Academic and Career Planning, Programs of Study, & Career Pathways

DPI ACP Conference 2016

Click HERE for opening slideshow.
Key Topics Today

1. Why POS and Career Pathways?
2. POS and Career Pathways in relation to ACP
3. Choosing a framework that is right for your district
   a. POS Framework
   b. Example: Information Technology/Computing
   c. Example: Health Science
   d. Example: Engineering
Key Topics Today

1. **Why POS and Career Pathways?**
2. **POS and Career Pathways in relation to ACP**
3. **Choosing a framework that is right for you**
4. **Case Study of the School District of New Berlin**
   a. POS Framework
   b. Example: Information Technology/Computing
   c. Example: Health Science
   d. Example: Engineering
rel-e-vance **n.**

1. Pertinence to the matter at hand. **Relevance** is a term used to describe how pertinent, connected, or applicable some information is to a given manner.
The “assumed” career pathway is for students is to attend a 4 year degree program after completing an academic program of study in high school. On average, those that hold a 4 year degree will experience less unemployment and higher wages.

However,

- Nationally, only 30% of students successfully complete the “traditional” pathway
- Not all post-secondary programs of study have the same value in the projected work force
- Many graduate with no conception of what career they should pursue and/or how to pursue it (many end up un/under employed)
- There is an increased demand for jobs that don’t require a 4 year degree; but students are not informed how to access them.
Post-secondary Completion in Wisconsin

Postsecondary "Success"

*All postsecondary data from collegecompletion.chronicle.com - retrieved 11/5/2015

**WI Public 4-year Information Graduation Rates - Average**

<table>
<thead>
<tr>
<th>Year</th>
<th>2009-2010</th>
<th>2010-2011</th>
<th>2011-2012</th>
<th>2012-2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grad in 4 years</td>
<td>27%</td>
<td>28%</td>
<td>28%</td>
<td>29%</td>
</tr>
<tr>
<td>Grad in 6 years</td>
<td>60%</td>
<td>59%</td>
<td>60%</td>
<td>59%</td>
</tr>
</tbody>
</table>

Degrees/100: 20.3
Average $/degree: $63,710

**By School**

<table>
<thead>
<tr>
<th>School</th>
<th>6yr Rate</th>
<th>4yr Rate</th>
<th>By School</th>
<th>6yr Rate</th>
<th>4yr Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>UW-Madison</td>
<td>89%</td>
<td>55%</td>
<td>UW-Oshkosh</td>
<td>54%</td>
<td>17%</td>
</tr>
<tr>
<td>UW-LaCrosse</td>
<td>67%</td>
<td>36%</td>
<td>UW-River Falls</td>
<td>51%</td>
<td>23%</td>
</tr>
<tr>
<td>UW-Eau Claire</td>
<td>67%</td>
<td>27%</td>
<td>UW-Green Bay</td>
<td>46%</td>
<td>20%</td>
</tr>
<tr>
<td>UW-ST. Point</td>
<td>58%</td>
<td>22%</td>
<td>UW-Milwaukee</td>
<td>41%</td>
<td>13%</td>
</tr>
<tr>
<td>UW-Whitewater</td>
<td>55%</td>
<td>28%</td>
<td>UW-Superior</td>
<td>41%</td>
<td>14%</td>
</tr>
<tr>
<td>UW-Stout</td>
<td>54%</td>
<td>21%</td>
<td>UW-Parkside</td>
<td>31%</td>
<td>9%</td>
</tr>
<tr>
<td>UW-Platteville</td>
<td>54%</td>
<td>19%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
But do students know how to prepare for them?

What if a student’s talents lie elsewhere?
What is a Career Pathway?

A **Career Pathway** is a coherent, articulated sequence of rigorous academic and career/technical courses, commencing in the ninth grade and leading to an associate degree, baccalaureate degree and beyond, an industry recognized certificate, and/or licensure.

