Indiana office of CAREER & TECHNICAL EDUCATION
Governor's Workforce Cabinet

Next Level Programs of Study Educator Workshops April 20, 2021

CTE Learning that works for Indiana

April Educator Webinars

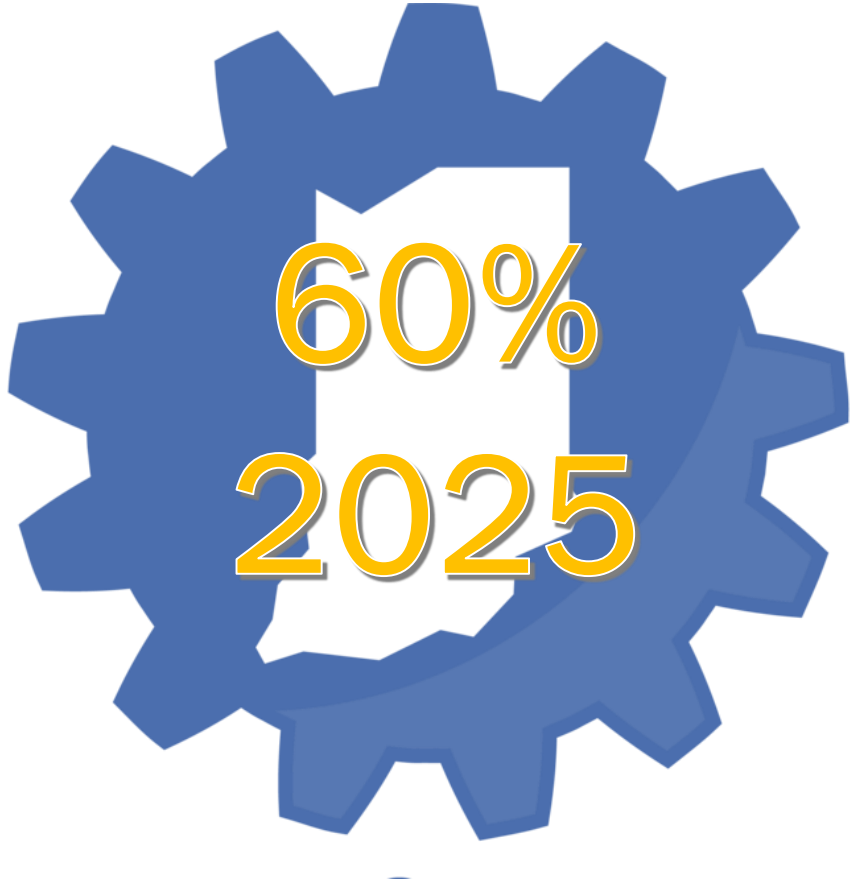
Time 3:30-4:45pm EST

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
18	19	20★ *Advanced Manufacturing, Architecture and Construction, Transportation*	21	22 *Health Science, Public Safety, STEM*	23	24
25	26	27 *Education and Training, Hospitality, and Human Services*	28 *Agriculture*	29 *Business Mgmt & Admin, Marketing, Finance, Arts, AV Tech & Comm, and Information Technology*	30	

Topics

- Why Next level Programs of Study (NLPS)?
- Introduction to NLPS
- Logistics
  - Graduation Timeline
  - Course Scope & Sequence
  - Enrollment
  - Funding
  - Assignment Codes
  - Dual Credit & Dual Enrollment

Talent Development Challenge



- **48.5%** of working-age Hoosiers have attained a post-secondary certificate or diploma.
- IN ranked #35 in the nation.
- Approximately **40%** of a high school cohort earns a credential within 6 years of graduation.

It's Time to Rethink CTE

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Why…

Don't CTE students have the chance to master the same skill set?

Don't more HS CTE students earn a stackable credential before they graduate?

Don't dual credits align and lead to specific credentials?

