

Scaling "Stackable Credentials"

Implications for Implementation and Policy

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Multiple factors are driving interest in stackable credentials

Postsecondary education and credentials are key to economic mobility for individuals and economic competitiveness for our nation. Although the economic return to credentials varies significantly by field of study, generally workers with higher levels of education have higher wages, work more hours, and suffer lower rates and shorter durations of unemployment.ⁱ Recent data indicates that professional certifications, licenses, and educational certificates have labor market value, especially for people without a bachelor's degree and people with professional degrees.ⁱⁱ

Workers with required knowledge, skills, and abilities are more productive and adaptable in a volatile, highly competitive economy.ⁱⁱⁱ As routine jobs are giving way to work environments necessitating higher-order communication and analytical skills, employers are requiring existing workers to upgrade their skills to stay employed. They are also using educational and occupational credentials in the hiring process to find the most qualified workers and as a screen for adaptability and trainability.

Motivated by this reality, a more diverse group of people is seeking postsecondary credentials to secure a foothold in the labor market, keep their existing jobs, and advance to better jobs in the continually changing economy. This growing number of "nontraditional students"—including returning veterans; dislocated workers; and youth and adults with limited education, English, skills, or work experience—often have family and work responsibilities that cause them to stop out of school and fail to return to complete credentials.

Driven by economic mobility and competitiveness concerns, policy leaders at all levels are setting goals for increasing postsecondary credential attainment. In 2009, President Obama challenged all Americans to commit to at least one year of postsecondary training or education and set a national goal of 5 million community college graduates with associate degrees or certificates by 2020. America's governors are also setting specific goals for credential attainment and elevating the message that "a relevant workforce certification or postsecondary degree is the 'New Minimum' to access the middle-class and beyond."^{iv} For example, Oregon has set a goal that "by 2025, 40 percent of Oregonians will earn a four-year degree, 40 percent will achieve a postsecondary certificate or

DEFINING CREDENTIALS

Credentials include: degrees; diplomas; credit-bearing, noncredit, and work readiness certificates; badges; professional/ industry certifications; apprenticeships; and licenses—all of which in different ways testify to people's skills, knowledge, and abilities. (See Appendix I for a discussion of these credentials.)

associate's degree, and the remaining 20 percent will earn a high school diploma or equivalent and be ready to enter the workforce.”^v

Policymakers are increasingly holding postsecondary education systems accountable for improving students' educational and employment outcomes. The Obama Administration is calling for increased transparency regarding student completion, the cost of education, and likely economic returns to people of investing in education. In addition, it is proposing to hold postsecondary educational institutions that offer nondegree credentials to stricter federal financial aid rules regarding what constitutes gainful employment.^{vi} States are also actively engaged in moving toward performance-based funding for higher education that rewards colleges for improving the rate at which students complete college and attain marketable credentials.

Another driver of interest in stackable credentials is that policymakers are seeking ways to document the skills veterans learned during military service to help them reintegrate into the domestic workforce. They are also looking for ways to help dislocated workers transition from one line of work to another and create pathways to family-sustaining employment for low-skill and disadvantaged youth and adults. In 2010, Congress authorized the U.S. Department of Labor to invest \$2 billion in discretionary funding through the Trade Adjustment Assistance Community College and Career Training Grants Program (TAACCCT) to drive innovation and the development of model training programs at America's community colleges and universities. The goals of the investment are to better prepare large numbers of unemployed or under-employed adults for employment in high-wage, high-skill occupations and to increase the number of workers who attain certificates, degrees, and other industry-recognized credentials and help meet President Obama's college graduation goal. Some of the reforms discussed in this paper are being supported by these funds.

To meet accountability standards and achieve better outcomes with this diverse population, community and technical colleges are reforming policies and changing institutional practices to address barriers that have impeded people's ability to persist in education and obtain marketable credentials.

Defining stackable credentials

This paper focuses on one particular innovation: “stackable credentials.” Since this is still an emerging field of practice, there is yet no standard definition of stackable credentials. However, the definition articulated by the U.S. Department of Labor reflects a common understanding of this approach. It defines a stackable credential as one that is “part of a sequence of credentials that can be accumulated over time to build up an individual's qualifications and help them to move along a career pathway or up a career ladder to different and potentially higher-paying jobs.” As discussed in this paper, states and colleges are achieving stackability in a variety of ways to optimize credential attainment and build multiple on and off ramps to postsecondary credentials for people as they prepare to enter the workforce, aim to upgrade their skills to keep a job, advance to a better job, or move from one field of work to another.

About the paper

The analysis and examples in this paper are based on interviews with state officials in Kentucky, Oregon, Virginia, and Wisconsin and staff from select community and technical colleges in these states—all of which are participants the Center for Law and Social Policy's Alliance for Quality Career Pathways (AQCP), a state-driven initiative funded by the Joyce and Irvine Foundations.^{vii} Stackable credentials are a core feature of emerging state and local career pathway systems. These systems are intended to connect progressive levels of education, training, and

supportive services in specific sectors or cross-sector occupations in a way that optimizes the progress and success of individuals with diverse abilities and needs in securing marketable credentials, family-supporting employment, and further education and employment opportunities. Career pathways help employers meet their workforce needs and help states and communities strengthen their workforces and economies.^{viii} This paper, written with support from the Lumina Foundation, also draws on best practices and challenges in developing stackable credentials identified during four industry panel discussions convened by CLASP and the Corporation for a Skilled Workforce. Those discussions were also made possible by the Lumina Foundation's support.

The states and colleges highlighted in this paper are not intended to be representative of all states or colleges. There are many cutting-edge reforms related to stackable credentials taking place in other states and colleges. Nevertheless, this study provides a window into developments in a number of diverse states, as well as emerging approaches to stacking credentials and associated implementation challenges.

Moving the concept of stackable credentials to reality on the ground

The U.S. has a widely varied education and training system that provides multiple routes to educational and career advancement for people with diverse needs and interests and a multi-layered marketplace of credentials that are offered by a wide variety of educational institutions and credentialing organizations. The types of credentials our "system" offers include:

- Educational credentials awarded by accredited educational institutions for completion of credit-bearing courses;
- Noncredit certificates awarded for course completion by educational institutions, professional associations, community-based organizations, and other accredited and non-accredited organizations;
- Apprenticeship-related credentials governed by labor-management partnerships;
- Certifications awarded by industry and professional associations;
- Licenses to practice awarded by states; and
- Myriad other credentials, including the GED and career readiness certificates offered by public and community-based workforce and youth development organizations.

Each type of credential uses its own terminology to describe the knowledge, skills and abilities people must possess to complete a course or program of study and perform a job. Each operates under its own assessment methods and standards and uses different quality assurance mechanisms for the award of credentials.

While the dynamism in educational options and credentials creates many new options, it also results in too many dead ends for people as they try—and often fail—to navigate through this complex system. People have trouble moving from noncredit occupational training, which makes up more than half of postsecondary enrollments,^{ix} to credit-bearing programs and from short-term certificate programs that may help them gain a foothold in the labor market to longer-term degree programs that generally have a higher economic payoff. When experienced workers return to the education system to learn new skills, either to advance in their current field or switch to another field, they have trouble earning credit within the educational system for knowledge and skills they have gained at work through formal training and/or informally through work experience. Students, who have to stop out of postsecondary education because of life circumstances, are often forced to start over when they return to continue their studies.

