

PROGRAMS OF STUDY – UPDATE
Spring 2012

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Background

In June 2011 the Board adopted a recommendation to develop statewide articulated Programs of Study in four strategic industry clusters: Aerospace/Manufacturing, Agriculture, Information Technology, and Healthcare.

These Programs of Study are intended to meet requirements of the Carl D. Perkins Career and Technical Education Act of 2007, providing students with meaningful career pathways, combining secondary and postsecondary education in a rigorous, integrated, and streamlined sequence of courses that leads to further education, apprenticeship, certification, diploma, and/or employment.

Development of these four projects has been a partnership effort among staff from the Workforce Training and Education Coordinating Board; Office of Superintendent of Public Instruction (OSPI) Career and Technical Education Division; State Board for Community and Technical Colleges (SBCTC); and four Centers of Excellence. Each project is spearheaded by co-team leaders—an OSPI Program Supervisor and a Director of the related Center of Excellence (SBCTC)—from the specific program area.

The teams were brought together in September to meet each other, to get an overview of the project and the expected outcomes, and to begin the preliminary discussions. Two of the projects had developed a strong foundation from previous work and through Tech Prep articulations (aerospace/manufacturing and information technology). Both the Allied Health Center of Excellence and the Agriculture Center of Excellence have fairly new directors.

Each of these four Programs of Study has used different tactics, and while not yet in the final stage, three of the four have made significant strides in moving toward the vision of offering a program at the high schools and skills centers that will allow a student to transition to the postsecondary portion of the Program of Study, offering advanced placement upon evidence of competency completions.

Programs of Study – Update

Aerospace and Manufacturing

Team leads: Mary Kaye Bredeson, Director of the Center of Excellence for Aerospace and Advanced Materials Manufacturing at Everett Community College; Dennis Wallace, Program Supervisor at the Office of Superintendent of Public Instruction

Program Focus

This Program of Study includes multiple entry and exit points between education and training. Many entry-level jobs in aerospace and manufacturing can be accessed with a two-year program at a comprehensive high school or one year at a skill center. The Program of Study also provides entry and exit points that allow a student to move toward a two-year degree and onto a four-year advanced degree.

Aerospace and manufacturing careers are introduced through awareness studies during K-6, and 7-9th graders can begin a program of study through career and technical exploratory programs. Students in grades 10-12th can move into preparatory programs, which lead to direct entry into employment or advanced training. Advanced training can be through certificate programs at community or technical colleges, as well as apprenticeship programs.

Core+ Curriculum

Working with the Boeing Aerospace Academic Alignment team the Program of Study team has adopted their core manufacturing curriculum (much of which is online) and developed a Core+ curriculum that will be utilized by the state's skills centers. These core competencies are based on entry-level employment knowledge, skills and abilities needed for the aerospace assembler employment track. This hands-on core curriculum utilizes about 300 hours of the 540 hours in a skill center program. This allows the + (plus) portion of the curriculum to be dedicated to the needs of the regional business and industry (suppliers), generally in such areas as: welding, machining, composites, electronics, quality assurance, hydraulic systems, manufacturing tooling, and workforce readiness skill development.

Next Steps

Yakima Valley Technical Skills Center (YV-Tech) implemented the Core+ curriculum in the fall of 2011. The efforts evolved to include sharing facilities and an instructor with Yakima Valley Community College with their first class operating in the spring of 2012. Sno-Isle and Seattle Skills Centers are scheduled to offer this curriculum in the fall of 2012.

OSPI is gathering baseline data from manufacturing programs at five comprehensive high schools where students are being assessed in three areas for the Work Readiness Credential: applied math, reading for information, and locating information. The results to-date are receiving positive reviews from the aerospace and manufacturing businesses. In conjunction with this project, Spokane schools have partnered with the local Workforce Development Council to offer the three assessments for their manufacturing students. Based on diagnostics of the results, the Spokane schools will institute a dedicated effort to improve instruction, and then will retest for measured growth. The results of these projects will be closely monitored and may provide the impetus for replication across the state for secondary manufacturing Programs of Study.

Recently the Center of Excellence entered into an agreement with ToolingU.com to offer 300 high school students the opportunity to access an online training curriculum for theory components for machining, maintenance, and welding training. The agreement also provides a 30 percent discount on site licenses at community and technical colleges for the postsecondary curriculum. High school students completing a ToolingU curriculum will have the opportunity for advanced placement at colleges offering this curriculum, which leads to national certifications.

Agriculture – Animal Systems

Team Leads: Tony Dunnagan, Director of the Agriculture Center of Excellence at Walla Walla Community College and Wayne Gilman, Program Supervisor at the Office of Superintendent of Public Instruction

Program Focus

Certifications can provide a basis for articulated Programs of Study in many of the career clusters and pathways. While there are states working toward this for agriculture programs, no standardized assessments are currently being accepted and used throughout the agriculture pathways.

At the onset of this project, the team determined that skills and knowledge assessments are imperative as the basis of statewide articulation. Through the research phase, it was determined that an outside company should maintain and administer the tests. The next steps include compilation of the test questions from high schools and community colleges and validation of the questions.