The **Career Pathway** is developed, implemented, and maintained in partnership among secondary and postsecondary education, business, and employers.
A student can choose between

- an entirely academic course of study or
- a mix of academic, technical, online, & dual-enrollment courses

States can set this context by

- ensuring high schools offer rigorous academics & several pathways for students to become college and career ready by graduation
- ensuring supports are available for students as they work to meet these higher expectations

Based on Accelerating the Agenda: Actions to Improve America’s High Schools, the 2009 report from the National Governors Association Center for Best Practices (NGA Center), National Conference of State Legislatures (NCSL), Council of Chief State School Officers (CCSSO) and National Association of State Boards of Education (NASBE)
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Begin with the end in mind……

Expect Excellence
School District of New Berlin

SDNB Vision of the Graduate (2013)

Wisconsin Graduates are College and Career READY

ALL STUDENTS IN WISCONSIN GRADUATE FROM HIGH SCHOOL ACADEMICALLY PREPARED AND SOCIALY AND EMOTIONALLY COMPETENT BY POSSESSING AND DEMONSTRATING...

Knowledge
Proficiency in academic content

Skills
Application of knowledge through skills such as critical thinking, communication, collaboration, and creativity

Habits
Behaviors such as perseverance, responsibility, adaptability, and leadership

These proficiencies and attributes come from rigorous, rich, and well-rounded public school experiences.
Education For Employment Legislation (Pl.26)

Objectives:

● Prepare all students for future employment
● Ensure technical literacy; to promote lifelong learning
● Promote good citizenship
● Promote cooperation among business, industry, labor, post-secondary schools, and public schools
● Establish a role for public schools in the economic development of WI

The legislation was revised to include Academic and Career Planning Services in grades 6-12.
If we implement ACP with fidelity, every student is considered a "Career and Technical Education" student.
The Rigorous Program of Study Design Framework Components:

1. Legislation and Policies
2. Partnerships
3. Professional Development
4. Accountability and Evaluation Systems
5. College and Career Readiness Standards
6. Course Sequences
7. Credit Transfer Agreements
8. Guidance Counseling and Academic Advisement
9. Teaching and Learning Strategies
10. Technical Skills Assessments
According to Carl Perkins, Programs of Study must:

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

Career Clusters
Career Pathways
Programs of Study
ACP

ACP

ACP
If we implement ACP with fidelity, students should **not be REQUIRED** to select a specific “career pathway” in high school.
**HIGH DEMAND CAREER CLUSTERS**

"Be Bold2" Report; Competitive WI, Inc.: October 2012

**Top Skill Clusters**
- Systems and Network Software Development
- Accounting and Financial Analysis
- Nursing and Health Related Professions
- Mechanical Engineering
- Metal Manufacturing

**Top Industry Sectors**
- Agriculture, Dairy & Food Processing
- Financial Services, Insurance, Real Estate
- Healthcare
- Manufacturing
- Transportation
- Water Management and Research

Student interest is generated by exposure and an understanding of the skills needed to secure future employment.
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New Pathways to Careers and College

“Programs that merge CTE, rigorous academic coursework, and career exploration opportunities, while creating clear pathways through high school, college, and beyond, are gaining momentum.”
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SCHOOL DISTRICT OF NEW BERLIN
COLLEGE & CAREER READINESS

“ALL IN!”

AWARENESS
Grades K-6
(All Students)
- Jump Into Your Future Day
- Junior Achievement BizTown
- Introduction to Academic and Career Planning

EXPOSURE
Grades 7-12
(Targeted by Grade Level)
- Careers and Communication Course
- Career Days and Field Experiences
- Academic and Career Planning
- Classroom Presentations
- Elective Coursework
- Co-curriculars

PREPARATION
Grades 9-12
(Personalized to Post-Secondary Plan)
- Experiential learning
- Technical training / credentials
- College-level coursework
- Employability & personal finance
- College fairs and college visits
- Career coaches
The SDNB Student Experience