STRATEGIES TO CREATE STACKABLE CREDENTIALS

The states and colleges highlighted in this paper are pursuing the following five strategies to create stackable credentials to help students, workers, and job seekers overcome these disconnects:

MODULARIZE EXISTING APPLIED ASSOCIATE DEGREE AND TECHNICAL DIPLOMA PROGRAMS.

Kentucky, Oregon, and Wisconsin are modularizing existing associate degrees and courses into shorter-term certificate programs and modules to create manageable stepping stones to good jobs, further education, and career advancement.

Oregon's community college system and Wisconsin's technical college system are creating short-term, "embedded" credit-bearing credentials. These credentials help students gain the competencies they need to qualify for entry-level employment, as well as earn stackable credentials and credits they can use if they choose to continue their education and achieve the next credential. These embedded short-term credentials are part of a stack that lead to a higher-level educational credential, making them potentially more valuable to students than noncredit courses or stand-alone short-term certificates, which are associated with lower earnings than longer-term credentials. Further, since these short-term programs are "embedded" in longer-term programs that are eligible for federal student financial aid, qualifying students can access aid while earning the shorter-term credential that will lead to a higher credential in the long term.^x

Kentucky has a long-standing policy that allows colleges to award fractional credit for most of its educational offerings. It is currently using this flexibility to modularize both classroom-based and online occupational programs that are in high demand in the labor market. In addition to representing knowledge and skills in demand in the labor market, each module also has to be made up of a discreet bundle of knowledge and skills that makes sense pedagogically and is linked to pre- and post-tests, creating a self-paced program based on mastery of competencies.

EMBED EXISTING INDUSTRY AND PROFESSIONAL CERTIFICATIONS IN CAREER AND TECHNICAL PROGRAMS.

Embedding certifications in existing certificate, Technical Diploma, and Applied Associate Degree programs allows students to obtain marketable industry and educational credentials simultaneously. A good example of this strategy is Milwaukee Area Technical College's Information Technology program, which is described below. Programs with embedded certifications are often implemented in partnership with the relevant certification body, which may provide industry validated skill standards and curricula that are aligned with the certification requirements.

This practice is particularly useful in fields in which certain certifications are commonly sought by employers in the hiring process and for keeping career and technical curricula up to date in rapidly changing occupational fields such as health care, manufacturing, and information technology (IT). However, in some industries, there is less agreement among local employers regarding which national certifications they use in their hiring and promotion processes. The question, then, becomes whether or not to tie curricula to the skill standards underlying a specific certification. Also, college policies differ in whether they will integrate only vendor-neutral certifications, such as the CompTIA certifications^{xi} in IT, or also vendor-specific ones, such as Microsoft certifications, into their programs. They also differ on whether the cost of taking the certification exam is included in the course fees.

STREAMLINE AND SCALE PROCESSES FOR AWARDING CREDIT FOR LEARNING REPRESENTED BY NON-COLLEGIATE CREDENTIALS.

Each of the states studied is encouraging greater use of assessment of prior learning processes by colleges as well promoting greater consistency among colleges in the amount of credit given for learning represented by certifications and other non-collegiate credentials. The assessment of prior learning is receiving renewed attention as policymakers and practitioners seek ways to increase college completion rates by attracting adults with some college credit but no credential. The assessment of prior learning also is seen as a useful strategy to reintegrate veterans and reemploy dislocated workers in the domestic workforce, because it enables them to obtain educational credit for skills learned during military service and other previous work experience.

ASSESSING NON-COLLEGIATE LEARNING

There are many approaches to assessing non-collegiate learning, including institutional use of: various types of examinations, such as the College-Level Examination Program (CLEP) operated by the College Board; credit recommendations made by the American Council on Education (ACE) and other organizations based on their assessment of non-collegiate learning; crosswalks between industry and professional certifications, developed either internally by colleges or on a state-wide basis, that can be used by students and educators to determine equivalencies; and portfolio assessment. Portfolio assessment usually relies on faculty committees in individual institutions or external organizations (e.g. the Council for Adult and Experiential Learning's (CAEL) Prior Learning Assessment (PLA) program) to assess how the specific experiences and credentials documented in a student's portfolio match up with the learning outcomes of a specific course. External organizations (e.g. ACE and CAEL) may be used by colleges that don't offer their own process for assessing prior learning or those that want to leverage specialized expertise in areas where they lack the resources to work directly with training providers. In addition employers and training providers other than colleges seek credit recommendations for their programs from ACE. However, since the assessment of prior learning is largely faculty and institution based, there are no common descriptors of the credentials being evaluated and no common standards upon which to base decisions about the amount of credit to be awarded. As a result, decisions about the awarding of credit are often inconsistent from one institution and program to another.

CREATE "LATTICE CREDENTIALS" THAT ALLOW STUDENTS TO MOVE BOTH UP A CAREER LADDER WITHIN AN OCCUPATIONAL FIELD OR ACROSS MULTIPLE PATHWAYS IN A CAREER LATTICE.

States and colleges are creating foundational "lattice" certificates that students can use as launch pads for multiple pathways in related occupational fields. The Basic Health Care certificate program created by Rogue Community College in Oregon is an example of this strategy. These credentials provide students with basic knowledge and skills to qualify for entry-level employment in a field of study and the basis for subsequent specialization along different career paths within that industry. Some of these foundational certificate programs are designed to help high school students and others exploring career options get an exposure to a career field before committing to an extended course of study in that field. Programs leading to latticed credentials tend to be interdisciplinary in nature and therefore cross course numbering conventions and other boundaries of discipline-based programs of study.

A number of these programs have incorporated foundational credentials into their stackable credentialing systems. Programs for targeted populations such as dislocated workers and ex-offenders funded through the federal Workforce Investment Act sometimes include the ACT National Career Readiness Credential (NCRC), which combines measures of cognitive skills and work-related behaviors to predict individuals' success at work or in training.

CREATE DUAL ENROLLMENT OPTIONS THAT ENABLE STUDENTS TO WORK CONCURRENTLY TOWARD A HIGH SCHOOL DIPLOMA OR ITS EQUIVALENCY, MARKETABLE POSTSECONDARY CREDENTIALS, AND INDUSTRY CERTIFICATIONS.

Dual enrollment strategies provide important on-ramps to postsecondary education from high school, adult education, and job training programs. This involves articulation between k-12, adult education, and postsecondary education systems, including alignment of curriculum with common core educational standards. A discussion of the issues involved in implementing these programs is largely beyond the scope of this paper. However, two examples of this approach from Virginia are highlighted below.^{xii}

As this paper will illustrate, these strategies are not mutually exclusive and colleges are combining them in various ways to meet different student needs.

