Statewide Model Programs of Study
Manufacturing and Engineering

Thank you for joining!
We will get started shortly.
Agenda

Quick Notes:

● Highly encourage Q&A and Chat Box
● This webinar is being recorded
● Slide deck will be linked in the chat

• Welcome from ICCB and EdSystems
• Background on Model POS Guides
  • Policy Alignment
  • Role of Advisory Committee
• Model POS Mapping Process
• Review of POS Guide for Manufacturing and Engineering
• POS in Action: Rock Valley College
• Feedback and Next Steps
Welcome from Illinois Community College Board

Janelle Washington
Director for CTE
EdSystems Staff

Jon Furr
Executive Director

Juan Jose Gonzalez
Pathways Director

Meagan Mitchell
Pathways Manager
The EdSystems Mission
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.

College & Career Pathways
Bridges to Postsecondary
Data Impact & Leadership

Statewide
Community Networks
Strategic Projects
Background on Model Programs of Study
Why Develop Statewide Model Programs of Study?

The primary purposes and goals for the Model Programs of Study Guides are to:

• 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.

• Identify priority dual credit and early college courses that are foundational to the industry area and well-situated for statewide scaling and articulation.

• 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.

• Identify entry points for employers to support coursework and related experiences.
Why Develop Statewide Model Programs of Study? Pt. 2

Intended audiences:

• High school faculty working in pathways
• Community College faculty and staff (e.g. academic deans & department heads, early college liaisons, etc.)
• Education for Employment System Directors

Subsequent Presentations

• November = Manufacturing and Engineering
• January = Information Technology
• February = Agriculture, Food, and Natural Resources
State Pathways Model

Individualized Planning
Career Focused Instruction
Work-Based Learning
Core Academics

Secondary Pathway
Internships / CDE
Low-Skilled Jobs
Semi-Skilled Jobs
Middle-Skilled Jobs
Advanced-Skilled Jobs

Postsecondary Pathway
AA/AAS
BA/BS

Stackable Credentials

Pathway Endorsement

OUTCOMES:
Credential Attainment
& Labor Market / Economic Development
INDIVIDUAL PLAN
Each student completing an endorsement must have an individualized plan, which includes college planning linked to early understanding of career goals, financial aid, resume, and personal statement.

PROFESSIONAL LEARNING
Awareness, exploration, and preparation activities that provide opportunities for students to interact with adults in their workplace

<table>
<thead>
<tr>
<th>9th</th>
<th>10th</th>
<th>11th</th>
<th>12th</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least 2 career exploration activities or 1 intensive experience</td>
<td>60 cumulative hours of paid or credit supervised career development experience with a professional skills assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least 2 team-based challenges with adult mentoring</td>
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</tbody>
</table>

Through these experiences, a student gains essential employability and technical competencies in their identified sector.

CAREER-FOCUSED INSTRUCTIONAL SEQUENCE
Two years of secondary coursework, or equivalent competencies, that articulate to a postsecondary credential with labor market value. Must include at least 6 hours of early college credit.

<table>
<thead>
<tr>
<th>9th</th>
<th>10th</th>
<th>11th</th>
<th>12th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation / Introduction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skill Development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capstone / Advanced Courses</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

ACADEMIC READINESS
Ready for non-remedial coursework in reading and math by high school graduation through criteria defined by district and local community college.
Policy Alignment

- Postsecondary and Workforce Readiness Act
- Career and Technical Education
- Dual Credit
- Teach Illinois: Strong Teachers, Strong Classrooms
- Every Student Succeeds Act (ESSA)
- College & Career Readiness Indicator
- A Plan to Revitalize the Illinois Economy and Build the Workforce of the Future
State Pathways Policy Framework: College, Career and Life Ready

Accelerated Towards a Career Area
- Multiple years of coursework, increasing commitment to the field
- Emphasis on Early college coursework in “Career-focused” subjects
- Courses go Beyond Traditional High School CTE and Industry Credentials, include Complementary General Education Courses