➢ Rigorous Academics
➢ Personalized Goal Setting, Planning and Mentorship
➢ Embedded Career and Technical Education
➢ “Show What You Know”
➢ Strong post-secondary alignment
ACP in the SDNB

- Student Driven, Adult Supported
- Process FIRST (results in product)
- Supports “Life Ready” Skills: Goal Setting and Action Planning
- Supports Personal, Academic, Social and Career Goals
- Produces “Informed Consumers” of Post-secondary Education and Training
College and Career Readiness: Infrastructure

- District and Building Leadership
- Culture of Mentorship
- Career & Industry Exposure
- Core Coursework
- Elective Coursework
- Co-Curriculars
- Experiential Learning
- Industry Credentials
- Post-secondary Alignment

"Education is not the learning of facts, but the training of the mind to think."
-Albert Einstein
2013 - Identification of “Low Hanging Fruit”

- Our Education for Employment plan highlighted “points of light”, was not actively managed, and resulted in no systemic change.

- CTEERS reporting was based on available funding vs. measuring progress.

- We maintained different course guides at each secondary building.
  - Were not actively used by students/families.
  - No mention of Career Clusters/Programs of Study.
  - Included references to programs and articulation agreements that no longer existed.

- Course recommendations came from staff with minimal consideration of what students were interested in and/or interaction with industry and/or post-secondary education to ensure alignment.

- There were limited supports and services available to help students explore industries/careers of interest, participate in experiential learning opportunities, and/or earn industry credentials.

- Students were not succeeding in online coursework meant to provide additional opportunities.
Own your Voyage

2016-17 ACADEMIC & CAREER PLANNING GUIDE

PROGRAMS OF STUDY

ACADEMIC & CAREER PLAN INFO

Students in grades 7-12 create an Academic & Career Plan to guide their middle and high school learning experiences and set goals for themselves. The Academic & Career Planning process helps students connect what they are learning today to their post-high school plans.

PROGRAMS OF STUDY

Programs of Study allow students to explore courses and learning experiences that support various Programs of Study. Students may choose to take courses in several different Programs of Study.

COURSES OFFERINGS

Course Offerings are listed by department. Each listing includes the course length, number credits offered, pre-requisites, Programs of Study it is aligned to, and if the course offers college credit or includes an Industry credential.

CAREER & SERVICE LEARNING PROGRAM

The Career & Service Learning Program allows students to explore different career areas and the world of work. Through this program, students gain employability skills while earning credit for working and volunteering.
Program of Study:

Feedback was to keep it as the cluster level for maximum flexibility aligned to student goals.
Started with the Career Cluster Level (16)

- What Programs of Study should we highlight?
  - We chose personalized and broad

- What pathways do we give as examples?
  - Used Nebraska as a model
This cluster orientates students towards careers in health sciences, promoting health, wellness, and diagnosis as well as treating injuries and diseases. Some of the careers involve working directly with people, while others involve research into diseases or collecting and formatting data and information. Work locations are varied and may be in hospitals, medical or dental offices, laboratories, cruise ships, medevac units, sports arenas, space centers, or within the community.

Pathway Descriptions

- Biotechnology Research and Development: Workers study diseases to discover new treatments or invent medical devices used to directly assist patients or to improve the accuracy of diagnostic tests.
Key Questions

- What does “all means all” really mean?
- What if a student chooses not to select a POS/Pathway?
- What programming and supports do all students need?
- How will we decide which POS to “scale up”?
- When is a student “engaged” in a POS?
- What “additional” supports will be provided to students in an operational POS?
- When is a student “engaged” in a Career Pathway?
- What “additional” supports will be provided to students in established pathways?
- What “additional” supports are needed by student segment?
What constitutes an ‘Operational POS’ in the SDNB?