STATE AND INSTITUTIONAL POLICY CONTEXT FOR STACKABLE CREDENTIALS

The reforms being implemented by colleges are influenced by differences in governance and the state policy context within which they operate. For example, the Postsecondary Act of 1997 created the Kentucky Community and Technical College System (KCTCS), while community and technical colleges in Oregon, Wisconsin, and Virginia operate separately. Kentucky and Virginia are centralized systems, while Oregon and Wisconsin are more decentralized, shared governance systems. The reforms discussed below are taking place within the policy jurisdiction of Kentucky's community and technical college system, Oregon's and Virginia's community college systems, and Wisconsin's technical college system.

Because of differences in statutory authority and governance arrangements in the states studied, creating stackable credentials involves using different combinations of soft leadership strategies to persuade and build consensus for change and more direct policy and funding guidance. For example, in Wisconsin, 10 percent of general funding to support technical colleges in 2014-2015 will be contingent on achievement of 7 of 9 performance criteria that colleges select to be measured on. The percentage of funding will increase each year up to 30 percent of general funding in 2016-2017. Soft leadership strategies, including the provision of technical assistance, are being led by the state in some cases and by leading colleges in others.

The states are also starting from a different base in the award of certificate level credentials. Community and technical colleges in Kentucky and Wisconsin dominate the certificate marketplace and produce more than twice as many certificates per population than the national average (Kentucky, 46.1 percent and Wisconsin, 31.2 percent). Kentucky produces twice as many certificates—many of them short-term—as associate degrees. On the other hand, Virginia and Oregon award fewer certificates per population than the national average (14.4 percent and 14.9 percent, respectively). In Virginia, public colleges account for about half of the certificates awarded in the state, while Oregon's public colleges account for roughly a third of the certificates awarded in the state.^{xiii}

STRATEGIES TO ASSURE LABOR MARKET RELEVANCE OF CREDENTIALS

As states and colleges restructure programs to better meet diverse student needs, they are implementing policies and practices to ensure that the credentials awarded respond to labor market demand in terms of the skills represented by the credential and the number of people with these competencies needed by employers. In each state studied, the

state is responsible for approving new programs and courses; however, fewer rules govern the award of short-term certificates than longer degrees or diplomas, in order to allow greater flexibility for local variation to meet employer requirements. To varying degrees, each of the states studied requires employer involvement in defining skills and verifying demand for workers—both as programs are initially developed and on an ongoing basis—to ensure credentials are relevant and responsive to changing labor market needs.

For example, in Wisconsin’s technical college system, all degree and diploma programs must demonstrate that there is a need for program completers. Kentucky requires new programs to use the DACUM (Developing A CurricuLUM) process to build a curriculum based on an occupational task analysis as well as real time labor market information (LMI) from Burning Glass on skills in demand and other LMI on employment and wages. KCTCS conducted a gap analysis and shared this information with colleges in chart form to help them determine high wage/high demand occupations that overlap with their programs. In Oregon, coursework taught in short-term (12-44 quarterly credit hours) certificates must be tied to competencies identified by employers for entry-level jobs or career advancement. The state approval process for these short-term certificates has been streamlined for certificates to provide colleges with the flexibility to respond to employer needs in a timely manner. Virginia’s certificates of 30 credits or more require the use of labor market data to demonstrate need, but there is no such requirement for their less-than-one-year Career Studies Certificates. Additionally, the majority of technical diploma and Applied Associate degree programs in Kentucky, Oregon, Virginia, and Wisconsin are required to have program advisory committees—made up of employers who hire from the programs—to ensure curricula requirements are met. To further engage employers, Kentucky’s Gateway Community College has created an employer consortium in manufacturing that meets quarterly on a wide range of issues of interest to industry.

Major policy issues that must be addressed in creating stackable credentials

Creating stackable credentials is complex. As illustrated by the examples of reforms discussed below, states and colleges working to overcome multiple barriers that have made it difficult for students to gain the credentials they need to advance in their careers and for employers to get the skilled workers they need to succeed. To help people advance both at work and in education, stackable credentials must have value in the labor market and be accepted as valid attestations of learning outcomes in educational credit and credentialing systems so that students can access education and continue on their educational path without having to start over as their needs and interests change.

Creating stackable credentials that meet this test requires colleges and states to:

- ***Cross-walk the different standards and metrics underlying industry and educational credentials.*** Industry and professional certifications are largely awarded based on an individual’s demonstrated mastery of competencies required in the workplace, while credit-bearing educational credentials are awarded based on course completion using a time-based metric of college credits. Certifications and licenses are time-limited and some certifications are dated to indicate when the competencies covered by the certification were current. Thus, aligning curricula with industry requirements and determining equivalencies between industry and educational credentials requires ongoing communication and reassessment. Creating crosswalks helps students, educators, job seekers, and government understand what these credentials actually represent and promotes portability of credentials across boundaries.
- ***Work within and around constraints created by state and institutional governance arrangements.*** Governance arrangements influence which credentials can be awarded, transferability of credentials from one level of education to another, and the strategies pursued. Transferability of credits and credentials is

impeded by: divisions in authority among state governance bodies for community and technical colleges, four-year institutions, elementary and secondary education, adult education, and career and technical education; and divisions in authority among state governance bodies, regional accreditors, colleges, and faculty curriculum committees within colleges. For the most part, it is colleges-not state systems-that are accredited. Technical Diplomas and Applied Associate Degrees are not transferrable to bachelor's degrees, except by special articulation agreements (e.g. 2+2 programs) or unless they are part of an Applied Baccalaureate degree.

- ***Bridge silos within and across educational institutions.*** Institutional silos that impede the portability of postsecondary credits and credentials include divisions between academic and occupational programs and the various disciplines within these organizational divisions. Discipline-based course numbering conventions and jurisdictional issues make it difficult to create interdisciplinary programs leading to lattice credentials that allow people to advance along multiple pathways. Elective credits may not be fully transferrable from one program to another and may not replace required courses in a prescribed program of study. Credits may not transfer from one institution to another because the receiving institution determines how much credit will transfer and whether the course will be accepted for elective credit or as equivalent to a major course.^{xiv}
- ***Overcome the disconnect between credit-bearing and noncredit educational offerings.*** Many occupational training programs, even those provided by accredited educational institutions, are offered on a noncredit basis (primarily in order to bypass the traditional academic approval process). This approval process can be cumbersome and lengthy and therefore impedes the institution's ability to respond in a timely manner to employer needs. Additionally, instructors who teach credit-bearing classes must be certified in the fields they are teaching, making it difficult to offer interdisciplinary programs on a credit basis. Although there are processes for gaining credit for non-collegiate learning, there is considerable variation in how and the extent to which these processes are implemented. They can be complicated and costly for students to pursue. As a result, students who choose to continue in education often find noncredit courses to be dead ends that impede their progress unless they are able to obtain “credit for prior learning through a complicated, frequently costly process. Bridging this divide also involves negotiating credit arrangements for dual enrollment programs that combine occupational training with noncredit courses, including adult education and developmental education.
- ***Negotiate federal financial aid rules.*** One of the main considerations in chunking or modularizing programs is to ensure that they are eligible for federal financial aid, which requires a minimum number of weeks and clock or credit hours.^{xv} Other considerations are: the reduction in the number of semesters a student can receive a Pell grant from 18 to 12; the elimination of the Ability-to-Benefit provision that allowed students without a high school diploma or equivalency, or those who were home schooled to be eligible for federal financial aid if they could demonstrate their ability to benefit; the requirement that educational institutions offering non-degree credentials “prepare students for gainful employment in a recognized occupation”; and the rule that limits students' eligibility for financial aid to 150 percent of the number of credits needed to complete their degree, diploma, or certificate program. The 150 percent rule can be a barrier if the pathway contains supportive courses that may not necessarily be part of the larger program or may be required for a specific job but not a part of the larger program.
- ***Balance the need for local flexibility with the need for greater consistency to promote portability of credentials.*** While local flexibility for the creation of short-term credentials has allowed colleges to respond quickly to specific employer needs and get students into the labor market expeditiously, it has also created discrepancies in the content and credits provided for these courses, impeding the credentials' portability. This also undermines the ability to stack these short-term certificates to additional credentials