Academically Ready for College
- Required success in College-Level, career-focused coursework and electives
- Required placement college-level placement in Math and English (through collaboration with local Community College)

Foundational Skills for All Careers
- General employability and entrepreneurial skills embedded in HS experience
- Student have a familiarity with work-based setting and robust experience in problem-based learning
2020 Guides

- Education
- Health Sciences
- Information Technology
- Manufacturing and Engineering

edsystemsniu.org/guides

2021 Guides

- Agriculture, Food and Natural Resources
- Architecture, Construction and Energy
- Arts and Communications
- Finance and Business Services
Role of Advisory Committee

Expertise and guidance:
- What are trends in the industry that aren’t reflected in Labor Market Information?
- What credentials/degrees are emerging as most promising in the field?
- How does our desk analysis relate to on-the-ground implementation?
- What are future of work implications for this sector?

Inform key decision-points in this process:
- Pathway map approach
- Selecting strategic early college credit courses
- Identifying key competencies (building from existing State technical competencies)
Mapping Process
Model Programs of Study Mapping Process

6 month process
Model Programs of Study Mapping Process

1. Identify High-Priority Occupations
2. Determine Promising Credentials & Map Stackable Degrees/Certificates
3. Identify Strategic Community College Courses
4. Map Secondary to Postsecondary Sequence
5. Define Related Technical Competencies
High Priority Occupations & Promising Credentials

- Using Department of Labor data and the MIT Living Wage Calculator for the State of Illinois as a reference, High Priority Occupation defined
  - Occupations with a positive growth outlook and
  - Occupations whose salaries are near or greater than the “Living Wage” of 1 Adult + 1 Child in Illinois.

- A “promising credential” is a degree or college certification that immediately prepares an individual for entry into a high-priority occupation, with a focus on credentials available in typical Illinois Community College.
  - Credential may also be a clear precursor to or stackable credential for a high-priority occupation.
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Accountants and Auditors</td>
<td>33.89</td>
<td>Yes</td>
<td>Yes</td>
<td>Bachelor's Degree</td>
<td>5,510</td>
<td>8%</td>
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<tr>
<td>Business Operations Specialist</td>
<td>36.81</td>
<td>Yes</td>
<td>Yes</td>
<td>Bachelor's Degree</td>
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<td></td>
</tr>
<tr>
<td>Financial Analyst</td>
<td>39.29</td>
<td>Yes</td>
<td>Yes</td>
<td>Bachelor's Degree</td>
<td>1,310</td>
<td>7%</td>
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<tr>
<td>Actuary</td>
<td>49.34</td>
<td>Yes</td>
<td>Yes</td>
<td>Bachelor's Degree</td>
<td>140</td>
<td>23%</td>
</tr>
<tr>
<td>Market Research Analysts and Marketing Specialists</td>
<td>29.15</td>
<td>Yes</td>
<td>Yes</td>
<td>Bachelor's Degree</td>
<td>2960</td>
<td>22%</td>
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<tr>
<td>Human Resource Specialist</td>
<td>28.79</td>
<td>Yes</td>
<td>Yes</td>
<td>Bachelor's Degree</td>
<td>2230</td>
<td>6%</td>
</tr>
<tr>
<td>First-Line Supervisor of Retail Sales Workers</td>
<td>18.74</td>
<td>No</td>
<td>Yes</td>
<td>High school diploma</td>
<td>5,620</td>
<td>3%</td>
</tr>
<tr>
<td>First-Line Supervisor of Office &amp; Administrative Support Workers</td>
<td>28.3</td>
<td>Yes</td>
<td>No</td>
<td>High school diploma</td>
<td>4,450</td>
<td>0%</td>
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<tr>
<td>First-Line Supervisor of Non-Retail Sales Workers</td>
<td>34.04</td>
<td>Yes</td>
<td>Yes</td>
<td>High school diploma</td>
<td>1,070</td>
<td>3%</td>
</tr>
<tr>
<td>Human Resource Assistant</td>
<td>19.49</td>
<td>No</td>
<td>No</td>
<td>Postsecondary nondegree award</td>
<td>380</td>
<td>-4%</td>
</tr>
<tr>
<td>Lodging Manager</td>
<td>21.62</td>
<td>No</td>
<td>Yes?</td>
<td>High school diploma or equivalent</td>
<td>180</td>
<td>9%</td>
</tr>
<tr>
<td>Insurance Claims and Policy Processing Clerks</td>
<td>19.94</td>
<td>No</td>
<td>Yes</td>
<td>High school diploma or equivalent</td>
<td>1090</td>
<td>10%</td>
</tr>
</tbody>
</table>
Common CC Programs