- related instruction, aligns secondary to post-secondary
- business and industry collaboration, mentorship
- project based (experiential) learning
- industry/career tours, presentations
- post-secondary campus tours
- opportunities for employment
- opportunities to earn industry credentials
- opportunities to earn college credit to align to post-secondary education plans (1+1, 1+1+2, 1+3, 2+2)

Students take ownership of setting their goals and developing personal action plans with active mentorship from community, industry, and post-secondary education partners.
How do we decide which Programs of Study (POS) to “upscale”?

- Projected workforce needs, identified gaps
- Student interests
- Ability to support *multiple* pathways
- Support from industry, post-secondary
- Alignment with future learning/employment environments
- Ability to foster entrepreneurial/systems design thinking (fuels innovation)
# POS “Infrastructure” in the SDNB

<table>
<thead>
<tr>
<th>POS Component</th>
<th>Internal programs, supports</th>
<th>External programs, supports</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Core</td>
<td>Determined by grade level and graduation requirements.</td>
<td>Summer semester/COP can be used to remediate and/or self accelerate.</td>
<td>Students take additional internal/external academic coursework as electives.</td>
</tr>
<tr>
<td>Career and Technical Education</td>
<td>Delivered through advisory and integrated into K12 standards.</td>
<td>WEF, Financial Literacy, Career Days, Industry Tours, Career Coaches</td>
<td>Available to all students and personalized through ACP.</td>
</tr>
<tr>
<td>Education Foundations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended Coursework</td>
<td>Defined broadly to support pathways to RA, WTCS, University</td>
<td>COP, YOP, Contracted Dual Enrollment</td>
<td>We do not limit these offerings to the legislative definition of CTE.</td>
</tr>
<tr>
<td>Experiential Learning</td>
<td>PLTW, CTSOs, CSBL, Co-curriculars</td>
<td>CSBL</td>
<td>Requires significant time/resources and community supports.</td>
</tr>
<tr>
<td>Industry Certifications</td>
<td>MSSC Safety, Quality CompTIA, MOS, MTA CNA OSHA 10</td>
<td>COP/YOP through WTCS</td>
<td>SDNB covers cost for all exams on ACT 59 list.</td>
</tr>
<tr>
<td>Opportunity to earn college credits</td>
<td>AP, TC, DE via contract offered on site</td>
<td>COP, YOP, WCTC DEA</td>
<td>Offer guidance and supports to complete 1-2 years of college prior to HS graduation.</td>
</tr>
</tbody>
</table>
Needed to Get Input!

- Postsecondary and industry Focus Groups
- Parent Focus Groups
- Student Focus Groups
- Content Specialist (Teacher) Feedback
  - Included site visits and phone calls (State and National)
- Administrative and Board Feedback
POS Focus Groups - General Findings

● Broaden exposure to post-secondary programs that lead to high demand careers

● Strengthen post-secondary alignment

● Embed relevant and rigorous learning experiences in program design

● There is a **perceived** value for portable credentials in area of interest
Sample Questions we asked in the Focus Groups

● What do you see in our Programs of Study guide that would or would not be helpful in a student exploring a pathway?

● What coursework and/or experiences would a student interested in this Program of Study need to graduate as an informed consumer of their post-secondary education/training?

● What certifications are most valued?

● What opportunities exist for new partnerships in this program of study?
What questions did we ask our parents?

● Overall, what do you see in our Programs of Study documents that would be helpful to a student exploring a pathway?

● Based on what you see in the sample POS, what might need clarification?

● What additional information or resources might you need to be able to engage your child in discussion around a Program of Study?