as part of longer-term career pathways. Conversely, aligning programs with national certification standards leads to greater consistency in content, more portability, and better connection to subsequent credentials along a career pathway.

- ***Provide the right mix of traditional classroom instruction, online options and experiential learning opportunities through internships and work experience for students with different needs and different courses of study.*** Certification standards usually combine a focus on the acquisition and application of knowledge to specific circumstances and the performance of relevant technical skills. The application of knowledge and skills can best be learned by practice. Adapting pedagogical practice to a more flexible and integrated approach also entails rethinking prerequisites and the sequencing of courses within a program of study. One such issue relates to the role of general education requirements, which are traditionally not contextualized to the student's field of study.

Examples of state and institutional actions to implement stackable credentials

MODULARIZE EXISTING ASSOCIATE DEGREE PROGRAMS.

Oregon and Wisconsin streamlined the state approval process for short-term credit-bearing credentials that are wholly embedded in already-approved, longer-term programs in order to encourage colleges to develop such credentials.

Oregon created Career Pathways Certificates of Completion (CPCC), which can range from 12-44 quarterly credits and must be wholly contained in either a 1 or 2-year Associate of Applied Science (AAS) degree. Courses are tied to competencies identified by employers for jobs in the local labor market. As most CTE programs already have employer advisory committees in place, the vetting of CPCCs is done through these committees. Since July 2007, when the Oregon State Board of Education approved Career Pathway Certificates, 300 such certificates in a wide variety of occupations have been approved and are currently offered at all 17 Oregon community colleges. In addition, the state has over 100 Less Than One Year Certificates (LTOY). These can be “stand alone” or include courses that are not “wholly contained” in one degree program, providing additional flexibility at the local level. More than 7600 Career Pathways and Less Than One Year Certificates have been awarded statewide since 2008. Embedded Technical Diplomas carrying 2-25 semester credits, which must be embedded in an already approved two-year Technical Diploma or Degree program. The state also created one-year Technical Diplomas carrying 26-54 semester credits that are aid-eligible on their own. To date, Wisconsin has approved 35 short-term embedded technical diplomas and 43 one-year technical diploma programs.

Kentucky took a different tack by creating three different but related approaches to pathway programs. In 2005, KCTCS began by creating elective Business and Industry (BIT) courses for academic credit that could be applied to specific or general studies technical programs. In 2009, KCTCS used its ability to award fractional credit (starting as low as 0.2 credit hours) to modularize both classroom-based and online occupational programs that were in high demand in the labor market. They identified knowledge and skill clusters with labor market value by looking at high attrition points in the program where by students dropped out to enter the workforce. There are now 600 certificate programs that are offered for credit. However, because of their short-term nature, many don't qualify for financial aid.

The online modularized Learn on Demand option was created to allow working adults to enter career pathways that lead to a college degree by taking modules that stack to a course. Students have the option to test out of modules on

content they already have mastered. While most students have up to eight weeks to complete a module, they also have the option to move on to the next module at a quicker pace. Some modules require exams and lab activities

that students may access in approved locations that are convenient for them. Kentucky is awaiting approval from the U.S. Department of Education and accreditors to use Learn on Demand to test the use of direct assessment as the measure of student learning for competency-based education under federal financial aid.^{xvi}

In breaking down courses into more flexible options for students, each state had to balance the need to create credentials that cover bundles of skills and knowledge which are in demand in the local labor market with the need to sequence courses for pedagogical reasons because certain knowledge and/or skills are required as a prerequisite to moving to the next step.

EMBED EXISTING INDUSTRY AND PROFESSIONAL CERTIFICATIONS IN CAREER AND TECHNICAL PROGRAMS.

The Milwaukee Area Technical College (MATC) Information Technology (IT) classes, certificates, technical diplomas, and associate degrees map to industry-recognized certifications. Their IT program exemplifies how industry certifications can be embedded in the curriculum. As the draft map in Appendix II illustrates, students can earn educational credits on the pathway to an associate degree and numerous industry certifications they can use to focus on specific technologies and skillsets as they pursue multiple IT career pathways. For example, students can earn certifications from many vendors, including Cisco, Microsoft, VMware, CompTIA, AccessData, and HDI. This is valuable for students preparing to enter the IT field, those working to advance in their career pathway, and career changers seeking new careers in the IT field. The program provides options for dual credit with high schools and credit for prior learning. In addition, the various IT associate degree programs have transfer agreements with numerous four-year institutions.

Under the leadership of Gateway Technical College, Wisconsin's technical schools are taking inventory of certifications they have embedded in their programs to set the stage for sharing best practices and potentially developing more consistent policies among colleges for awarding credit for certifications. Greater consistency would promote portability of credentials for students. A certification summit is planned for spring 2014.

The National Coalition of Certification Centers (NC3) is a good example of partnerships between education and training providers and industry associations. NC3 started as a partnership between Gateway Technical College in Wisconsin and Snap-on Inc. to create an industrial tool diagnostics training and certification center. It has since evolved into a coalition of 100 advanced technical education centers, community colleges, and manufacturer-sponsored training programs. NC3 facilitates partnerships between industry and educational institutions to develop industry-specific training. It provides curriculum development, access to skill standards-based certifications, standardized staff training, and guidance.

STREAMLINE AND SCALE PROCESSES FOR AWARDING CREDIT FOR LEARNING REPRESENTED BY NON-COLLEGIATE CREDENTIALS.

In 2001, Kentucky Community and Technical Colleges began awarding credit for workplace learning (including apprenticeships, corporate training, and industry certifications) through a variety of means. Students who pass a standard certification examination administered by an industry-authorized testing center can earn credit hours toward KCTCS credentials. In 2011, as part of its commitment to allow students to capitalize on workplace training, KCTCS funded 17 positions (one at the system office and one at each of the 16 colleges) focused on incumbent workers who had received academic credit through customized business and industry training provided by the

colleges. The three-year funding for these positions was directly tied to a system performance measure focused on matriculating incumbent workers into a pathway and came with the understanding that colleges would develop and institutionalize processes to continue the work after the initial three years had concluded. To assist with these and broader efforts to award credit for workplace learning, KCTCS is currently developing a handbook to help students easily access information about currently accepted forms of prior learning credit. It is also working with the system academic council to build consensus on possible additions to approved prior learning credit, such as industry certifications.

