



2023 Utilization Report

*State of Illinois Model Programs of Study Guides in
Education, Health Sciences and Technology,
Information Technology, and Manufacturing and Engineering*



EdSystems

EDUCATION SYSTEMS CENTER at
NORTHERN ILLINOIS UNIVERSITY

Funding for this project was provided through a Grant Agreement from the Illinois Community College Board, utilizing Perkins Leadership funding.



ABOUT ICCB

In 1965, the Illinois General Assembly established the Illinois Community College Board (ICCB) to create a system of public community colleges that would be within easy reach of every resident. Today, the Illinois Community College System covers the entire state with 48 colleges and one multi-community college center in 39 community college districts. Community colleges serve nearly one million Illinois residents each year in credit and noncredit courses and many more through their public service programs.

Illinois' community colleges meet both local and statewide needs for education and workforce development through high-quality, affordable, accessible, and cost-effective programs and services. Learn more at iccb.org.

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ABOUT EDSYSTEMS

Education Systems Center (EdSystems) is a mission-driven policy development and program implementation center based within Northern Illinois University's Division of Outreach, Engagement, and Regional Development. EdSystems' mission is to shape and strengthen education and workforce systems to advance racial equity and prepare more young people for productive careers and lives in a global economy. EdSystems helped drive the development and adoption of the Postsecondary and Workforce Readiness Act. Learn more at edsystemsniu.org.

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Introduction & Background

The [State of Illinois Model Programs of Study Guides](#) were developed in collaboration with the Illinois State Board of Education (ISBE) and Illinois Community College Board (ICCB) through a process led and facilitated by the Education Systems Center at Northern Illinois University (EdSystems). The process included extensive research into labor market information and credential programs, as well as dialogue across secondary, postsecondary, and employer stakeholders. The first four guides created were published in 2020, representing the following industry sectors: education, health sciences and technology, information technology, and manufacturing and engineering.

With the support of ICCB, EdSystems researched the utilization of the aforementioned Model Programs of Study Guides. We consulted with ICCB to receive the Perkins V Instructional Course Sequence submissions from June 2022 to November 2022. We reviewed a series of submissions from various community colleges representing rural, suburban, and urban areas. These submissions comprised the sample for our research. In this report, we explain our approach, present the findings, and offer recommendations to improve alignment to and future implementations of the guides in service of student success.

Purpose & Analyses

In 2020, the Model Programs of Study Guides in Education, Health Sciences and Technology, Information Technology, and Manufacturing and Engineering were published. The primary purposes and goals of the guides are to:

1. Provide guidance and exemplars for local programs to adopt or customize as they develop programs of study for approval as part of the Perkins V Plan.
2. Establish a framework for State agencies to develop and implement program supports.
3. Identify priority dual credit courses that are foundational to the industry area and well-situated for statewide scaling and articulation.
4. Define the competencies that should be sequenced across a program of study course sequence to prepare students for the future of work in that industry area.
5. Identify entry points for employers to support coursework and related experiences.

Community colleges and their high school partners use these guides to create various programs of study that sequence courses from secondary through postsecondary programs. The guides play a critical role in helping districts identify high-priority occupations, academic and technical credentials, select dual credit courses, course sequences, and technical competencies.

We analyzed the utilization of the Model Programs of Study Guides in Education, Health Sciences and Technology, Information Technology, and Manufacturing and Engineering. Specifically, we compared the dual credit courses submitted by various community colleges to the corresponding guides' recommended course sequences. The [Illinois Program of Study Expectations Tool](#) was used as a reference to review each pathway, paying close attention to dual credit courses and submission adherence to the Model Programs of Study sequence descriptions and mappings. In addition, we

used the Program of Study Expectations Tool to categorize each institution's programs of study level of alignment to the corresponding Illinois Model Programs of Study Guide.

The analyses enabled us to provide recommendations on increasing usage statewide and identifying curriculum-related barrier reduction strategies.

Key Recommendations

- **Continue to provide support and technical assistance** centered around the Model Programs of Study Guides. EdSystems' experience is that institutions enjoy learning from our organization and each other. We recommend cohorting institutions by specific industry sectors during Community of Practice sessions.
- Help institutions understand the importance of researching, mapping, and offering **pathways that lead to high-priority occupations.**
- Offer support in **professional development plans for teacher credentialing** to optimize teacher requirements for industries that are most impacted by the teacher shortage.
- Support colleges to consider similar strategies for **equitable access to dual credit courses.**

Approach

Our review included the following of five-step process.

