consortium and the state approved technical skill assessment(s) at the secondary and postsecondary level. These assessments will continue to be administered annually in at least one high school and one college program in the Consortium. • At least six (6) State-Approved Programs of Study and the state-approved technical skill assessment(s) at the secondary and postsecondary level in each State-Approved POS (when applicable). These assessments will continue to be administered annually in at least one high school and one college program in the Consortium.

Purpose of Guide

The Rigorous Programs of Study Guide is intended for use by local leaders who develop, implement, and maintain Programs of Study at their high school, college, or other education setting. This includes many stakeholders at the secondary and postsecondary level in each Consortium: Perkins Consortium leaders, administrators, teachers, faculty, guidance counselors/career placement specialists, career advisors, business/industry partners, and community leaders.

Rating for the Rigorous Program of Study (RPOS) Components

Scale:

- **Level 1:** Level 1 meets the minimal requirements to become a Minnesota State-Approved RPOS for the Consortium in a career pathway.
- **Level 2:** Additional subcomponents have been developed and implemented within a RPOS for the Consortium.
- **Level 3:** Level 3 meets all subcomponents of a RPOS for the Consortium; this level is the highest level of achievement and a goal for all Programs of Study.

Rigorous Program of Study Components Rating Form

(Complete and submit rating form on Mnprogramsstudy.org by March 15, 2014)

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

Rigorous Programs of Study Components

Ten Programs of Study Components	Level 1 Subcomponents	Level 2 Subcomponents	Level 3 Subcomponents
<p>1 Legislation and Policies</p> <p>Federal, state, and local legislation or policies that promote POS development and implementation.</p>	<p>A. Provide for state and/or local funding and other resources, such as professional development and dedicated staff time, for POS development.</p> <p>B. Establish formal procedures for the design and implementation of the POS.</p>	<p>A. Provide for state and/or local funding and other resources, such as professional development and dedicated staff time, for POS development.</p> <p>B. Establish formal procedures for the design and implementation of the POS.</p> <p>C. Ensure opportunities for secondary/postsecondary students to participate in at least one POS.</p> <p>D. Support Consortium members in the development of student graduation/career plans.</p>	<p>A. Provide for state and/or local funding and other resources, such as professional development and dedicated staff time, for POS development.</p> <p>B. Establish formal procedures for the design, implementation, and continuous improvement of POS.</p> <p>C. Ensure opportunities for secondary/postsecondary students to participate in at least one POS.</p> <p>D. Support Consortium members in the development of student graduation/career plans.</p> <p>E. Provide resources for long-term sustainability of POS.</p>

Rigorous Programs of Study Components

2 Partnerships Ongoing relationships among education, business, and other community stakeholders are central to POS design, implementation, and maintenance.	Level 1 Subcomponents	Level 2 Subcomponents	Level 3 Subcomponents
	<p>A. In the initial POS design, include secondary teachers, postsecondary faculty, representatives of business, industry and the school/ district/ college administration with expertise in the CTE program area.</p> <p>B. Conduct ongoing analysis of economic and workforce trends to identify regional POS to be created, expanded, or discontinued.</p>	<p>A. In the initial POS design, include secondary teachers, postsecondary faculty, representatives of business, industry, and the school/district/ college administration with expertise in the CTE program area.</p> <p>B. In POS implementation and ongoing maintenance, involve stakeholders in the process.</p> <p>C. Conduct ongoing analysis of economic and workforce trends to identify statewide (or regional) POS to be created, expanded, or discontinued.</p>	<p>A. Create written memoranda of understanding that elaborates the roles and responsibilities of partnership members.</p> <p>B. Conduct ongoing analysis of economic and workforce trends to identify statewide (or regional) POS to be created, expanded, or discontinued.</p> <p>C. Link into existing initiatives that promote workforce and economic development, such as sector strategies and other activities supported by the Workforce Investment Act.</p> <p>D. Identify and validate the current technical and workforce readiness skills that should be taught within a POS.</p>