The Virginia Community College Chancellor's Office is funding pilot projects in three institutions to provide prior learning credit for veterans' experience in different Military Occupation Specialties (MOS), in order to accelerate their completion of associate degrees and reemployment. Colleges where there is a heavy military presence are using a crosswalk from standard military education,^{xvii} while others are using a portfolio approach to assessing prior learning for credit. For example, Thomas Nelson Community College relies on ACE Guideline recommendations for awarding credit for Military School experience as part of a formal Transcript Review process. In addition, the college is conducting a comprehensive review of its Advance Standing Guide to ensure students are awarded the maximum allowed credit, as well as develop a process for awarding credit for experiential learning that would benefit diverse student populations, including active duty military, veterans, and dislocated workers.

In 2011, Oregon's state legislature created a committee to develop a quality process for awarding credit for prior learning (CPL), in order to increase the number of students who attain postsecondary credentials. Oregon also received a round-one TAACCCT grant that increased CPL capacity and implementation at five Oregon community colleges. The colleges and state hope to adopt these CPL standards in spring 2014. Under a round-two TAACCCT grant, Wisconsin technical colleges are working with the Council on Adult and Experiential Learning (CAEL) to agree on a systematized method for awarding credit for prior experience in programs related to manufacturing.

In addition, Wisconsin's and Oregon's community and technical college systems have established statewide crosswalks between professional certifications in the early childhood field and their early childhood certificate, diploma, and degree programs. The agreement is that people who have certain certification levels in the states' ECE professional registries can get specified amounts of credit in their education program; and their educational certificates, once earned, grant them higher certification levels in the registries. For example, in Oregon, there is a state-wide agreement that people who are listed on the state ECE registry at level 7 are given 8 credits (the equivalent of 3 of the 6 courses required to earn an ECE certificate). People who get the ECE certificate also move up a half step on the registry scale. Lane and Rogue community colleges have also embedded vocational English as a Second Language (VESL) into the Certificate program to increase options for English language learners to accelerate and complete a certificate.

CREATE "LATTICE CREDENTIALS" THAT ALLOW STUDENTS TO MOVE BOTH UP A CAREER LADDER WITHIN AN OCCUPATIONAL FIELD OR ACROSS MULTIPLE PATHWAYS IN A CAREER LATTICE.

The Basic Health Care certificate program, created by Rogue Community College in partnership with southern Oregon healthcare employers, is designed to prepare students for work in entry-level positions in the health care industry, as well as provide basic preparation for further training and employment in a variety of allied health fields. It is intended to motivate young people to go into health care and serve as a professional development opportunity for incumbent workers. The certificate can be completed through dual credit in high school and taken entirely online. The original curriculum focused on providing knowledge about the health care field, but was redesigned based on employer feedback that there was too little emphasis on teaching the skills necessary to perform in the field. With the support of a round-two TAACCCT grant, the program was redesigned to allow students to take up to 10 quarter credits in a specific area of concentration, such as courses leading to a CNA certification/license. The

draft flowchart in Appendix II shows the variety of ways RCC's Basic Healthcare Certificate can be tailored with electives and online options to the students' unique interests and career development goals in allied health.

CREATE DUAL ENROLLMENT OPTIONS THAT ENABLE STUDENTS TO WORK CONCURRENTLY TOWARD A HIGH SCHOOL DIPLOMA OR ITS EQUIVALENCY, MARKETABLE POSTSECONDARY CREDENTIALS AND INDUSTRY CERTIFICATIONS.

In Virginia, students are required to obtain an industry-recognized credential through dual enrollment in order to graduate from high school with a standard (rather than advanced) diploma.

PluggedIn VA, Virginia's cohort-based dual-enrollment program, enables adult education students to succeed in postsecondary education. The program is being implemented in a variety of locally identified industries ranging from welding and electronics to medical coding and customer service. Through the six-month program, students can earn a GED (going through a contextualized curriculum), an industry-specific credential in a high-growth regional industry, a Career Readiness Certificate, as well as academic credits in a variety of occupational fields that are stackable/transferable into an Associate of Applied Science (AAS) degree or a career studies certificate. In 2002, Virginia adopted the CRC, which is similar to and aligned with the National Career Readiness Certificate, for use on a state-wide basis.

Conclusion

Policymakers and practitioners are increasingly taking steps to address barriers that have impeded people's ability to obtain marketable credentials that will help them access or keep a good job or advance to a better job. States and institutions—often with foundation support and federal discretionary funding—are implementing a variety of reforms to create career pathway and stackable credentialing systems. In doing so, they are creating systems that are more responsive to the needs of both employers and the growing number of nontraditional students^{xviii} who must balance education, work, and family responsibilities as they work toward credentials that will help them advance in the labor market. These reforms are also moving the postsecondary education system from one in which learning has been calibrated almost entirely by clock and credit hours to one that is outcome-focused and competency-based.

The federal government is working on an interagency basis under the leadership of the U.S. Department of Education's National Center for Education Statistics (NCES) to improve data collection on participation in and credentialing of education and training for work.^{xix} The U.S. Department of Education is also using its experimental authority under Title IV of the Higher Education Act to test alternative ways of administering student financial assistance programs to support short-term training and is considering tests of competency-based approaches that can improve student persistence and academic success for a broader set of students.^{xx} These activities hold promise for removing remaining barriers to create more flexible and coherent systems to support credential attainment. Official guidance clarifying that stacked credential approaches and career pathway programs are aid-eligible would further support such reform efforts.

While "stackable credentials" is a growing area of practice, it is still at an early stage of development. To the extent such credentials prove to have value in work and education, they potentially are "transferable currency" that can help people progress in our multi-layered education, training, and credentialing system without having to start over as their needs and interests change. That is a goal worth pursuing.

Appendix I Credentials

“Credentials” is an umbrella term that includes degrees, diplomas, certificates, badges, professional/ industry certifications, apprenticeships and licenses. Credentials vary in the awarding organization, the standards on which the award is based, and the rigor and type of assessment and validation processes used to attest to the skills, knowledge, and abilities people possess.

POSTSECONDARY EDUCATIONAL CREDENTIALS

Educational credentials include degrees, diplomas, and certificates that are awarded by accredited educational institutions based on successful completion of a course of study. These credentials vary in the specificity with which courses have clearly articulated learning outcomes that students must achieve to obtain the credential. These courses of study also vary in scope, duration, and level of effort, which has traditionally been calibrated by a metric of time-based credits. Postsecondary certificates are typically awarded for completion of a less-than-two-year course of study, but the duration varies substantially. Postsecondary diplomas are typically no more than 1 year or 30 credits in duration and include general education courses, as appropriate to the field of study. Associate-level degrees are awarded to students who complete 90 quarter credit hours or 60 semester credit hours of schooling, which typically requires two years to complete on a full-time schedule. In addition, educational institutions award certificates for completion of noncredit occupational training programs.