Step 1 Comprehensive Review of Instructional Sequences

This research consists of a comprehensive review of the Perkins V instructional sequence submissions provided by ICCB. We compared the dual credit courses submitted by various community colleges to the corresponding Illinois Model Programs of Study Guide's recommended course sequence. This data was uploaded into a spreadsheet for analysis. We reviewed 31 submissions from 17 different colleges. The chart below outlines the industry sectors, colleges, and academic programs.

Step 2 Detailed Analysis Using the Illinois Program of Study Expectations Tool

The data were further analyzed using the [Illinois Program of Study Expectations Tool](#) as a reference. ICCB and the Illinois Center for Specialized Professional Support created the tool to help community colleges develop, improve, and evaluate programs of study. This tool was designed to be an interactive instrument to help ensure pathways are meeting both the federal program of study requirements and the high standards set in Illinois. It is intended to be used by a self-review team.

We utilized the "Quality Component 3 (Instructional Sequence)" section to review the submissions, paying close attention to dual credit courses and submission adherence to the Illinois Model Programs of Study Guide's course sequence descriptions and mappings. We noted courses that were comparable to the corresponding guide's course sequence. We identified the overlapping components outlined in the Program of Study Expectation Tool and Illinois Model Programs of Study Guides. The components included the design elements and expectations noted in Table 1.

Step 3 Classification of Sequences by Quality Rubric

The components listed in Step 2 were used to categorize institutions' programs of study,

indicating the level of alignment to the corresponding Illinois Model Programs of Study Guide. The categories are as follows:

- Model Program of Study Exceeds Expectations
- Model Program of Study Meets Expectations
- Model Program of Study is Working Towards Expectations

The categories listed correspond with the level of alignment categories outlined in the Illinois Program of Study Expectations Tool. Each community college's pathway submission alignment is categorized by color in Table 2.

Step 4 Interviews & Deeper Analysis of Select Institutions/Programs

We selected ten institutions with various levels of alignment for an interview and deeper analysis. The purpose of the interview process was to better understand the decision-making process of various institutions as they designed the course sequence. The interview participants consisted of discipline-specific faculty, dual credit/early college staff, and an upper-level college administrator such as a dean, vice president, or provost. For each industry sector, the colleges selected for an interview were:

- Education:
 - Triton College
 - College of DuPage
- Health sciences and technology:
 - Rend Lake College
 - Kankakee Community College
 - Waubonsee Community College
- Information technology:
 - Black Hawk College
 - Moraine Valley Community College
- Manufacturing and engineering:
 - Southwestern Illinois College
 - Lewis and Clark Community College
 - Parkland College

Table 1: Overlapping components outlined in the Program of Study Expectation Tool and Illinois Model Programs of Study Guides

DESIGN ELEMENTS

The curriculum:

- Consists of aligned and non-duplicative secondary and postsecondary elements
- Includes a coherent sequence of courses that may lead to an associate degree or higher
- Includes strategic dual credit opportunities in CTE and/or academic courses
- Incorporates WBL opportunities

The programs of study allow for:

- Multiple entry and exit points and stackable credentials
- Building and/or increasing students' "college knowledge" in order to make informed decisions

The programs of study are supported by:

- Articulation agreements
- Data-sharing agreements

EXPECTATION

- Sequences are aligned with Illinois state standards
 - Sequences are coordinated and non-duplicative across the specific high school and college (may include career exploration activities in middle school)
 - Completers are prepared to attain a postsecondary credential, certificate, associate degree, or higher
 - Local dual credit agreement reflects the strategic dual credit opportunities in the Model Programs of Study curriculum
 - Evidence of alignment efforts aimed at reducing remediation
 - Sequences are aligned with industry standards
-
- Sequences demonstrate evidence of curricular mapping
 - Are part of a larger "stackable" curriculum
 - Informing all students of postsecondary and career options is infused into the pathway, which may include the use of the PaCE framework
 - Where appropriate, include entry and exit points that accelerate opportunities for adult education learners, veterans, and students in non-credit programs
-
- Based on Illinois Articulation Initiative (IAI) or agreements are regularly reviewed and updated
 - Use relevant local data
 - Dual credit agreement

We asked the participants the following questions:

- Tell us more about why this institution selected these particular courses for dual credit. Please walk us through this course sequence. How did you decide to offer the selected dual credit courses?
- How has your college navigated teacher credentialing for the dual credit courses offered?
- What is your college and/or department's philosophy on dual courses in this pathway?
- How did the college navigate student eligibility requirements for the dual credit courses offered?
- Did your department reference the Illinois Model Programs of Study? How helpful was this guide?
- Were other courses considered? If so, what were they? Why were they omitted?
- What steps are being taken to provide equitable access to dual credit courses?