Assessments

The pilot Animal Systems Program of Study will have a two-part assessment: an online, randomized knowledge and skills assessment and a hands-on assessment. The online assessment will be proctored at the student's high school for those who have completed (at a minimum) two exploratory courses, and who wish to receive the certificate for skills attainment. Students may complete the hands-on portion of the assessment at either an approved FFA Career Development Event, or through the Agriculture Center of Excellence, which will offer this testing up to five times a year. The Center of Excellence will issue a certificate to the school as well as the student upon successful completion of both sections of the assessment. When the student enrolls in the program at the postsecondary institution, the certificate will be the basis for the award of dual credit/advanced placement in the college program. If the college does not offer the same agriculture program, the credit will be accepted as an elective credit in another agriculture program.

Next Steps

The goal is to have the assessments ready by fall 2012 for the Program of Study for animal systems, and then begin the same process for a Program of Study in plant systems.

The team has begun conversations with Washington State University to discuss articulation between the community colleges and the university.

Information Technology – Programming and Software Development (Application Development and Software Engineering)

Team Leads: Maureen Majury, Director of the Center of Excellence for Information and Computing Technology at Bellevue College and Venetia Willis-Holbrook, Program Supervisor at the Office of Superintendent of Public Instruction

The Center of Excellence was involved in the development of earlier IT Programs of Study. That work has provided the basis for the statewide, articulated Program of Study in programming and software development.

Curriculum Validation

Industry employers were convened to validate the skills and knowledge competencies and outcomes, included in the Programs of Study, based on the Northwest Center for Emerging Technology (NWCET) standards. This group recommended that any rigorous program of study in computer science include a college preparatory focus, including four years of high school mathematics and science. The representatives emphasized the fact that the industry demand is for high skilled graduates with degrees.

In mid-May the team leaders convened a cross-team of K-12, government, and postsecondary partners to begin the articulation discussion. During that meeting, team members recommended that the focus be narrowed to the Computer Programming pathway for this initial statewide articulated Program of Study. This pathway leads to a Computer Science degree, so articulation agreements will include both high schools-to-two-year colleges as well as two-year colleges-to-four-year institutions. The team will begin the articulation discussions at the postsecondary level in July 2012, and then follow up with the cross-team on August 8.

Next Steps

The IT Center of Excellence has been working on an interactive website for students interested in exploring or pursuing an IT Program of Study. This tool will provide career exploration focused on these students. As the website work progresses, 140 students will be invited to test the site, which will be released for comment to the cross-group and others in July and demonstrated during summer conference in August.

Allied Health – Occupational Therapy and Physical Therapy Programs of Study

Team Leads: Dan Ferguson, Director of the Allied Health Center of Excellence at Yakima Valley Community College and a program supervisor (*recently vacated*) at the Office of Superintendent of Public Instruction

This Program of Study is still in the preliminary stage, due to changes in personnel at the Center of Excellence as well as in the Office of Superintendent of Public Instruction. As a new K-12 program supervisor is brought on-board, we anticipate ongoing development during 2012-13.

The focus of this Program of Study will be the Occupational Therapy Assistant (OTA) and Physical Therapy Assistant (PTA) programs. There are several high schools and skills centers that offer allied health courses that can articulate into programs at the community and technical colleges. The Center of Excellence has contacted several colleges that offer OTA/PTA programs to determine where there is overlap among the courses within these programs, and has compiled a list and description of the programs' prerequisites and courses for each college program, looking for similarities.

OSPI staff was tasked to develop a list of the courses that make up the K-12 portion of the Program of Study, and to determine which high schools and skills centers offer the exploratory and preparatory courses that will be the secondary portion of the program of study. Articulated Tech Prep courses will provide the basis for some of the articulation work that will need to be done among the education providers.

Next Steps

Staff from the three state agencies are working closely with this Program of Study team to provide assistance and direction. As this Program of Study develops, industry sector representatives will be convened to assure that curriculum content will provide students with the basic skills and knowledge to successfully enter the workplace following program completion.

Program of Study – The Challenges Ahead

- **Course Articulation versus Statewide Articulation**

In the past, Tech Prep articulation was done on a course-to-course, high school-to-college basis, built on a mutual trust relationship. The statewide Programs of Study are being designed to articulate between high schools offering the program, and the community or technical colleges where the program/pathway is being offered. This requires buy-in of the process and consensus of the solid evidence that supports the students' articulation into the college programs, demonstrating attainment of the requisite skills and knowledge as a condition for the award of college credit. This process necessitates a high degree of administrative and faculty commitment and significant financial support.

- **Funding**

Several factors will determine the costs associated with development of each Program of Study, including:

- ✓ How many high schools and colleges are offering the program?
- ✓ Are there nationally recognized third-party assessments for the programs or will they need to be developed?
- ✓ What are the costs associated with access, delivery, and analysis of such assessment?
- ✓ How will consensus among educators be garnered?
- ✓ What resources are available to help keep projects moving forward? How will the leads for these projects have their associated costs covered?

- **Selecting Additional Programs of Study**

The outcome of this project is to develop four models that can be replicated into other statewide articulated Programs of Study. Guidelines should be established to determine which programs should be undertaken in future phases.