● What are any additional questions that you have regarding the Program of Study?
Rethinking high school ...
Capstone Learning

Advanced Innovation & Design
- Tech Start Up • Global Health Issues •
- Global Business • Automation Systems •
  • Public Policy Issues in Education •
Post-secondary Alignment

University of Wisconsin
COLLEGES

UNIVERSITY OF WISCONSIN SYSTEM

WAICU
WISCONSIN ASSOCIATION OF INDEPENDENT COLLEGES AND UNIVERSITIES

DEPARTMENT OF THE ARMY
UNITED STATES OF AMERICA

DEPARTMENT OF THE NAVY
UNITED STATES OF AMERICA

UNITED STATES MARINE CORPS

DEPARTMENT OF THE AIR FORCE
UNITED STATES OF AMERICA

UNITED STATES COAST GUARD
1790
UW Colleges Associates
Degree in High School
- Program Launch -
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IT/Computing

Pre-focus groups:

- Traditional CS courses, mostly done online delivery (low enrollment)
- Lack of post-secondary options for IT/CS
- Needed to build out IT and Computing course sequences
IT/Computer Science

Feedback:

○ Update pathways & certifications

○ Add coursework to support IT

○ Add PLTW CS/Software Engineering and App Development options
IT/Computer Science

What we did with the feedback:

- Added TechKNOW Help Desk Program
  - 1:1 device introduction with Chromebooks
  - Entry-level certifications
- Included Post-Secondary opportunities & Industry Tours
- Added AP Computer Science Principles/PLTW CS / Software Engineering offering
<table>
<thead>
<tr>
<th>POS Component</th>
<th>ACP Guidance: Students Interested in Information Technology and Computing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic, Career, and Technical Core</strong></td>
<td>Students are encouraged to select courses that allow them to work towards college level English, Math, and Science. All students are provided with learning opportunities to understand a variety of different industries as well as potential career pathways. A variety of academic, career, and technical standards are embedded into SDNB coursework and instructional strategies. Specific course selections are based on alignment to personal, academic, social and career goals. Recommended course sequences can be found in the ACP guide.</td>
</tr>
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</table>
| **Recommended Courses** | **Middle School Exploratory Courses:**  
● 7th grade Elective Wheel, Exploring Computer Science I&II, PLTW Gateway- Electricity & Robotics  
**SDNB 9-12+ Courses:**  
● **English:** Video Production I&II  
● **Math:** Financial Algebra, Statistics, Functions & Trig., Pre-Calculus  
● **Science:** Physics  
● **Computer Science:** Exploring Computer Science I&II, Computer Programming, Web Development I&II, Game design  
● **Art:** Digital Photography  
● **Capstone:** Advanced Innovation & Design, Career and Service Learning, PLTW EDD  
**College Experiences:**  
● **Math:** AP Stats, AP Calculus  
● **Science:** AP Physics I, AP Physics C  
● **Computer Science:** AP Computer Science A, AP Computer Science Principles, PLTW Computer Science Principles  
● **Engineering & Technology:** PLTW Digital Electronics  
● **Dual Enrollment Academy at WCTC:** IT Systems Specialist (19 college credits)  

Note: Youth Options/Course Options can also be leveraged to take additional post-secondary coursework based on your Academic and Career Plan.  

* Students are encouraged to consider electives from multiple Programs of Study to support personal, academic, social and career goals. For more courses that align to this Program of Study, see the crosswalk in ACP Guide. |
| **Experiential Learning** | SDNB TechKNOW, FIRST Robotics Team, SkillsUSA, Field Experience(s) |
| **Industry Certifications** | Desktop Pro, Network Pro, Client Pro, PC Pro, CompTIA A+, CompTIA Network+, MOS, MTA |
COURSE SELECTION FLOW CHART

Web Develop I (03932) → Web Develop II (03933)

Exploring CS I (03912) → Exploring CS II (03962) → AP Computer Science Principles (03927)

Computer Prog. (03970) → AP Computer Science A (03937)

Additional Computer Science Courses:

Game Design (03945)

PLTW Computer Science & Software Engineering (07006)

TechKNOW Hardware and Help Desk Experience: (01730)
Successes and Next Steps in IT/Computing

Celebrations:
- Hired IT TechKNOW students as SDNB summer interns
- More than tripled enrollment from 12-13 to 16-17
- Annual ‘IT/Computing’ industry tour

Next Steps:
- Personalized Certificates through IT TechKNOW Support
- Add a Data Structures course for additional post-secondary connections
- Local Competitions embedded in AP Computer Science courses
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Health Sciences

Pre-focus groups:

- Science department based classes including AP Biology, Anatomy and Physiology, and Medical Terminology.
- Identified significant decline in CNA enrollment (YOP)
Health Sciences

Feedback:

● Add CNA training, and encourage this for anyone considering any level of patient care.