Portability of credentials across educational levels and institutions depends on articulation and transfer agreements. Associate Degrees have a general scope and are intended as a transfer function, while Applied Associate Degrees, which have a narrow technical scope and are intended for individuals in a specific field of study to gain employment, only transfer by specific transfer agreement.

Educational credentials are awarded once and carry no requirement from the awarding organization for repeated demonstration of knowledge and skills. However, to address rapidly changing knowledge and skill requirements, some certificates are now dated to indicate when these requirements were current.

INDUSTRY OR OCCUPATIONAL CREDENTIALS

Industry or occupational credentials include certifications, licenses, and certificates.

Certifications are awarded by a third-party nongovernmental certification body, such as an industry or occupational association, based on an individual demonstrating through an examination process that she or he has mastered the required knowledge, skills, and abilities to perform a specific job. The examination can be written, oral, or performance-based. Quality certifications set the standards against which mastery is assessed through a defensible, industry-wide job analysis or role-delineation process and use examination processes that meet psychometric rigor to assure they are fair, valid, and reliable. A certification is typically a time-limited credential that may be renewed through a recertification process and rescinded for ethical violations and incompetence. Certification is often voluntary, but may be mandatory when tied to state licensure and preferred or required by an employer for hiring.

Certifications differ widely in quality and the breadth and level of competencies covered, as well as the types of assessments used in the certification process. Some certifications are knowledge-based, while others focus more on skills and abilities. For example, CompTIA’s Strata IT Fundamentals certification covers the basic understanding of PC components, functionality, compatibility, and related topics, while more advanced CompTIA certifications cover both the knowledge and skills needed to perform certain IT functions, such as imaging and network security. Some certifications include prerequisite requirements, such as having a high school diploma, having worked for a

certain period of time, or successfully completing a complex certification-related task. Certifications also differ in whether they are vendor-neutral, as in the case of CompTIA certification in IT, or vendor-specific, as are Microsoft certifications.

Licenses to practice are granted by federal, state, or local government agencies based on predetermined criteria, which may include some combination of degree attainment, certifications, certificates, assessment, apprenticeship programs, and work experience. Licenses are time-limited and must be renewed periodically. Licenses are granted to provide for a level of consumer protection and ensure safety and quality of work. Licensure requirements are defined by laws and regulations. Violation of the terms of the license can result in legal action.

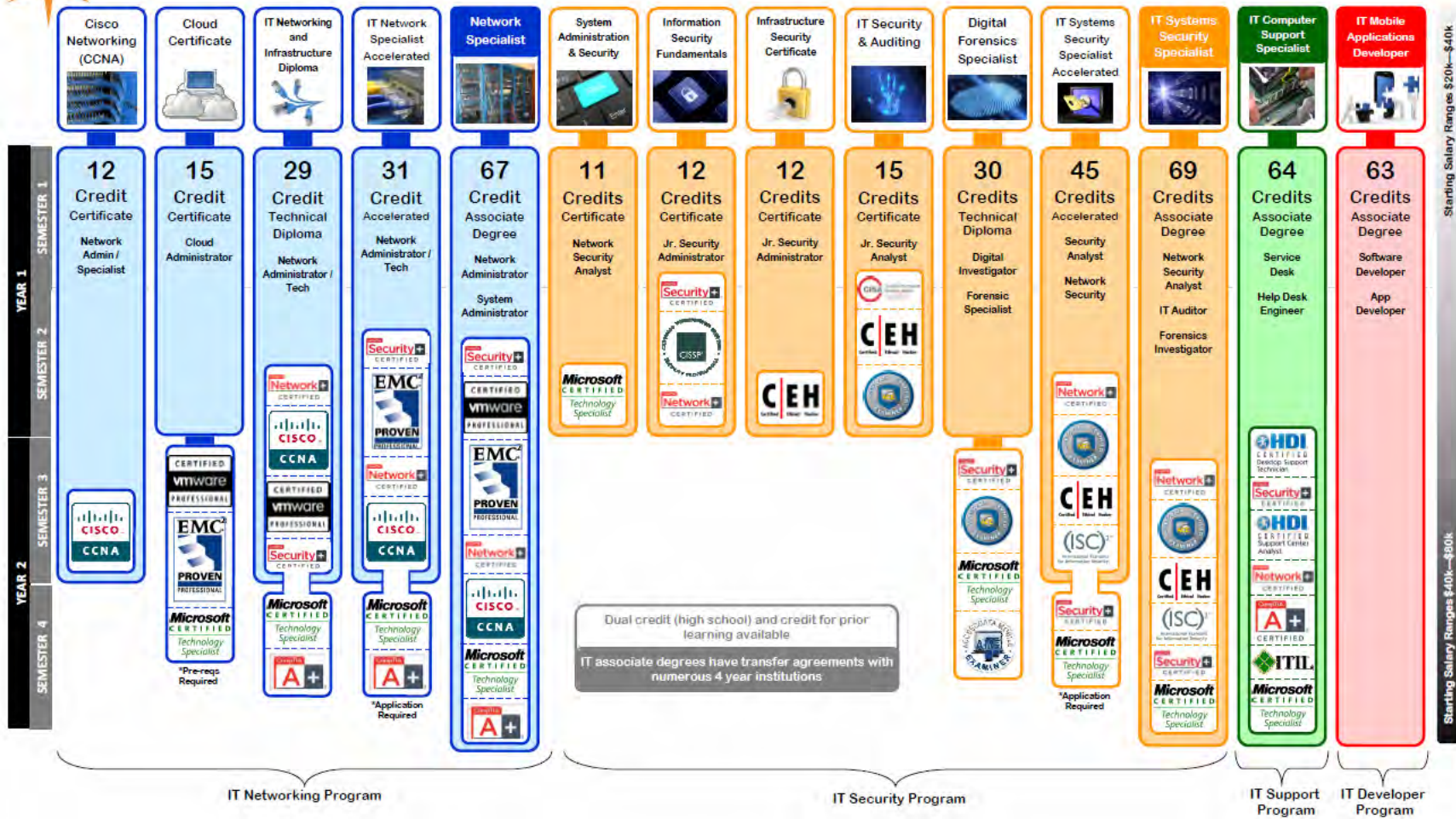
Certificates. Employers, industry associations, and others award certificates of completion for their various training programs. Upon completion, participants in a registered apprenticeship^{xxi} receive a portable, nationally recognized certificate of completion issued by the U.S. Department of Labor (USDOL) or the State Apprenticeship Agency that certifies occupational proficiency.^{xxii} They may also receive interim credentials issued by USDOL and an Applied Associate Degree.