Rigorous Programs of Study Components

3 Professional Development Sustained, intensive, and focused opportunities for administrators, teachers, and faculty foster POS design, implementation, and maintenance.	Level 1 Subcomponents	Level 2 Subcomponents	Level 3 Subcomponents
	<p>A. Ensure that teachers and faculty have the content knowledge to align and integrate curriculum and instruction in the career pathway.</p> <p>B. Ensure that teachers and faculty have a basic understanding of programs of study and their associated career pathways.</p> <p>C. Support and sustain professional development for administrators and teachers and faculty to foster POS design, implementation, and maintenance.</p>	<p>A. Ensure that teachers and faculty have the content knowledge to align and integrate curriculum and instruction in the career pathway.</p> <p>B. Support the development of integrated academic (liberal arts and sciences) and career and technical curriculum and instruction (horizontal curriculum alignment).</p> <p>C. Continue sustained professional development for stakeholders to foster POS design, implementation, and maintenance.</p>	<p>A. Support the alignment of curriculum from grade to grade (9-12) and from secondary to postsecondary education (vertical curriculum alignment).</p> <p>B. Support the development of integrated academic (liberal arts and sciences) and career and technical curriculum and instruction (horizontal curriculum alignment).</p> <p>C. Ensure that teachers and faculty have the content knowledge to align and integrate curriculum and instruction.</p> <p>D. Foster innovative teaching and learning strategies (see# 9 below).</p>

Rigorous Programs of Study Components

4 Accountability and Evaluation Systems	Level 1 Subcomponents	Level 2 Subcomponents	Level 3 Subcomponents
<p>Systems and strategies to gather quantitative and qualitative data on both POS components and student outcomes are crucial for ongoing efforts to develop and implement POS.</p>	<p>A. Establish and communicate state reporting requirements for program of study data including completion, retention, placement, and technical skill assessment data for colleges and secondary schools in the Consortium.</p> <p>B. Yield valid and reliable data on key student outcomes (indicators) referenced in Perkins and other relevant federal and state legislation.</p>	<p>A. Ensure state reporting requirements for program of study data including completion, retention, placement, and technical skill assessment data for colleges and secondary schools in the Consortium.</p> <p>B. Yield valid and reliable data on key student outcomes (indicators) referenced in Perkins and other relevant federal and state legislation.</p> <p>C. Provide timely data to evaluate and improve the effectiveness of POS.</p>	<p>A. Review the "10 Essential Elements of A State Longitudinal Data System" identified by the Data Quality Campaign.</p> <p>B. Provide for administrative record matching of student education and employment data (e.g., Unemployment Insurance (UI) wage records).</p> <p>C. Yield valid and reliable data on key student outcomes (indicators) referenced in Perkins and other relevant federal and state legislation.</p> <p>D. Provide timely data to evaluate and improve the effectiveness of POS.</p>

Rigorous Programs of Study Components

5 College and Career Readiness Standards	Level 1 Subcomponents	Level 2 Subcomponents	Level 3 Subcomponents
<p>Content standards that define what students are expected to know and be able to do to enter and advance in college and/or their careers comprise the foundation of a POS.</p>	<p>A. Develop minimal content standards for POS in collaboration with secondary, postsecondary, and business/industry partners.</p> <p>B. Identify essential knowledge and skills (e.g., academic skills, communication, and problem-solving), which students must master regardless of their chosen career area or POS.</p> <p>C. Identify industry-recognized technical standards that are valued in the workplace.</p> <p>D. Includes at least one secondary CTE pathway specific course and one CTE pathway specific program in the POS.</p>	<p>A. Develop and validate content standards in collaboration with secondary, postsecondary, and business/industry partners.</p> <p>B. Incorporate essential knowledge and skills (e.g., academic skills, communication, and problem-solving), which students must master regardless of their chosen career area or POS.</p> <p>C. Incorporate industry-recognized technical standards that are valued in the workplace.</p> <p>D. Includes at least one secondary CTE pathway specific course and one CTE pathway specific program in the POS.</p>	<p>A. Be developed and continually validated in collaboration with secondary, postsecondary, and industry partners.</p> <p>B. Incorporate essential knowledge and skills (e.g., academic skills, communication, and problem-solving), which students must master regardless of their chosen career area or POS.</p> <p>C. Provide the same rigorous knowledge and skills in English and mathematics (liberal arts and sciences) that employers expect of high school and college graduates.</p> <p>D. Incorporate industry-recognized technical standards that are valued in the workplace.</p> <p>E. To the extent practicable, be internationally benchmarked so that all students are prepared to succeed in a global economy.</p> <p>F. Two or more secondary CTE pathway specific courses, at least one college pathway program, and some type of college credit available ; appropriate student organizations is a bonus.</p>