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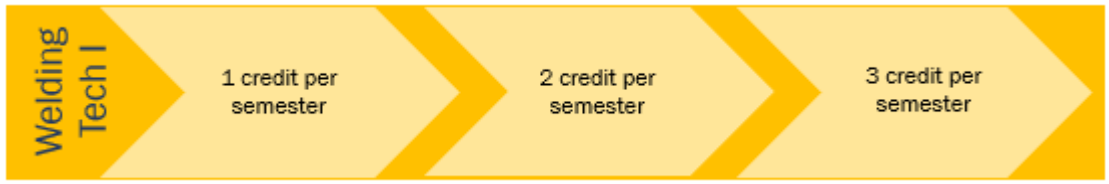
NLPS Structure

CURRENT



NLPS

NLPS Benefits

- Improves CTE consistency and quality across Indiana
- Direct Alignment to Postsecondary Courses and Credentials
- Provides CTE students an option equivalent to the ICC (STGEC)
- More opportunities to complete Indiana Graduation Pathways

Course Considerations

Advanced Manufacturing Welding Technology							
Principles		**CTE Concentrator A**		**CTE Concentrator B**		**Pathway Capstone**	
7110	Principles of Welding Technology	7111	Shielded Metal Arc Welding	7101	Gas Welding Processes		Welding Technology Capstone
ITCC	WELD 100		WELD 108 WELD 206		WELD 207 WELD 272		WELD 208 WELD 273 WELD 203 WELD 210
VU	WELD 107		WELD 102		WELD 103		WELD 104 WELD 105 WELD 106

Considerations

- Aligned to TC or CG
  - Earn CT 1st
- Postsecondary Prereqs
- Required contact hours
- Pairing related courses
- Courses not available for dual credit placed in capstone course.

Funding

Courses	IDOE Course Code	IDOE Course Name	Cluster	Credits Per Semester	Max Credits Allowed	CTE Funding Threshold	CTE Funding Level per S1 Credit/ Max Funding
Current	5776	Welding Technology I	Adv Manf	1-3	6	High Value Level 1	$680 / $2040
NLPS	7110	Principles of Welding Technology	Adv Manf	1	2	High Value Level 1	$680 / $680
	7111	Shielded Metal Arc Welding	Adv Manf	1	2	High Value Level 1	$680 / $680
	7101	Gas Welding Processes	Adv Manf	1	2	High Value Level 1	$680 / $680
Current	5778	Welding Technology II	Adv Manf	1-3	6	High Value Level 2	$1020 / $3060
NLPS		Welding Technology Capstone	Adv Manf	1-3	6	High Value Level 2	$1020 / $3060

Assignment Codes

- Required secondary teacher credential requirements are found in Assignment Codes from the DOE (document available on our NLPS resource webpage).
- Assignment codes for current courses have been aligned to their NLPS counterparts to ensure current instructors can teach the NLPS courses.

Code	Course Title	Bulletin 400	Rules 46-47	Rules 2002	REPA/ REPA 3
5776	Welding Technology I	• Standard Trade & Industrial: Welding & Cutting K-12	• Standard Trade & Industrial: Welding & Cutting 9-12 • Occupational Specialist I, II or III: Welding & Cutting 9-12	• CTE: Trade & Industrial: Welding Technology • Workplace Specialist: Welding Technology	• CTE: Trade & Industrial Welding 5-12 • Workplace Specialist: Welding 9-12
7110	Principles of Welding Technology				
7111	Shielded Metal Arc Welding				
7101	Gas Welding Processes				

Transition Plan

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2022 Cohort:
- **NLPS**
- **Perkins V**
- **Perkins IV**

2023 Cohort:
- **NLPS**
- **Perkins V**

2024 Cohort:
- **NLPS**
- **Perkins V**

2025 Cohort:
- **NLPS**

Courses	2021-2022 SY	2022-2023 SY	2023-2024 SY	2024-2025 SY
Current Courses Concentrator A and B from Perkins V (Not Introductory)	• No Changes	• Level I (1-3 Cr) Courses limited to 1 Cr/Sem	• Level II (1-3 Cr) Courses limited to 1 Cr/Sem • Some Current Courses may be phased out	• All Current Courses will be phased out or redesigned
NLPS Courses	• Concentrator Courses available • Schools Can Opt-In • Separate CTD, Fund Memo, & DC Crosswalk	• Capstone Courses Available • Full Implementation • All pathways converted to NLPS		• All Cohorts must be using NLPS Courses for Concentrator Status.