- Fun Question: Your institution has an unlimited amount of funds to implement dual credit courses. How are you going to spend the money?

The responses to these questions are interwoven in the narrative of the findings section of this report.

Step 5 Summarized Data & Synthesized Recommendations

In our findings, we share the number of colleges that submitted pathways, general information about the submissions, and an analysis of dual credit course alignment based on the Model Programs of Study Guides course sequence. In addition, each section includes a narrative that discusses the qualitative data gathered from the interviews. Lastly, we share synthesized recommendations.



Table 2: Community College Pathway Submissions

SECTOR	ACADEMIC PROGRAM	LEVEL OF ALIGNMENT
IT *	Cybersecurity	● Exceeds Expectations
	Network Systems	● Exceeds Expectations
ED *	Education	● Exceeds Expectations
IT	Computer & Information Science	● Exceeds Expectations
	Computer & Information Technology	● Exceeds Expectations
ED	Early Childhood	● Exceeds Expectations
IT *	Cybersecurity	● Exceeds Expectations
MFG	Industrial Technology	● Exceeds Expectations
	Precision Machining Technology	● Exceeds Expectations
	Welding & Fabrication Technology	● Exceeds Expectations
HST	Dental Hygienist	● Meets Expectations
HST	Nursing	● Exceeds Expectations
HST	Nursing	● Meets Expectations
IT	Computer Information Systems	● Exceeds Expectations
HST *	Medical Laboratory Technology	● Meets Expectations
	Nursing	● Exceeds Expectations
	Radiography	● Meets Expectations
MFG *	Welding Technology	● Exceeds Expectations
IT	Health Information Technology	● Meets Expectations
IT *	Computer & Local Area Network Technician	● Meets Expectations
MFG	Welding	● Exceeds Expectations
IT	Network Administration & Support	● Working Toward Expectations
MFG *	Architecture & Construction	● Exceeds Expectations
HST *	Nursing	● Exceeds Expectations
IT	Information Technology	● Exceeds Expectations
MFG *	Welding Technology	● Exceeds Expectations
ED *	Early Childhood Level II	● Exceeds Expectations
	Early Childhood Level III	● Exceeds Expectations
	Early Childhood Level IV	● Exceeds Expectations
IT *	Computer Information Systems	● Meets Expectations
HST *	Medical Assistant / CNA / Phlebotomy	● Exceeds Expectations

Notes:

- The sector abbreviations are: education (ED), health sciences and technology (HST), information technology (IT), and manufacturing and engineering (MFG)
- An asterisk (*) Indicates interview participants

Findings

In this section, we share the results of our research organized by industry sector: education, health sciences and technology, information technology, and manufacturing and engineering. We share the number of colleges that submitted pathways, analyses of dual credit course alignment based on the course sequence found in the corresponding Model Programs of Study Guides, and a narrative that discusses the qualitative data gathered from the interviews. Additionally, we include relevant references that support the work.

Education

In the education sector, we reviewed a sample of three different pathway submissions. All three institutions provide dual credit course offerings aligned with the Gateway ECE Level 2 Credential as suggested in the Early Childhood pathway within the Model Programs of Study Guide in Education. However, only two institutions submitted the Gateway ECE Level 2 Credential as part of their program of study application. Dual credit courses aligned with the Gateway ECE Level 2 credential tend to accelerate students towards the industry credential, allowing them to access entry-level positions in this field of work.

Although we reviewed only one submission aligned with both the elementary and secondary pathways in the Model Programs of Study Guide in Education, Diversity in Education was not offered in the pathway. While Diversity in Education courses are taught widely among

Snapshot // Education Pathways Submissions

3 college submissions received for 3 pathway programs:

- 2: Early Childhood Education
- 1: Elementary and Secondary Education

COLLEGES OFFERING ALIGNED COURSES	N	%
Courses aligned with a Gateway ECE Level 2 Credential	3	100%
Intro to Education course offered	1	33%
Health, Safety, and Nutrition course offered	1	33%
Diversity in Education/Education Workplace Experience course offered	0	0%
Human Growth and Development/Child Growth and Development course offered	0	0%

Figure 1: Model Programs of Study for Education Career-Focused Courses



community colleges, it was not a dual credit course offered at this particular institution. As we consider the nature of teaching and the importance of equity, the Diversity in Education course should be prioritized as a dual credit course. We suggest further exploring why this course is not prioritized.