● Expand offerings in non-patient care areas of Healthcare, such as records, and insurance.

● Continue to support and expand the science offerings in the Health Sciences area.
Health Sciences

What we did with the feedback:

- Developed on-site CNA program in the building, with specialized classroom and equipment. Training up to 20 students in this area each semester. Students are making better informed decisions on the pursuit of direct patient care careers.

- Added UW Waukesha Heredity course, offered for college credit.

- Added Project Lead the Way - Principles of Biomedical Science.

- Added HOSA as a CTSO
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</tbody>
</table>
| **Recommended Courses**            | **Middle School Exploratory Courses:** Enrollment in high school coursework with teacher recommendation. **SDNB 9-12+ Courses:**  
  - **Math:** Statistics  
  - **Science:** Human Anatomy and Physiology  
  - **Social Studies:** Psychology  
  - **PE/Health:** Nutrition  
  - **Capstone:** Advanced Innovation & Design, Career and Service Learning, AP Seminar and Research  

**College Experiences Available at SDNB:**  
- **Math:** AP Stats (not recognized by all post-secondary as a math class)  
- **Science:** PLTW Biomedical Engineering, AP Bio, AP Chem  
- **Social Studies:** AP Psychology  
- **Health Occupations:** Intro to Health Care Careers, Medical Terminology, Computing for Healthcare, Customer Service for Healthcare, Certified Nursing Assistant  

Note: Youth Options/Course Options can also be leveraged to take additional post-secondary coursework based on your Academic and Career Plan.  

* Students are encouraged to consider electives from multiple Programs of Study to support personal, academic, social and career goals. For more courses that align to this Program of Study, see the crosswalk in ACP guide. |
| **Experiential Learning**          | HOSA, Field Experiences |
| **Industry Certifications**        | CNA: On-site Certified Nursing Assistant program and test center. |
# 1
School District of New Berlin's pathway is designed to allow flexibility for students to earn transcripted credit, dual enrollment credit, and AP experiences that will maximize entrance and preparation for a 2 year, 2+2, or 4 year program. After taking the core and Youth Options coursework to the right, in addition to taking other SDNB graduation requirements, passing mandatory assessments (NLN-PAX and the ACT), and earning above a 3.0 GPA; students will be directly admitted to the WCTC’s nursing program after a petition.

**ADVANTAGE:** A student can work as a CNA during Step #1 and after the CNA course and can complete 3 years of WCTC coursework in 2 years.

# 2 at WCTC
First Semester: Nursing Fundamentals, Nursing Skills, Nursing Pharmacology, Nsg: Intro Clinical Practice
Second Semester: Nursing Health Alterations, Nursing Health Promotions, Nsg: Clin Care Across Lifespan, Nsg: Intro Clinical Care Management
Third Semester: Nsg: Complex Health Alterations 1, Nsg: Mental Health Comm Con, Nsg: Intermed Clin Practice, Nursing Advanced Skills

# 3
**ADVANTAGE:** Once step #2 is complete, and the Board Test NCLEx is passed, a student may work as a Registered Nurse (RN).