Guided Transfer
- Business AA
- Accounting AA
- Actuary AA

Business AAS, with specialities/certs
- General
- Insurance
- HR
- Entrepreneurship
- Management
- Marketing
- Hospitality

Supply Chain
- Supply Chain AAS, AA/AS

Accounting
- Accounting AAS

Leading to Occupations/Careers

Entry Level Bachelor’s Degree Positions
- Business Operations Specialist OR Financial Analyst OR Market Research Analysts OR Human Resource Specialist
- Accountants and Auditors
- Actuary

Small/Local Business
- First-Line Supervisor of Retail Sales Workers OR Office & Administrative Support Workers OR First-Line Supervisor of Non-Retail Sales Workers
- Human Resource Assistant OR Lodging Manager OR Insurance Claim Clerk

Supply Chain
- Supply Chain Manager OR Production, Planning, & Expediting Clerks

Clerk Roles
- Payroll & Timekeeping, OR, Bookkeeping, Accounting, & Auditing Clerk, OR Billing and Posting Clerks

** Aligns with ISBE CTE Program of Study Matrix

^^Degree Stacks
Model Programs of Study Mapping Process

1. Identify High-Priority Occupations
2. Determine Promising Credentials & Map Stackable Degrees/Certificates
3. Identify Strategic Community College Courses
4. Map Secondary to Postsecondary Sequence
5. Define Related Technical Competencies
Identify Strategic Community College Courses

- Analyze “promising credential” program requirements at various Community Colleges in the state

- **Tally and label** all of the “career-focused” & “general education” courses across programs to determine which of these courses:
  - Are most common across targeted programs,
  - Are more likely accessible for dual credit, and
  - Have the potential for transferability and currency (through the Illinois Articulation Initiative) or have industry credentials
## Identify Strategic Community College Courses

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Common Name</th>
<th>Prerequisites</th>
<th>IAI Code</th>
<th>Notes</th>
<th>Sum</th>
<th>Is course a key Prereq for other courses</th>
<th>IAI Course?</th>
<th>Accounting AA</th>
<th>Accounting AAS</th>
<th>Insurance AA</th>
<th>Business Administration</th>
<th>Advanced Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business 111</td>
<td>Business 111</td>
<td>None</td>
<td></td>
<td></td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Business 181</td>
<td>Financial Accounting</td>
<td>Financial Accounting College Level Math Pla BUS 903</td>
<td>9</td>
<td></td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Business 182</td>
<td>Managerial Accounting</td>
<td>Managerial Accounting Business 181 BUS 904</td>
<td>9</td>
<td></td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

*Note: IAI Code and Notes column values are placeholders for actual course codes and notes.*
Model Programs of Study Mapping Process

- Identify high-priority occupations
- Determine promising credentials & map stackable degrees/certificates
- Identify strategic community college courses
- Map secondary to postsecondary sequence
- Define related technical competencies
Map Secondary to Postsecondary Sequence

- Recommend early college courses reasonably accessible to HS students, goal is to at least get 6+ career-focused credit hours by HS graduation
- Keep open possibility for unique opportunities, i.e. work-based learning or capstone course
- Consider typical teacher and faculty credentials, as well as course delivery and approval processes
- Suggest initial post secondary courses and sequences that continue to accelerate student
- Recommend sequence in general education subject areas, including early college and AP supplements
Model Programs of Study Mapping Process