Appendix II Figures

MILWAUKEE AREA TECHNICAL COLLEGE DRAFT



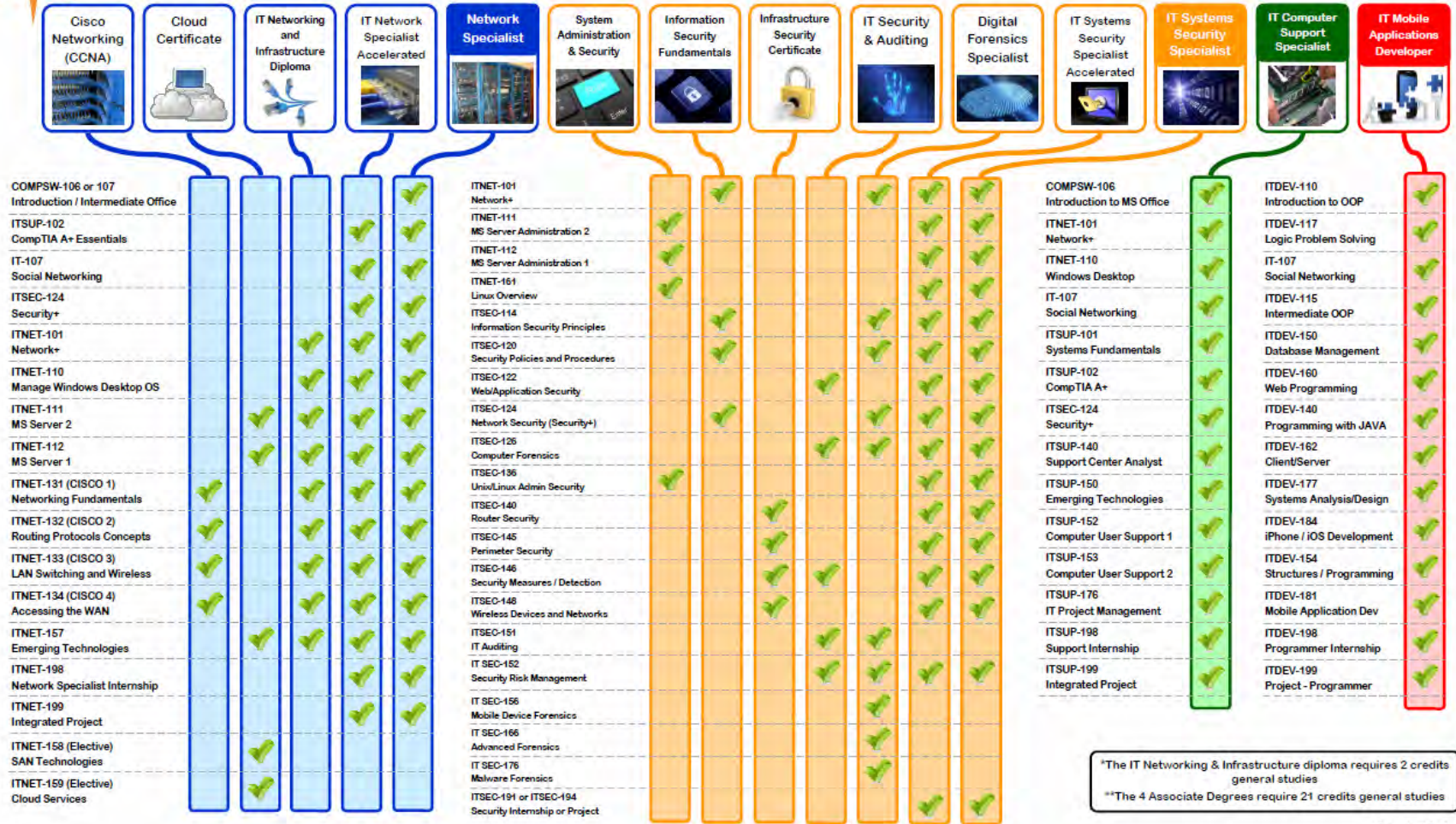
Information Technology Pathways



MILWAUKEE AREA TECHNICAL COLLEGE DRAFT



Information Technology Pathways



*The IT Networking & Infrastructure diploma requires 2 credits general studies
 **The 4 Associate Degrees require 21 credits general studies

ROGUE COMMUNITY COLLEGE DRAFT BASIC HEALTH CARE CERTIFICATE ACADEMIC GUIDE

<u>Prerequisites</u>		
Course No.	Course Title	Credits
MTH20	Pre-algebra (or designated placement test score as shown on current indicator chart)	0-4
RD 30	College Reading II (or designated placement test score as shown on current indicator chart)	0-4
WR30	Fund. of Composition II (or designated placement test score as shown on current indicator chart)	0-4

Required Courses Choose the eight courses you need from the list below

Course No.	Course Title	Credits
BI100SB	Biology of Human Body Systems	3
or BI121 and BI122	or Elementary Anatomy and Physiology I and II w/lab*	8
or BI231, 232 and 233	or Anatomy and Physiology I, II and III w/lab**	12
CS 120 or Comp. Prof.	Concepts in Computing I or Computer Proficiency	0-4
HE261, HE112, HE252	CPR, Emergency First Aid, First Aid/CPR	1-4
HE250 OR HPE295	Personal Health Promotion OR Health and Fitness for Life	
or PSY215	Life Span Human Development****	
HCI120	Intro to Health Care Industry	3
CG155	Exploring Careers in Healthcare	3
or PSY101	or Psychology of Human Relations	3
or BT101	or Human Relations in Organizations	3
or SP100	or Basic Communication	3
MO100 or MO110	Medical Terminology: Introduction or Medical Terminology: Clinical	3
MTH60 or Higher	Fundamentals of Algebra 1 or Higher level Math	4
WR115 or BT113	Intro to Expository Writing OR Business English 1 or Higher level Writing	3-4
		Total Credits 20 – 37

Specialty Track: An additional 6 – 10 credits are required for BHC completion from the tracks described below. Earn an additional certification by completing one of these four focus areas and completing the certification exam.

Nursing Assistant
NA101/NA101C 9 Cr..

Phlebotomy
AH104 5 Cr.
AH180 1 Cr.

EMT
ES131/ES131L 5 Cr.
ES132/ES132L 5 Cr.

Community Health Worker
HC100 6 Cr.

ROGUE COMMUNITY COLLEGE DRAFT BASIC HEALTH CARE CERTIFICATE ACADEMIC GUIDE

Elective Options: These get you *started* towards completion of another certification or degree program in healthcare:

<p><u>Massage*</u> <i>In BHC Required Choose:</i> BI121,122 CHEM104 5 Cr. MT100 2 Cr. *** MT101 2 Cr. ***</p>	<p><u>Human Services</u> (Choose 2 of the Following) SOC243 4 Cr. SOC230 4 Cr. PSY201 4 Cr. EMS2053 Cr.</p>	<p><u>Clinical Lab Assistant</u> BI211 4 Cr. CHEM204 5 Cr.</p>	<p><u>Healthcare Informatics*</u> <i>In BHC Required</i> Choose: BI121,122 HCI255 3 Cr.</p>
<p><u>Fitness Technician</u> SOC230 4 Cr. NFM225 4 Cr.</p>	<p><u>Practical Nursing</u> <i>In BHC Required</i> Choose: BI121,122 NA101/NA101C 9 Cr.</p>	<p><u>Medical Assistant</u> AH104 5 Cr. AH180 1 Cr. MO110 3 Cr.</p>	