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Questions?

Review Doc - Overview

Course sequencing depends on prerequisites of each course

Capstones will be available starting with the 2022-2023 school year

Arts, AV Tech, and Communications Digital Design							
Principles		**CTE Concentrator A**		**CTE Concentrator B**		**Pathway Capstone**	
7140	Principles of Digital Design	7141	Digital Design Graphics	7136	Professional Photography and Videography	7246	Digital Design Capstone
				5550	Graphic Design and Layout		
				7138	Interactive Media Design		

students should choose only 1 course if multiple options are available

Review Doc – Course Framework

Course Description includes key topics indicating certain machinery, technologies, etc. may need to be used if offered as dual credit

ITCC: ADMF 102, INDT 113

VU: CIMT 100, CIMT 100L,

Advanced Manufacturing Technology	
Career Cluster	Advanced Manufacturing
Program of Study	Industrial Automation and Robotics
NLPS Sequence	Concentrator A
Course Code	7103
Course Description	*Advanced Manufacturing Technology introduces manufacturing processes and practices used in manufacturing environments. The course also covers key electrical principles, including current, voltage, resistance, power, inductance, capacitance, and transformers, along with basic mechanical and fluid power principles. Topics include, types of production, production materials, machining and tooling, manufacturing planning, production control, and product distribution will be covered. Students will be expected to understand the product life cycle from conception through distribution. This course also focuses on technologies used in production processes. Basic power systems, energy transfer systems, machine operation and control will be explored. This course will use lecture, lab, online simulation and programming to prepare students for Certified Production Technician Testing through Manufacturing Skill Standards Council (MSSC).*
Prereq(s)/Co-Req(s)	Principles of Advanced Manufacturing
Credits	Credits: 2 semester course, 2 semesters required, 1 credit per semester, 2 credits maximum
Counts Toward	Counts as a directed elective or elective for all diplomas
Additional Notes	
Postsecondary Course Alignment	ITCC: ADMF 102, INDT 113 VU: CIMT 100, CIMT 100L, CIMT 160, CIMT 160L
Postsecondary Credential	TC Automation and Robotics Technology (15.0613)
Liberal Arts/Sciences Requirements	ITCC: MATH 122 Applied Technical Mathematics; IVYT 113 Student Success in Technology
Promoted Certifications	MSSC Certified Production Tech

Indicates *Postsecondary Credentials* students can obtain

e.g. TC Automation and Robotics Technology (14.0613)