1. Identify high-priority occupations
2. Determine promising credentials & map stackable degrees/certificates
3. Identify strategic community college courses
4. Map secondary to postsecondary sequence
5. Define related technical competencies
Define Related Technical Competencies for Key Courses

• Select foundational courses in each Model Programs of Study area
  • Courses map to multiple credentials within the industry area,
  • Can be accessed for early college credit at secondary level, and
  • Not currently recognized by the IL Articulation Initiative (IAI)

• Determine a set of technical competencies for each course (i.e. learning objectives)
State of Illinois
Model Programs of Study Guide:
Manufacturing and Engineering

October 2020

Review of the Manufacturing and Engineering Guide
<table>
<thead>
<tr>
<th>Program</th>
<th>Typical Job</th>
<th>Near or Above Living Wage Threshold for 1 Adult + 1 Child</th>
<th>Median Hourly Wage</th>
<th>Growth in IL: Annual Job Openings</th>
<th>Growth in IL: % Change Over 10 years</th>
<th>Stackable?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welding</td>
<td>Welders, Cutters, Welder Fitters</td>
<td>N</td>
<td>$19.28</td>
<td>1,540</td>
<td>5%</td>
<td>Not Typically Stackable</td>
</tr>
<tr>
<td>Machine Tool Technology</td>
<td>Tool and Die Makers</td>
<td>Y</td>
<td>$25.34</td>
<td>450</td>
<td>-5%</td>
<td>Typically Stacks to Related Bachelor’s Program at Select IL Universities</td>
</tr>
<tr>
<td>Precision Machining</td>
<td>Machinists</td>
<td>N</td>
<td>$19.44</td>
<td>3,630</td>
<td>4%</td>
<td>Typically Stacks to Further Certificates or an AAS</td>
</tr>
<tr>
<td></td>
<td>Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic</td>
<td>Y</td>
<td>$25.65</td>
<td>160</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>Industrial Maintenance</td>
<td>Industrial Machinery Mechanics</td>
<td>Y</td>
<td>$26.41</td>
<td>1,240</td>
<td>10%</td>
<td>Typically Stacks to Related Bachelor’s Program at Select IL Universities</td>
</tr>
<tr>
<td>Process Technology</td>
<td>Chemical Equipment Operators and Tenders, Biofuels Processing Technician</td>
<td>Y</td>
<td>$24.95 - $33.87</td>
<td>200</td>
<td>1% - 3%</td>
<td></td>
</tr>
<tr>
<td>Computer Integrated Manufacturing &amp; Mechatronics</td>
<td>Manufacturing Engineering Technologists, Electromechanical Engineering Technologists, Robotics Technicians</td>
<td>Y</td>
<td>$30.26 - $30.48</td>
<td>460</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Guided Transfer: Engineering</td>
<td>Engineers in Various Branches: Mechanical, Civil, Electrical, Chemical, Mechatronics, Industrial</td>
<td>Y</td>
<td>$40.65 - $44.51</td>
<td>3,760</td>
<td>4% - 12%</td>
<td>Typically Stacks to Related Bachelor’s Program at Most IL Universities</td>
</tr>
</tbody>
</table>

3. Living wage calculations are based on MIT’s Living Calculator (livingwage.mit.edu), where the “Living Wage” for 1 Adult + 1 Child is $26.27/hour for the state of Illinois. “Near” defined as 85% of the statewide living wage, which is $22.33/hour.
4. U.S. Department of Labor, CareerOneStop (careeronestop.org/explorecareers)
POSTSECONDARY OPTIONS

1. **WELDING**
   - **Welding Certificates**
   - **Welding AAS**

2. **MACHINING & PRODUCTION**
   - **Precision Machining & Production Certificates**
   - **Precision Machining & Production AAS**
     - **Additional Advanced Certificates**
     - **Machine Tool Tech AAS**