There are a number of 4-year colleges that have transfer agreements with WCTC and the SDNB to continue education in the nursing field:
http://www.wctc.edu/become-a-student/continuing-education/fignd-out.php
Please see the grid to determine what courses from the SDNB Nursing programs can be applied directly to a 4-year program at UW-Milwaukee.
Successes and Next Steps in Health Sciences

Celebrations:
- Above 90% pass rate for CNA
- Community partners provide employment to those CNA students with an interest in working
- Dramatic increase in HOSA enrollment
- Annual ‘Health Science’ industry tour

Next Steps:
- Evaluation of PLTW Biomedical Pathway
- Launch of Summer Health Care Academy
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Career Cluster/Program of Study Bubble Diagram

http://prezi.com/ajqzpzlugutnx/?utm_campaign=share&utm_medium=copy
Manufacturing

Pre-focus groups:

- Students could attend WCTC (provided the course was not program restricted)
- Construction was not running and used as a study hall room
- Strong Printing and Publishing program
- Partial PLTW Engineering pathway
Manufacturing

Feedback:

○ Focus on the Design and Problem Solving portion of Engineering

○ Transferable skills (including technical literacy)

○ Remember that good engineers need to understand manufacturing processes.

○ Need additional field experiences

○ MSSC provides a solid foundation, portable credential
What we did with the feedback:

- Added Introduction to Manufacturing class with embedded tours and site visits
- Added MSSC Safety and Quality Certification
- Opened back up the Construction sites and added UW Milwaukee’s Architecture course
- Added SkillsUSA as a CTSO
### ACP Guidance: Students Interested in Manufacturing

**Academic, Career, and Technical Core**

Students are encouraged to select courses that allow them to work towards college level English, Math, and Science. All students are provided with learning opportunities to understand a variety of different industries as well as potential career pathways. A variety of academic, career, and technical standards are embedded into SDNB coursework and instructional strategies. Specific course selections are based on alignment to personal, academic, social and career goals. Recommended course sequences can be found in the ACP guide.

**Recommended Courses**

**Middle School Exploratory Courses:**
- **Engineering and Technology**: Elective Wheel (Computer Science, Printing and Publishing, and PLTW Gateway: Engineering and Design), PLTW Gateway: Engineering and Design, PLTW Gateway: Electricity and Robotics, PLTW Gateway: Green Architecture

**SDNB 9-12+ Courses:**
- **Math**: Statistics
- **Engineering and Technology**: Introduction to Manufacturing, Construction I, Construction II, Printing and Publishing I, II, and III
- **Science**: Physics, Environmental Science
- **Business**: Concepts in Employability I & II, Entrepreneurship
- **Capstone**: PLTW Engineering Design and Development, Advanced Innovation and Design, Career and Service Learning

**College Credit Earning Opportunities:**
- **Math**: AP Statistics
- **Engineering and Technology**: PLTW Introduction to Engineering and Design, PLTW Principles of Engineering, PLTW Civil Engineering and Architecture, PLTW Digital Electronics
- **Science**: AP Chemistry, AP Physics I/II/C, AP Environmental Science

**Offsite College Experiences:**
- **WCTC Dual Enrollment Academy**: Tool and Die, Welding, Automation Systems, Printing and Publishing

*Students are encouraged to consider electives from multiple Programs of Study to support personal, academic, social and career goals. For more courses that align to this Program of Study, see the crosswalk in ACP guide.*

### Experiential Learning

**Field Experiences, Student Organizations**: Robotics, BUILD/Vintage Race Team, SkillsUSA, FutureCity

### Industry Certifications

OSHA 10, Revit Certified User, Inventor Certified User, MSSC Safety, MSSC Quality
Successes and Next Steps in Manufacturing/Engineering

Celebrations:
- Significant increase in construction enrollment
- Steady increase in engineering coursework enrollment
- Expansion of community partners willing to offer employment to interested students
- Annual ‘Manufacturing/Engineering’ industry tour
- Launch of a variety of CTSO’s that support many pathways

Next Steps:
- Evaluate what certifications are most applicable to construction.
CLOSING

- Examine what you are trying to improve and analyze gaps

- Personalize Programs of Study and Career Pathways to your local community

- Include Expert Partners to get feedback

- Continuous Improvement is Key!
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