Rigorous Programs of Study Components

<p>6 Course Sequences</p>	<p>Level 1 Subcomponents</p>	<p>Level 2 Subcomponents</p>	<p>Level 3 Subcomponents</p>
<p>Non-duplicative sequences of secondary and postsecondary courses within a POS ensure that students transition to postsecondary education without duplicating classes or requiring remedial coursework.</p>	<p>A. Map out recommended and non-duplicative academic (liberal arts and sciences) and career and technical courses in each POS.</p> <p>B. Begin with introductory CTE courses at the secondary level that deliver knowledge and skills common to the POS pathway.</p> <p>C. Progress to occupationally-specific courses at the postsecondary level that provide knowledge and skills required for entry into and advancement in a chosen POS</p> <p>D. Meet at least the requirements of "Career Introduction" (i.e., Includes one secondary CTE pathway specific course(s) in the POS.)</p>	<p>A. Map out the recommended and non-duplicative academic (liberal arts and sciences) and career and technical courses in each POS.</p> <p>B. Begin with introductory and continue with advanced CTE courses at the secondary level that deliver knowledge and skills common to the POS pathway.</p> <p>C. Progress to occupationally-specific courses at the postsecondary level that provide knowledge and skills required for entry into and advancement in a chosen POS</p> <p>D. Explore opportunities for students to earn postsecondary credit for coursework taken during high school.</p> <p>E. Meet at least the requirements of "Career Introduction" (i.e., includes one secondary CTE pathway specific course(s) in the POS.)</p>	<p>A. Map out the recommended academic (liberal arts and sciences) and career and technical courses in each POS.</p> <p>B. Begin with introductory courses at the secondary level that teach broad foundation knowledge and skills that are common across all POS.</p> <p>C. Progress with occupationally-specific courses at the postsecondary level that provide knowledge and skills required for entry into the pathway and advancement in a chosen POS.</p> <p>D. Offer opportunities for students to earn postsecondary credit through coursework taken during high school.</p> <p>E. Satisfy the "Program of Study" level (i.e., two or more secondary CTE pathway specific courses and some type of college credit available -appropriate student organizations is a bonus).</p>

Rigorous Programs of Study Components

7 Credit Transfer Agreements	Level 1 Subcomponents	Level 2 Subcomponents	Level 3 Subcomponents
<p>Credit transfer agreements provide opportunities for secondary students to be awarded transcribed postsecondary credit, supported with formal agreements among secondary and postsecondary education systems.</p>	<p>A. Begin discussions on transcribed credit among secondary and postsecondary partners in POS.</p> <p>B. Identify existing opportunities for secondary students that award postsecondary transcribed credits in the POS pathway.</p> <p>C. Identify existing opportunities for postsecondary students that award transfer credits earned in a two year college to any other two or four year institution in the state that offers the POS pathway.</p>	<p>A. Process is in place for transcribed college credit in POS.</p> <p>B. Develop opportunities for secondary students to be awarded postsecondary transcribed credits in the POS pathway.</p> <p>C. Implement opportunities for postsecondary students that award transfer credits earned in a two year college to any other two or four year institution in the state that offers the POS pathway.</p>	<p>A. Provide a systematic, seamless process for students to earn college credit for postsecondary courses taken in high school, transfer high school credit to any two- and four-year institution in the state that offers the POS, and transfer credit earned at a two-year college to any other two- or four-year institution in the state that offers the POS.</p> <p>B. College credit should be automatically transcribed at the college for high school students so they can transfer seamlessly into the postsecondary portion of a POS without the need for additional paperwork or petitioning for credit.</p> <p>C. Describe the expectations and requirements for, at a minimum, teacher and faculty qualifications, course prerequisites, postsecondary entry requirements, location of courses, tuition reimbursement, and credit transfer process.</p>

Rigorous Programs of Study Components

8 Guidance Counseling and Academic Advisement	Level 1 Subcomponents	Level 2 Subcomponents	Level 3 Subcomponents
<p>Guidance counseling and academic advisement help students to make informed decisions about which POS to pursue.</p>	<p>A. Ensure that guidance, counseling, and advisement professionals have access to up-to-date information about POS offerings to aid students in their decision making.</p> <p>B. Offer resources for students to identify their career interests and aptitudes and to select appropriate POS.</p>	<p>A. Offer information and tools to help students learn about postsecondary education and career options, including prerequisites for particular POS.</p> <p>B. Offer information and tools to help students learn about postsecondary education and career options, including prerequisites for particular POS.</p> <p>C. Offer resources for students to identify their career interests and aptitudes and to select appropriate POS.</p> <p>D. Provide information and resources for parents to help their children prepare for college and careers, including workshops on college and financial aid applications.</p>	<p>A. Are based on state and/or local guidance and counseling standards, such as the National Career Development Guidelines.</p> <p>B. Ensure that guidance, counseling, and advisement professionals have access to up-to-date information about POS offerings to aid students in their decision making.</p> <p>C. Offer information and tools to help students learn about postsecondary education and career options, including prerequisites for particular POS.</p> <p>D. Offer resources for students to identify their career interests and aptitudes and to select appropriate POS.</p> <p>E. Provide information and resources for parents to help their children prepare for college and careers, including workshops on college and financial aid applications.</p> <p>F. Offer Web-based resources and tools for obtaining student financial assistance.</p>