3. **MAINTENANCE & PROCESS OPERATIONS**
   - **Industrial Maintenance AAS**
   - **Process Operations AAS**
     - **Bachelor’s of Science Applied Manufacturing**

4. **ENGINEERING & AUTOMATION**
   - **Computer Integrated Manufacturing & Mechatronics**
     - **Associate in Engineering Science (AES)**
   - **Guided Transfer: Engineering**
CAREER FOCUSED COURSES

Introduction to Technology & Engineering

Skills Development

Foundations of Production & Manufacturing Processes

Advanced Production & Manufacturing Processes

Computer Integrated MFG

CNC Programming

Manufacturing Materials and Processes

Industrial Electricity

CAD / CAM Technology

WORK-BASED LEARNING

Career Exploration (2)

Team-Based Challenge

Career Development Experience

Youth Apprenticeship

Team-Based Challenge

Career Development Experience

Youth Apprenticeship

Postsecondary Courses +

Recommended 1st Year

If courses in this column were accomplished through early college credit, students should take the next required course in the sequence or, if none, additional AAS or Major Courses

1. For machining-focused programs, equivalent to ISBE CTE Courses — Beginning Machining and Machine Shop Technology

2. For machining-focused programs, equivalent to ISBE CTE Course — Machine Shop Technology II
<table>
<thead>
<tr>
<th>ORIENTATION / INTRODUCTION</th>
<th>SKILL DEVELOPMENT</th>
<th>CAPSTONE / ADVANCED</th>
<th>POSTSECONDARY COURSES + Recommended 1st Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades 9-10</td>
<td>Grades 10-12</td>
<td>Grades 12</td>
<td></td>
</tr>
<tr>
<td><strong>SCIENCE</strong></td>
<td><strong>SCIENCE</strong></td>
<td><strong>Physics</strong></td>
<td><strong>General Physics</strong></td>
</tr>
<tr>
<td>Science Sequence</td>
<td>Science Sequence</td>
<td></td>
<td>General Chemistry</td>
</tr>
<tr>
<td><strong>SOCIAL SCIENCE</strong></td>
<td><strong>SOCIAL SCIENCE</strong></td>
<td><strong>Social Science</strong></td>
<td></td>
</tr>
<tr>
<td>Social Science Sequence</td>
<td>Social Science Sequence</td>
<td></td>
<td>Social Science</td>
</tr>
<tr>
<td><strong>MATH</strong></td>
<td><strong>MATH</strong></td>
<td><strong>Transitional Math:</strong></td>
<td><strong>Technical Math</strong></td>
</tr>
<tr>
<td>Algebra</td>
<td>Geometry</td>
<td>Technical Math</td>
<td></td>
</tr>
<tr>
<td>Geometry</td>
<td>Algebra 2</td>
<td>Transitional Math: Technical</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre-Calculus</td>
<td>Transitional Math: STEM</td>
<td></td>
</tr>
<tr>
<td><strong>ENGLISH</strong></td>
<td><strong>ENGLISH</strong></td>
<td><strong>Transitional English</strong></td>
<td><strong>College Algebra / Trigonometry</strong></td>
</tr>
<tr>
<td>English Sequence</td>
<td>English Sequence</td>
<td>Transitional English</td>
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<td></td>
<td>College Algebra / Trigonometry</td>
</tr>
<tr>
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<td>Calculus</td>
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<tr>
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<td><strong>English Composition</strong></td>
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<tr>
<td></td>
<td></td>
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<td>Oral Communication</td>
</tr>
</tbody>
</table>

- **AP or Dual Credit**
- **Dual Credit Course**
- **Dual Credit Course Affiliated With IAI Code**
- **Course or Program Prepares for Industry Credential**
- **Postsecondary Course Affiliated with IAI Code**
- **College and Career Pathway Endorsement Earned**

If courses in this column were accomplished through early college credit, students should take the next required course in the sequence or, if none, additional AAS or Major Courses.
Goal: Students build pathway awareness, excitement, and foundational knowledge.