Intro to Education was a selected course in the elementary and secondary pathway sequence. Additional analysis to explore if this course is not a popular choice among other institutions is needed, which may result in an update to the Illinois Model Programs of Study Guide in Education course sequence.

During our interview with Triton College, we learned that, in addition to offering courses aligned to the Gateway ECE Level 2 Credential, they offer ECE 110 Early Child Development, EDU 110 Diversity of Schools and Society, and ECE 118 Health, Nutrition & Safety as dual credit courses. These courses are offered on campus as well as asynchronously online. Combined, Triton course offerings fulfill both the Skill Development and Capstone/Advanced course sequence outlined in the early childhood education and elementary/secondary pathways. These course sequences and course modality options are excellent examples of the utilization of the Model Program Study Guide in Education.

Each institution's dual credit course offering submissions correspond to the recommendations in the Model Programs of Study Guide in Education. Each submitted course sequence offered at least one aligning dual credit course or multiple courses that fulfilled the Gateway ECE Level 2 Credential requirement.



Health Sciences and Technology

The Certified Nursing Assistant (CNA) role has a positive growth outlook in Illinois and is considered a stackable credential toward a nursing degree. We learned that most openings are created to replace workers who either move into more senior roles in the nursing industry or retire from the field. The CNA certification is one of Illinois’s most popular allied healthcare professions. This certification usually stacks well into a nursing degree program, and some community college programs require a CNA certification upon enrollment into a nursing degree program. Four of the five colleges that submitted pathways in this area provide course offerings that fulfill the CNA certificate course requirement.

In addition to the CNA program, one institution submitted course sequences leading to both medical assistant and phlebotomy credentials. These are also in-demand roles, but they do not meet our threshold for a living wage.

Intro to Anatomy and Physiology and Medical Terminology are taught as dual credit courses at two of the colleges interviewed. Academic data from Rend Lake College, one of the two colleges, suggested that students entering healthcare pathways typically need additional support in Intro to Anatomy and Physiology. Offering this course as dual credit is seen as an innovative way

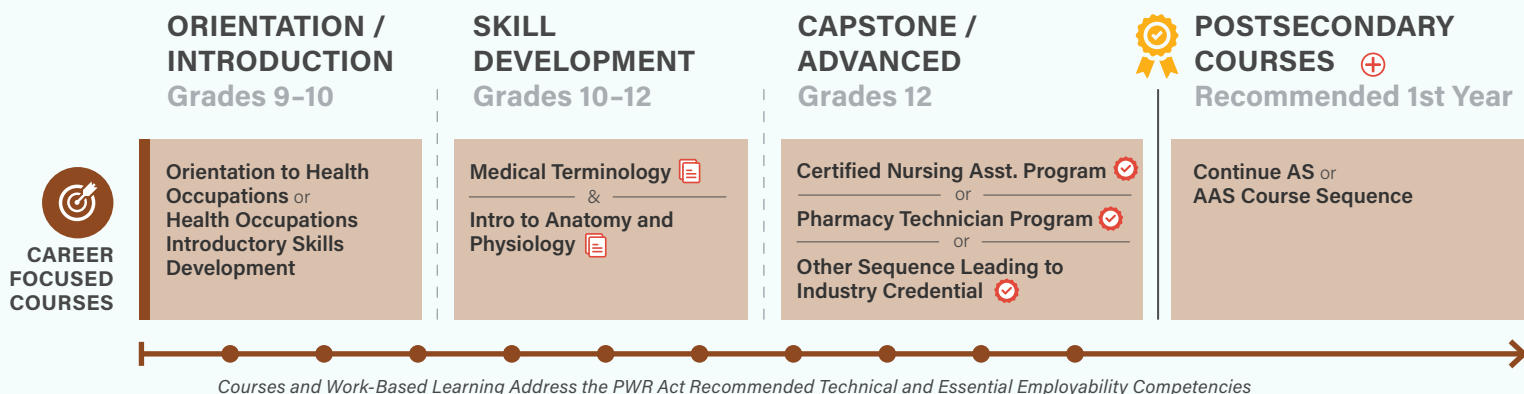
Snapshot // Health Sciences and Technology Pathways Submissions

6 college submissions received for 8 pathway programs:

- 4: Nursing
- 1: Dental Hygienist
- 1: Medical Assistant / CNA / Phlebotomy
- 1: Medical Laboratory Technology
- 1: Radiography

COLLEGES OFFERING ALIGNED COURSES	N	%
Orientation to Health Occupations course offered as a high school-level CTE course	2	40%
Medical Terminology course offered	2	40%
Intro to Anatomy and Physiology course offered as dual credit	2	40%
CNA program offered	4	80%
CNA/Pharmacy Tech/Other courses offered	4	80%
CNA, Medical Assistant, and Phlebotomy courses offered as instrustry credentialed dual credit	1	20%

Figure 2: Model Programs of Study for Health Sciences and Technology Career-Focused Courses



Findings

to support student success through early course exposure at this institution.