Indicates *Promoted Certifications* students can obtain

e.g. MSSC Certified Production Tech

Review Doc – Standards

CONTENT STANDARDS AND COMPETENCIES	
Competency #	**Competency**
Domain	***Shielded Metal Arc Welding***
7111.D1.1	Demonstrate electric welding equipment safety.
7111.D1.2	Understand and apply all shielded metal arc welding safety rules.
7111.D1.3	Identify the five basic welding joints.
7111.D1.4	Identify heat input and metal distortion.
7111.D1.5	Describe the capabilities of electric welding equipment.
7111.D1.6	Weld with A.C. and D.C. current.
7111.D1.7	Prepare and tack weld coupons.
7111.D1.8	Make single and multi-pass welds.
7111.D1.9	Weld in the flat, horizontal, vertical, and the overhead position.
7111.D1.10	Identify SMAW electrodes and AWS electrode classification.
7111.D1.11	Describe D.C. straight and reverse polarity.
7111.D1.12	Describe proper electrode manipulation for each type of electrode.
7111.D1.13	Describe proper correct technique for each welding position and electrode type.
7111.D1.14	Demonstrate ability to read and interpret technical documents.
7111.D1.15	Demonstrate ability to use various types of software applicable to course.
Domain	***Advanced Shielded Metal Arc Welding***
7111.D2.1	Describe differences in currents and polarities; AC, DC Reverse and DC Straight.
7111.D2.2	Explain how to safely use SMAW equipment.
7111.D2.3	Describe the AWS electrode identification system for SMA process.
7111.D2.4	Perform fillet welds on .5” to 1"plate (21-bead Multi-pass) in horizontal, vertical and overhead positions.
7111.D2.5	Describe how to control magnetic arc blow in DC welding of groove welds.
7111.D2.6	Prepare and tack groove welds as to AWS D1.1 Structural Steel Code.
7111.D2.7	Perform 3/8"and 1" groove welds as per AWS and ASME Code, in all positions.
7111.D2.8	Perform air carbon arc gouging on steel groove welds.
7111.D2.9	Describe heat input and metal warpage and distortion.
7111.D2.10	Describe methods of destructive and non-destructive testing.
7111.D2.11	Attain readiness to take American Welding Society certification exam

Domain indicates the Post-Secondary Course Name/Alignment

Competencies listed represent the secondary standards required for the course

Prepare and track groove welds as to AWS D1.1 Structural Steel Code.

Attain readiness to take American Welding Society certification exam

Pathway Options

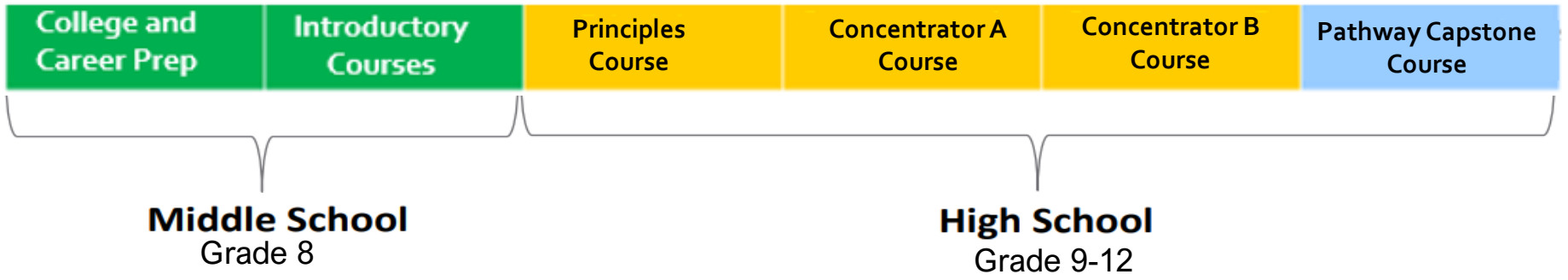
Enrolling Students			
Yr - Credits		Semester I	Semester II
1	2	7110 Principles of Welding Technology	
1	2	7111 Shielded Metal Arc Welding	
1	2	7101 Gas Welding Processes	

Secondary schools must follow the secondary course requirements in order to receive funding and for students to earn concentrator status.