Competencies:

- Students can demonstrate awareness of the career pathways in advanced manufacturing and engineering in order to plan a personalized pathway leading to a promising credential.

- Students can demonstrate awareness of and have exposure to the range of manufacturing processes including fabrication, machining, non-durable good production, additive manufacturing, and robotic automation in order to contextualize their instruction in the field.

- Students can use their understanding of safety practices and PPE in order to demonstrate a safety mindset when navigating a manufacturing environment.

- Students can use their understanding of simple hand and power tools in order to identify, correctly set-up, and safely operate them.

- Students can use their understanding of simple machines to describe how levers, gears, pulleys, and other simple machine components work.

- Students can use their understanding of basic concepts in layout, print reading, measurement, and quality practices in order to describe the steps in the design and development process.

Students have engaged in career exploration activities that include virtual and in-person site visits to engineering firms, manufacturers of both durable and non-durable goods, and engagement with guest speakers.

Students have documented a personalized career pathway leading to a promising credential in Advanced Manufacturing or Engineering.
SKILL DEVELOPMENT
Foundations of Production & Manufacturing Processes (Minimum 3–6 Dual Credit Hours)

Goal: Students engage in teacher-directed machining applications.

Competencies (scaffolding upon Orientation competencies):
- Students can use their understanding of safety principles in equipment usage, practices, and procedures in order to maintain a secure work environment and safely engage in manufacturing processes.
- Students can use their understanding of personal safety and environmental regulations to comply with local, federal, and company health and safety demands.
- Students can use their understanding of basic machining or other automated production methods to conduct authentic projects under close adult direction and supervision.
- Students can apply basic concepts in layout, print reading, measurement, and quality assurance practices in authentic situations.
- Students can apply their understanding of supply chain logistics in an authentic situation involving the movement and storage of materials and products.

Students have engaged in:
- Additional virtual and in-person site visits to manufacturing and engineering employers;
- A job shadow with a professional in the field;
- At least one team-based challenge, such as a robotics team or SkillsUSA competition.

Students are prepared to attain:
- OSHA 10-hour course completion card and
- MSSC Safety + Quality Practices & Measurement or

CAPSTONE
Advanced Production & Manufacturing Processes (Minimum 3–6 Dual Credit Hours)

Goal: Students are self-directed in production applications.

Competencies (scaffolding upon Skill Development competencies):
- Students can use their understanding of production applications and production process to, with minimal supervision, plan, calculate, and safely (i) machine a part meeting customer requirements (for courses aligned to NIMS) or (ii) make a product within a production system (for courses aligned to MSSC) meeting customer requirements.
- This competency addresses the following sub-competencies included with the PWR Advanced Manufacturing and Engineering Technical Competencies: Equipment Safety; Manufacturing Environment; Personal Health & Safety; Spatial Reasoning; Process, Design, & Development; Installation; and Customer Focus.
- Students can apply their understanding of supply chain logistics in authentic scenarios involving materials for the part or product and its distribution to the customer.

Students have engaged in:
- At least one additional team-based challenge, and
- A career development experience of a minimum of 60 hours with a manufacturer or engineering employer sponsor.

Students are prepared to attain:
- MSSC Certified Production Technician or
- NIMS Level I CNC Turning (Lathe) Operations + Mill Operations
Model Programs of Study in Action

Rock Valley College
Cara Schultz
Dean, Early College
c.schultz@rockvalleycollege.edu

Denise Anderson
Chair, Engineering & Technology
d.anderson@rockvalleycollege.edu

Rock Valley College
RVC REGIONAL PATHWAY
Advanced Manufacturing Pathway Starting Fall 2019