Health sciences and technology pathways offering an industry credential dual credit course and an additional dual credit course accelerate students the most towards degree attainment. This combination is ideal for overall student success. For example, both Rend Lake College and Waubensee Community College offer an industry credential course in addition to Medical Terminology as dual credit courses in their course sequence. Industry credentials prepare students for direct employment and college enrollment. Combining credential attainment with the dual credit course decreases a student's time and cost to college completion while simultaneously providing direct entry to employment.

Overall, each institution provided at least one course sequence that aligned with some part of the Model Programs of Study Guide in Health Sciences and Technology.



Information Technology

Information technology is a fluid and ever-changing industry. A vast number of industry credentials are available for students; however, not all available credentials align with what we define as a high-priority occupation.

Teacher shortages have negatively impacted IT pathways. The salary range of IT professionals is usually higher than other industries, requiring school districts and colleges to compete with high-paying industry roles. Recruiting and retaining qualified teachers to teach dual credit courses in this pathway is challenging, especially for the Computer Science course.² In addition, some school districts have prioritized purchasing teacher development programs and packaged curriculums that do not align with the Model Programs of Study Guide in Information Technology's recommended course sequence. These programs equip teachers of varying backgrounds to teach within this field; however, they do not prepare teachers to be qualified dual credit instructors or facilitate a professional development plan that would allow them to teach dual credit classes in IT while attaining the necessary credentials.

² "Landscape Report of K-12 Computer Science Education in Illinois": cs.education.illinois.edu/docs/librariesprovider22/default-document-library/illinois-k-12-computer-science-landscape-report-2021.pdf?Status=Master&sfvrsn=88060518_3

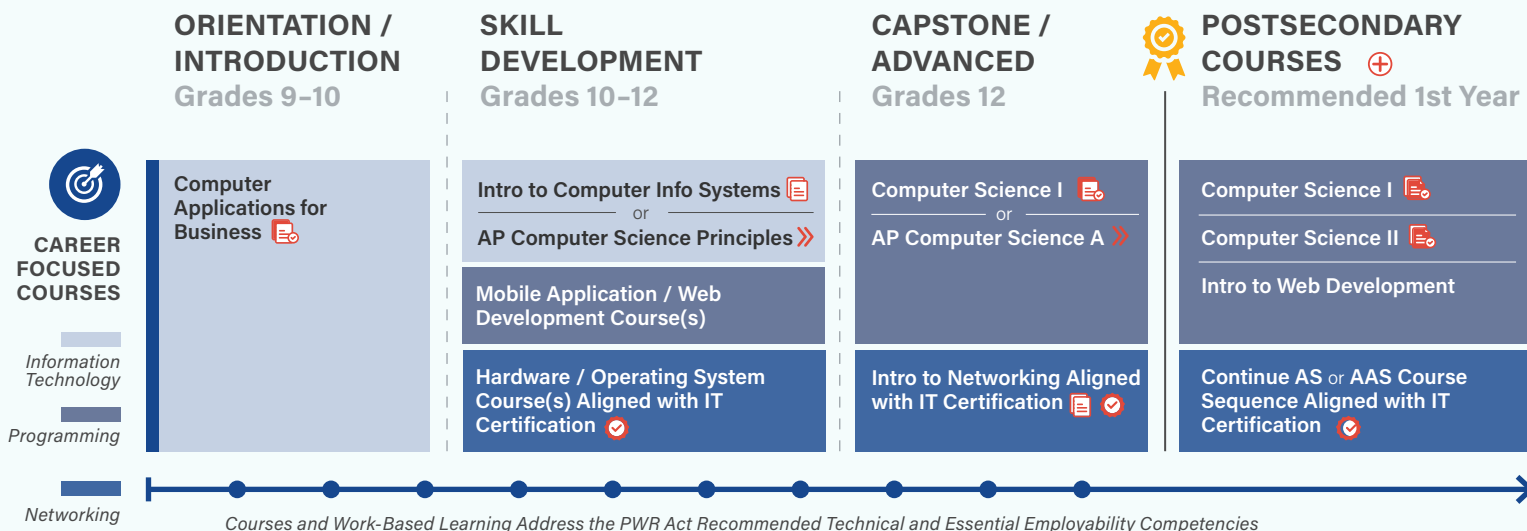
Snapshot // Information Technology Pathways Submissions