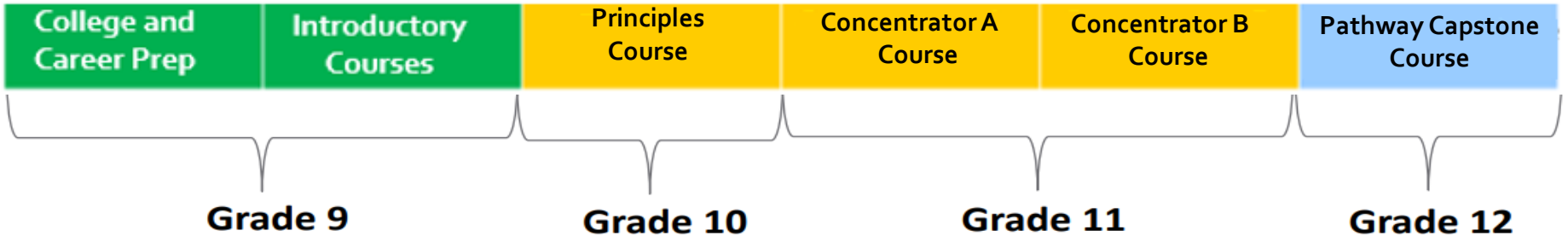
- Flexibility to have students take 1, 2, or 3 courses per year.
- Half-Day programs may enroll students in up to 6 credits in a pathway per year.