Rigorous Programs of Study Components

9 Teaching and Learning Strategies Innovative and creative instructional approaches enable teachers to integrate academic and technical instruction and students to apply academic and technical learning in their POS coursework.	Level 1 Subcomponents	Level 2 Subcomponents	Level 1 Subcomponents
	<p>A. Employ contextualized work-based, project-based, and problem-based learning approaches.</p> <p>B. Identify and analyze alignment with program curriculum and Minnesota Core Competencies in the specific career pathway. See Minnesota Technical Skill Assessment website- www.cte.mnscu.edu</p> <p>C. Support instructors in the design of integrated coursework by administrative staff and with appropriate resources (e.g. STEM, Math in CTE, PLTW).</p>	<p>A. Employ contextualized work-based, project-based, and problem-based learning approaches.</p> <p>B. Analyze program curriculum and Minnesota Core Competencies in the specific career pathway. See Minnesota Technical Skill Assessment website- www.cte.mnscu.edu</p> <p>C. Support instructors in the design of integrated coursework by administrative staff and with appropriate resources (e.g. STEM, Math in CTE, PLTW).</p> <p>D. Incorporate team-building, critical thinking, problem-solving, and communication skills in curricular, co-curricular, and extracurricular such as through the use of career and technical student organizations (CTSO) activities.</p>	<p>A. Be jointly guided by interdisciplinary teaching teams of academic (liberal arts and sciences) and career and technical teachers or faculty. Refer to Minnesota Core Competencies in the specific career pathway. See Minnesota Technical Skill Assessment website- www.cte.mnscu.edu</p> <p>B. Employ contextualized work-based, project-based, and problem-based learning approaches.</p> <p>C. Incorporate team-building, critical thinking, problem-solving, communications skills in curricular, co-curricular, and extracurricular activities such as through the use of career and technical student organizations (CTSO) activities.</p>

Rigorous Programs of Study Components

10 Technical Skills Assessments	Level 1 Subcomponents	Level 2 Subcomponents	Level 3 Subcomponents
<p>National, state, and/or local assessments provide ongoing information on the extent to which students are attaining the necessary knowledge and skills for entry into and advancement in postsecondary education and careers in their chosen POS.</p>	<p>A. Select and implement state-approved technical skill assessments in a minimum of one high school and one college program in the POS.</p> <p>B. Technical skill assessment performance results are reported to the teacher/faculty for instructional improvement.</p>	<p>A. Measure student attainment of technical skill proficiencies at multiple points during a POS.</p> <p>B. Technical skill assessment performance results are reported to the teacher/faculty for instructional improvement.</p> <p>C. Explore credit options through technical skill attainment in postsecondary education and careers in the chosen pathway.</p>	<p>A. Measure student attainment of technical skill proficiencies at multiple points during a POS.</p> <p>B. Ensure advancement in postsecondary education and careers in the chosen pathway.</p> <p>C. Employ industry-approved technical skill assessments based on industry standards, where available and appropriate.</p> <p>D. Employ State-developed and/or approved assessments, particularly where industry-approved assessments do not exist.</p> <p>E. Result in the awarding of secondary credit, postsecondary credit, or a special designation on a student's high school diploma.</p> <p>F. To the greatest extent possible, incorporate performance-based assessment items where students must demonstrate the application of their knowledge and skills.</p>

"The 10 elements are: (1) statewide student identifier; (2) student-level enrollment data; (3) student-level test data; (4) information on untested students; (5) statewide teacher identifier with a teacher-student match; (6) student-level course completion (transcript) data; (7) student-level SAT, ACT, and Advanced Placement exam data; (8) student-level graduation and dropout data; (9) ability to match student-level P-12 and higher education data; and (10) a state data audit system.

" See http://jcte.ed.gov/acm!ncdgjncdg_what.htm.

ACKNOWLEDGEMENTS

Thanks to the Perkins Consortium Leaders who served on the Rigorous Program of Study Stakeholders Input Committee this winter. Their feedback and guidance brought clarity and relevance to our work. They reviewed multiple drafts of this guide before the final document was completed. We appreciated their time and effort on this initiative as well as their strong commitment to Career and Technical Education in Minnesota.

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