8 college submissions received for 11 pathway programs:

- 1: Computer and Local Area Network Technician
- 1: Computer and Information Science
- 1: Computer and Information Technology
- 2: Computer Information Systems
- 2: Cybersecurity
- 1: Health Information Technology
- 1: Information Technology
- 1: Information Technology - Network Systems
- 1: Network Administration and Support

COLLEGES OFFERING ALIGNED COURSES	N	%
Intro to Computer Information Systems/AP Computer Science Principles course offered	4	50%
Mobile Application Development/ Web Development course offered as dual credit	2	25%
Hardware/Operating System course offered as dual credit	2	25%
Computer Science I or AP Computer Sciences course offered	0	0%
Intro to Networking aligned with IT Certification	6	75%

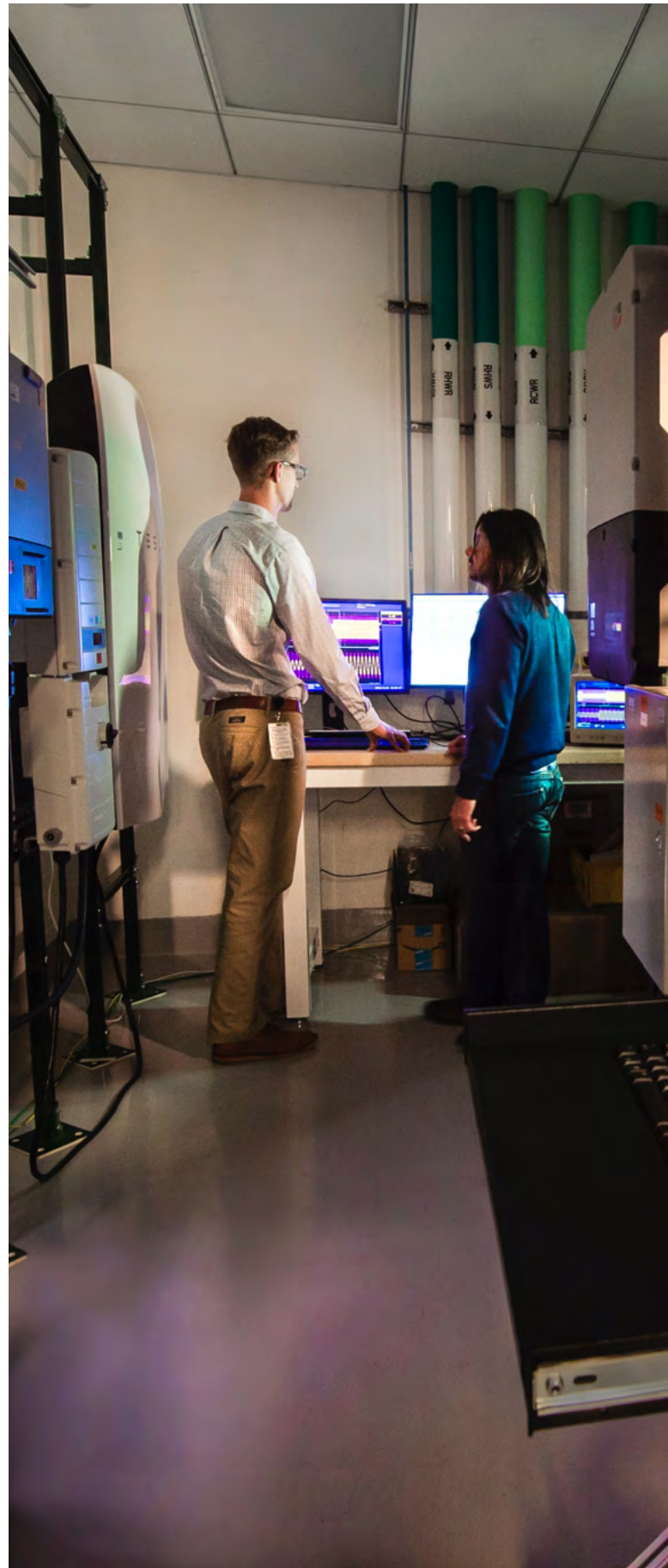
Figure 3: Model Programs of Study for Information Technology Career-Focused Courses



Findings

We reviewed the course offerings of eight different pathways from eight different colleges. Unfortunately, none of these colleges offered Computer Science I as an early college course. Six institutions offered Intro to Networking courses that aligned with an IT Certification. Four institutions offer Intro to Computer Information Systems as a dual credit course. Two institutions provided dual credit courses in Mobile Application Development/ Web Development and Hardware/ Operating Systems.