10th Grade Foundation Class
TBD

11th Grade Articulated Credit
MET 100
Introductory CAD and Print Reading

12th Grade Dual Credit
MET 110
Manufacturing Process I

12th Grade Dual Credit
MET 106
Metrology

Rock Valley College
RVC REGIONAL PATHWAY
Mechatronics Starting Fall 2020

10th grade Articulated Credit
MET 100
Introduction to CAD and Print Reading

11-12th Grade Dual Credit
MEC 110
MEC 111
MEC 112

ELECTRICAL

11-12th Grade Dual Credit
MEC 120
MEC 121
MEC 122

GRAPHICS

11-12th Grade Dual Credit
MEC 130
MEC 131
MEC 132

ROBOTICS

Rock Valley College
WHERE WE ARE

• PLTW articulated agreements EGR 101 - Intro to Engineering (since 2019)
• Districts exploring MET 110 - Manufacturing Processes I for school year 2022-2023
  • Implemented at an alternative high school campus since 2019
• Partnering with EFE on dual credit boot camps and dual credit instructor professional development (Solidworks and industry drafting standards)

• Expanding interest to other districts
• New Bridge Coordinator position
CHALLENGES

- Equipment costs
- Originally identified pathways courses were not practical for implementation
- Tracking articulated course rosters

- Lack of familiarity and use of SolidWorks and industry drafting standards within the high schools
- Fast paced industry changes; MATLAB
- Planning & implementation of program updates
- Post-secondary to secondary faculty connection
- Manufacturing advisory committee fell dormant
SUCCESSES

• Commitment to re-establish advisory committees in partnership with EFE
  • BILT model advisory
  • Same industry partners
  • Connection point for secondary & postsecondary faculty
• Partnership with Early College and academic department in adjusting recommended POS for dual credit
• Summer dual credit instructor boot camps developed in collaboration with EFE, Early College, and academic department for professional development and continuous program improvement

• School districts working towards allocating funds to equipment purchases
• Summer Manufacturing & Engineering bridge programs reimplemented summer 2021
MET Dual Credit/Dual Enrollment Options
What’s Next?

- Launching master course templates in Canvas LMS with Center for Instructional Design, Teaching & Innovation (CITI)
  - Professional Learning Community for secondary dual credit instructors
  - Additional connection point for secondary & postsecondary faculty
  - Access to college curriculum and shared resources

- Full implementation of manufacturing, engineering, and mechatronics pathways
- Exploring integration of transitional STEM math into the pathway
- Partnering on work based learning initiatives
- Focus on assessments and design to drive curriculum plans
- Emphasis on continuing summer bridge programs
- Connecting with peer institutions
Something still circling in my mind is...

Something that squares with my thinking is...

3 Takeaways I have are...
Share Your Feedback

Survey QR Code

https://niu.az1.qualtrics.com/jfe/form/SV_4VhZXbPLe740vC6
Survey Questions

1. Model Programs of Study
   Assess the implementation of the Model Programs of Study.

2. Advisory Committee
   Assess the effectiveness of the committee or join an upcoming committee.

3. Webinar Review
   Assess the effectiveness of the Webinar session.
Next Steps:
Upcoming Statewide Model Programs of Study Webinars

Information Technology
January 11, 2022 | 2–3:30 p.m.

Agriculture, Food, and Natural Resources
January 25, 2022 | 2–3:30 p.m.

Architecture, Construction, and Energy
February 22, 2022 | 2–3:30 p.m.

Finance and Business Services
March 15, 2022 | 2–3:30 p.m.

Arts and Communications
April 19, 2022 | 2–3:30 p.m.
Next Steps:
Potential Statewide Model POS Guides Creation

Select from the following:

- HUMAN & PUBLIC SERVICES (Non-Education)
- CULINARY & TOURISM (Culinary and Hospitality)
Explore the Resource Hub and sign up for the newsletter

Highlight and explore innovative models for work-based learning, initial focus on virtual

Build connections among communities to share best practices, learnings and resources

Identify needs for state policy changes or support systems

Engage in conversations on creating sustainable, high-quality models that provide broader and more equitable access, focusing on building social capital for Black and Latinx students
Thank You

Guides: edsystemsniu.org/guides