***Massage courses are available only with instructor approval and are limited in availability

<p><u>Nursing</u> <i>In BHC Required Choose:</i> **BI231, 232, 233 ¹MTH95 ²WR121 SP100 PSY215 Choose 2 from NFM225 4 Cr. PSY202 4 Cr. BI211 4 Cr. SP111 4 Cr.</p>	<p><u>Paramedicine</u> <i>In BHC Required</i> Choose: BI231, 232, 233 ¹MTH65 ²WR115 Focus Area Options: ES131/131L 5 Cr. ES132/132L 5 Cr. Or SP111 4 Cr. BI211 4 Cr.</p>	<p><u>Dental</u> Choose HE252 in Required portion Choose 6 – 10 cr.: HE250 3 Cr. HPE295 3 Cr. HC100 6 Cr. BI211 4 Cr. CHEM104 5 Cr. SP111 4 Cr.</p>
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ROGUE COMMUNITY COLLEGE DRAFT BASIC HEALTH CARE CERTIFICATE ACADEMIC GUIDE

Online BHC Option: Complete the Basic Healthcare Certificate Online

Take the following required core courses available online:

BI100SB	3 Cr.
CG155	3 Cr.
CS120 or Comp. Prof.	0-4 Cr.
HE250	3 Cr.
HCI120	3 Cr.
MO100	3 Cr.
MTH60	4 Cr.
BT113	4 Cr.

Required Core Credits 23 – 27

Choose 6 – 8 Credits from this list of electives:

HCI255	3 Cr.
PSY101	3 Cr.
PSY201	4 Cr.
PSY202	4 Cr.
PSY231	3 Cr.
<u>SOC230</u>	4 Cr.

Elective Credits 6 – 8

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- Angela Taylor, Vice President for Workforce Solutions, Gateway Community and Technical College

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- Shawn Avery, Vice President for Workforce Development, Peninsula Council on Workforce Development
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- Kate Daly, Instructional Specialist, *PluggedIn VA*
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- Daniel Lewis, Director of Educational Programs Virginia Community College System
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- Audrey Theis, President, Key Links

ENDNOTES:

- ⁱ Carnevale, Anthony P. and Ban Cheah. 2013. *Hard Times 2013: College Majors, Unemployment, and Earnings*. Washington, D.C.: Georgetown University Center on Education and the Workforce. <http://cew.georgetown.edu/unemployment2013>
- ⁱⁱ Measuring Alternative Educational Credentials: 2012, Household Economic Studies by Stephanie Ewert and Robert Kominski, January 2014.
- ⁱⁱⁱ Becker, Garry S. *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*, 3rd edition. Chicago, IL: The University of Chicago Press, 1993.
- ^{iv} The 2013-2014 National Governors Association Chair's Initiative, "America Works: Education and Training for Tomorrow's Jobs" also is focused on strengthening educational performance by forging closer relationships among high schools, colleges, workforce training providers and employers.
- ^v Pathways in Oregon: A Descriptive Study of the Statewide Initiative & Initial Cohort of Completers, Community Colleges and Workforce Development, March 2013.
- ^{vi} The award of short-term nondegree credentials is growing. In 2007-08, the latest period for which data is available, less than 1-year awards, a large share of which were in health care, accounted for 54 percent of all certificate awards reported by all such postsecondary educational institutions. *Certificates Count: An Analysis of Sub-baccalaureate Certificates*, by Brian Bosworth for Complete College America, December 2010.
- ^{vii} The initiative aims to identify criteria and indicators that define high-quality career pathway systems and a set of shared performance metrics for measuring and managing their success.
- ^{viii} See [AQCP Executive Summary](#) for more information.
- ^{ix} *Giving Credit Where Credit is Due: Creating a Competency-Based Qualifications Framework for Postsecondary Education and Training*, Evelyn Ganzglass, Keith Bird and Heath Prince, CLASP, 2011.
- ^x Under existing rules, to be eligible for financial aid, a degree or certificate program must at least one year long, resulting in gainful employment or, for certificate programs shorter than one year, is on the institution's list of federally approved non-degree programs (the Eligibility and Certification Approval Report or ECAR). To be eligible for Pell Grants, these shorter certificate programs must be at least 600 clock hours, 16 semester or trimester hours, or 24 quarter hours long and offered over at least 15 weeks of instruction.
- ^{xi} CompTIA is an IT industry association that provides a wide range of IT certifications and professional development opportunities. The interactive [CompTIA Certification Roadmap](#) illustrates the range of stackable CompTIA credentials in multiple IT career pathways. The roadmap is used by guidance counselors, career centers and students for exploration purposes.
- ^{xii} For a discussion of dual enrollment career pathway bridge programs for basic skills students, see [Farther, Faster](#) by Julie Strawn.
- ^{xiii} *Certificates Count: An Analysis of Sub-baccalaureate Certificates*, by Brian Bosworth for Complete College America, December 2010.
- ^{xiv} Oregon is working to increase transferability of credits and credentials across its community colleges as well as from Applied Associate Degree to Bachelor of Applied Science programs and degree programs offered by the university system.
- ^{xv} The U.S. Department of Education is using its Experimental Sites authority under section 487A(b) of the Higher Education Act of 1965, as amended to test the use of Pell Grants with otherwise eligible students who are enrolled in a vocational program of at least eight weeks in length and that, at a minimum, includes at least 150 clock hours of instructional time. The institution must provide training needed to meet local or regional workforce needs. <https://experimentalsites.ed.gov/exp/approved.html> The initial analysis of results is anticipated in mid-2014. (See endnote x for existing rules)
- ^{xvi} Instead of using credit hours or clock hours as a measure of student learning, with approval of the U.S. Department of Education, instructional programs may use direct assessment of student learning, or recognize the direct assessment by others of student learning. Examples of direct measures include projects, papers, examinations, presentations, performances, and portfolios. <http://ifap.ed.gov/dpccletters/GEN1310.html>
- ^{xvii} Since 1954, the American Council on Education (ACE) has collaborated with the U.S. Department of Defense to review military training and experiences and recommend appropriate college credit for members of the Armed Forces. ACE's credit recommendations appear in the Military Guide and on military transcripts. More than 2,300 colleges and universities recognize these transcripts as official documentation of military training and experiences and applicable ACE credit recommendations.

^{xviii} The National Center for Education Statistics (NCES) has identified the following characteristics that are common to nontraditional students: do not immediately continue their education after high school graduation; attend college only part time; work full time (35 hours or more per week); are financially independent; have children or dependents other than a spouse; are a single parent; and have other than a standard high school diploma.

<http://nces.ed.gov/pubs/web/97578e.asp>

^{xix} <https://nces.ed.gov/surveys/gemena/>

^{xx} <https://experimentalsites.ed.gov/exp/index.html>

^{xxi} Apprenticeship is an “Earn and Learn” training model that combines structured learning with on-the-job training from an assigned mentor. Related instruction, technical training or other certified training is provided by apprenticeship training centers, technical schools, community colleges, and/or institutions employing distance and computer-based learning approaches.

^{xxii} <http://www.doleta.gov/OA/apprenticeship.cfm>