Although IT pathways included the most dual credit course offerings overall, the vast majority of these classes are not strategic offerings aligned with the course sequence in the Model Programs of Study Guide in Information Technology. Institutional submissions in this pathway presented the greatest opportunity to provide more courses that directly correspond to the Model Programs of Study Guide.



Manufacturing and Engineering

The community colleges that submitted pathways in manufacturing and engineering included dual credit course sequences in basic welding. In addition, one institution submitted two pathways that included Foundations of Production and Manufacturing as a dual credit course.

Institutions did not include Principles of Engineering, Advance Production & Manufacturing Process, and Computer Integrated Manufacturing as dual credit offerings. However, courses associated with welding, like Blueprint Reading (Welding) and Arc Welding, were offered at three of the five institutions interviewed.

Welding courses are more accessible to districts because high schools expressed already having the equipment and credentialed faculty available to teach these courses. Overall, the welding dual credit courses correspond to the Model Programs of Study Guide recommendations for an advanced manufacturing pathway. However, additional courses should be included to optimize the pathway offerings. Welding courses alone should not complete a course sequence in this area. For example, a quality pathway in manufacturing should include courses in addition to welding. According to the guide, Foundations of Production & Manufacturing Processes is a recommended skill development dual credit course, and Advanced Production and Manufacturing Processes is an additional

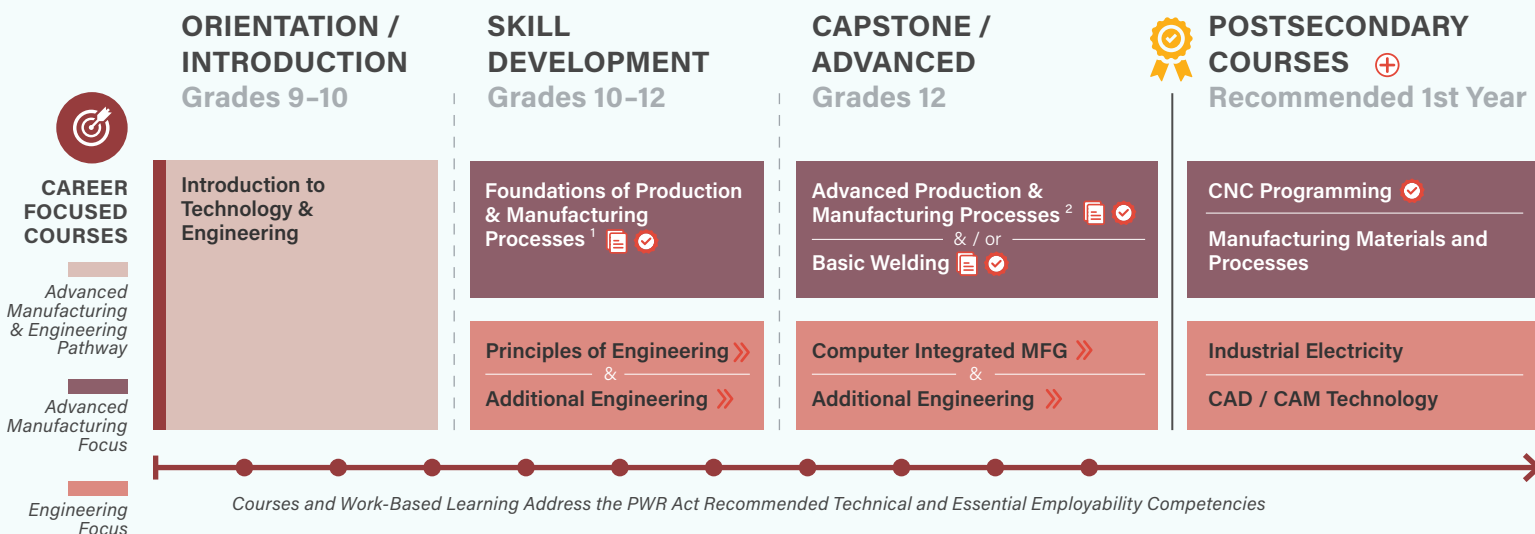
Snapshot // Manufacturing and Engineering Pathways Submissions

5 college submissions received for 7 pathway programs:

- 1: Architecture and Construction
- 1: Industrial Technology
- 1: Precision Machining Technology
- 1: Welding
- 1: Welding & Fabrication Technology
- 2: Welding Technology

COLLEGES OFFERING ALIGNED COURSES	N	%
Foundation of Production and Manufacturing course offered	2	25%
Principles of Engineering course offered	0	0%
Advanced Production & Manufacturing Process course offered	0	0%
Basic Welding course offered	5	100%
Computer Integrated Manufacturing course offered	0	0%

Figure 4: Model Programs of Study for Manufacturing and Engineering Career-Focused Courses



Findings

capstone/advanced course that helps to complete this pathway.

Most institutions that submitted pathways are located in rural areas where welding is an in-demand occupation.

There is an opportunity to encourage institutions and high school districts to consider offering dual credit courses in the following pathways: machining and production, maintenance and process operations, engineering, and automation, as mapped in the guide. These courses lead to credentials that are valued in high-priority occupations, offering students a salary well above our identified living wage threshold.



Conclusion & Recommendations

In conclusion, EdSystems' research of the utilization of the Illinois Model Programs of Study Guides led to various recommendations on how to improve community colleges and their partner districts' dual credit course alignment. In addition, the research supports increasing the guides' overall usage statewide and identifies curriculum-related barrier reduction strategies.

Recommendations

The recommendations are listed in no particular order.

We recommend continued support and technical assistance centered around the Model Programs of Study Guides. Although these guides were published in 2020, districts are still adjusting their curriculum to align with the pathways. Institutions enjoy learning from our organizational resources and each other. A common practice we employ when facilitating communities of practices is allowing space for information sharing. We recommend cohorting institutions by specific industry sectors during community of practice sessions to encourage the exchange of best practices.

We recommend supporting professional development plans, investing in professional career pathways, and other innovative ideas to encourage teacher credentialing. This type of support will optimize teacher requirements for industries that are most impacted by the teacher shortage. Teacher credentialing issues were most prevalent in information technology. Institutions struggled with finding qualified teachers to teach in this industry area and competing with comparatively high corporate salaries. This sector had the highest amount of random dual credit course offerings.

We recommend increased support for labor market data analyses. Institutions expressed needing additional support in researching, mapping, and offering pathways that lead to high-priority occupations. The labor market data contained in the guides are based on statewide averages. Institutions are interested in learning more about mapping high-priority occupations to regional labor market data. In addition, labor market trends have drastically changed since 2020, and we have better tools that accurately account for this fluctuation. Labor market data should be continuously updated regularly.

We recommend further exploration of the following Model Programs of Study courses and/or course sequences. In education, further investigation is needed to examine if Diversity in Education is offered widely as dual credit. According to our research, none of the institutions

we interviewed or collected pathway submissions from offered this course as dual credit.

In information technology, colleges need additional support for selecting high-priority dual credit course offerings to help avoid dual credit IT courses that are not a part of a course sequence or pathway. In addition, we encourage the development of online or hybrid options for the modality of key courses, such as Computer Science I, as a strategy to rectify the shortage of teachers.

In manufacturing and engineering, rural colleges need additional support in developing dual-credit manufacturing courses, particularly for welding. We found that rural school districts commonly utilized a series of welding courses as a complete course sequence within the program of study. According to the guide, a manufacturing pathway should include a skill development dual credit course, Foundations of Production & Manufacturing Processes, and Basic Welding. Again, welding courses should be a part of the course sequence, not “the” course sequence.

In health sciences and technology, course sequences should include a dual credit industry credential and an additional dual credit course. According to the guide, courses such as Medical Terminology and Intro to Anatomy and Physiology are a part of the course sequence along with an industry credential such as Certified Nursing Assistant or Pharmacy Technician. A CNA should be a part of a course sequence, not “the” course sequence. We recommend that institutions receive clarity and support on implementing this pathway comprehensively.

We recommend further exploration of how institutions can provide students with equitable dual credit course enrollment opportunities. For example, some colleges and their high school districts have age requirements for dual credit course enrollment, while others do not and thus allow freshmen or sophomore students to enroll. Institutions are also interested in opportunities to increase dual credit course access to vulnerable student populations. However, they need tools and funding to support this type of work.