Pathway Timeline

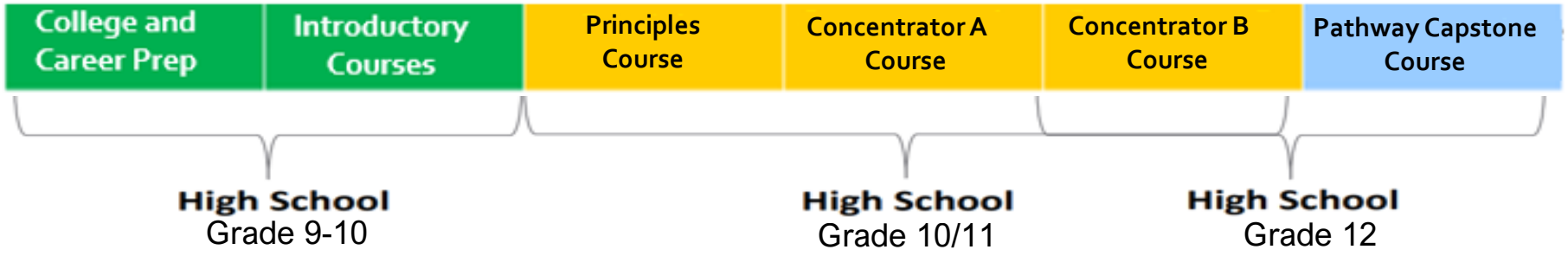
Single Course / Year



Combination



Multi Course / Year



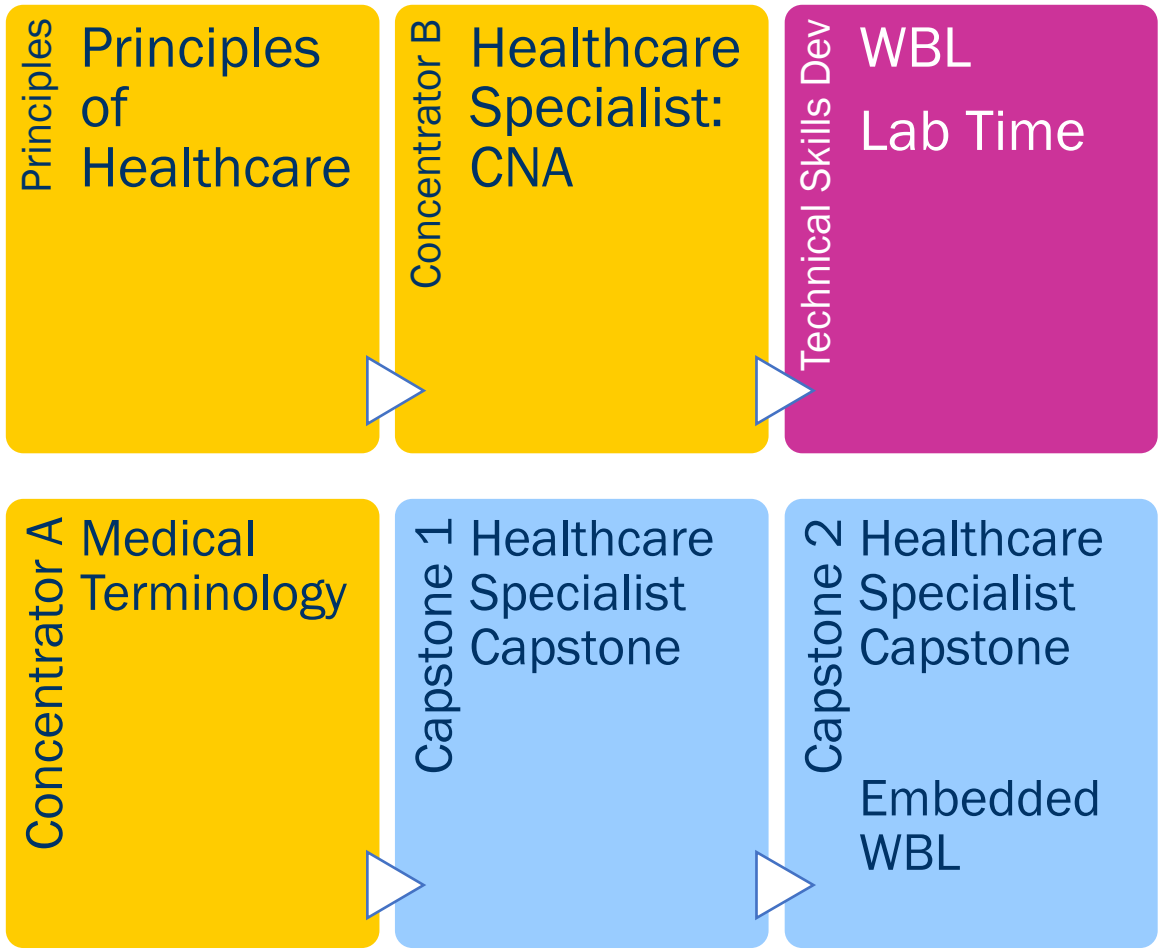
Principles Course

- Principles (preparatory) are often aligned to postsecondary course(s) required for certificates and Introductory courses (exploratory) are not
- Principles courses should be offered as part of a pathway**
- When are students ready to take a Principles course?
  - **Freshmen/Sophomore Year-** may make more sense in certain pathways (e.g., Ag and Business, applies to multiple pathways)
  - **Junior/Senior Year-** Principles course in pathways that are more trade-intensive (e.g., offered at Career Centers) or students who may not be ready for dual credits

***OCTE strongly* discourages offering a stand-alone Principles course

Technical Skills Development

- Optional for WBL during Concentrator sequence or to provide additional lab/hands-on time.
- Must be concurrently enrolled in a Concentrator A and/or Concentrator B course.
- Credits do not count towards Concentrator Status
- Funded as an Introductory course $300
- Meant as a supplemental course NOT a stand-alone



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Questions?

Dual Credit & Dual Enrollment

- NLPS courses have been directly aligned to postsecondary programs and courses whenever possible.
- We continue to work with ITCC, VU and 4-yr institutions to increase the number of courses available through dual credit.
- Schools are encouraged to offer the NLPS courses for college credit whenever possible but are not required.

***Dual credit* courses are:**

- Taught in a high school classroom
- Taught by a credentialed high school educator
- Dual Credit rates apply (Maximum of $25 per hour)

***Dual enrollment* courses are:**

- Taught by a faculty member of an eligible institution
- Generally held at the higher education institution
- Full Tuition rates apply

BOTH:

- Offer high school students secondary and postsecondary credits
- Are eligible for CTE State funding

Instructor Credentialing

- The secondary school and the academic unit of the institution work together to identify instructors for CTE dual credit courses and ensure credentials.
    - Varies according to pathway and courses
    - Additional trainings may be required
    - Credentialing requirements have not changed for NLPS

For questions regarding instructor credentialing at ITCC or VU:

- Ivy Tech Community College
    - K-14 Directors - https://www.ivytech.edu/dual-credit/#Dual%20Credit%20Contacts

- Vincennes University
    - Dr. Andrew Findlay- Dean of Career & Technical Early College, afindlay@vinu.edu
    - Heather Marchino – Project Excel, hmarchino@vinu.edu

Meeting Dual Credit Requirements

In addition to a credentialed instructor:

- ***Equipment and Facilities***- Many dual credit courses require equipment. However, if not offering for dual credit, equipment may not be required.
- ***Certifications***- Students may need to take an exam to earn dual credits.
- ***Curriculum Resources***- Textbooks and other resources, like software, may be required to teach the course.
- ***Contact Hours***- All students must complete contact hours. Most pathways have these required hours built into the course sequence.
- ***Pre-requisites***- Postsecondary prerequisites must be met for dual credits. Many of the prerequisites have been built into the course sequence.

Important to work through school administrators and dual credit contacts to ensure clarity

Course Mapping Options

Enrolling Students		
Yr - Credits		Semester I / Semester II
1	2	7110 Principles of Welding Technology
1	2	7111 Shielded Metal Arc Welding
1	2	7101 Gas Welding Processes

Curriculum Map for the Year		
1st 8-12 Weeks	2nd 12-16 Weeks	3rd 12-16 Weeks
7110 Principles of Welding Technology	7111 Shielded Metal Arc Welding	7101 Gas Welding Processes

Considerations

- Dual Credit Requirements
  - Are there prerequisites?
- Schedule
  - Single or Multi-Period day?
- Grading is a local decision. May want to consider a program grade if doing multiple classes.

Course Mapping and Sequencing

Advanced Manufacturing- Welding Technology- Concentrator B- 7101				
Questions to ask:			1st Semester	2nd Semester
Single or Multi-Period Day?	Single	Sequential	WELD 207 • Domain: Gas Metal Arc (MIG) Welding	WELD 272 • Domain: Advanced Gas Metal Arc Welding
Prerequisites?	Yes		COURSE TITLE: Advanced Gas Metal Arc Welding COURSE NUMBER: WELD 272 PREREQUISITES/CO-REQUISITES: WELD 207 Gas Metal Arc (MIG) Welding.	
	No			

Course Mapping and Sequencing

Transportation- Auto Service- Concentrator B- 7212						
Questions to ask:			1st Semester		2nd Semester	
Single or Multi-Period Day?	Single	Sequential	AUTI 122 • Domain: Introduction to Machining		AUTI 145 • Domain: Print Interpretation	
Prerequisites?	Yes No	Integrated	AUTI 122 Competencies: A,B	AUTI 145 Competencies: A,B	AUTI 122 Competencies: C,D	AUTI 145 Competencies: C,D

Course Mapping and Sequencing

Questions to ask :			1st Semester	2nd Semester
		Hour 1	Principles Course Domains: A,B,C,D	Principles Course Domains: E,F,G,H
Single or multi-period day?	Multi-period	Hour 2	Concentrator A Domains: A,B,C,D	Concentrator A Domains: E,F,G,H
Prerequisites?	Yes No	Hour 3	Concentrator B Domains: A,B,C,D	Concentrator B Domains: E,F,G,H

Course Mapping and Sequencing

Questions to ask :			1st 10-14 Weeks	2nd 10-14 Weeks	3rd 10-14 Weeks
		Hour 1	Principles Course	Concentrator A	Concentrator B
Single or multi-period day?	Multi-period	Hour 2	Principles Course	Concentrator A	Concentrator B
Prerequisites?	Yes	Hour 3	Principles Course	Concentrator A	Concentrator B
	No				

CTE Resources

- Visit the Office of CTE website for Next Level Programs of Study Resources:
  - NLPS Review Document
  - Master Pathway List
  - FAQ
  - Funding Levels*
  - NLPS Assignment Codes*
  - NLPS Webinars
  - Crosswalk- *Coming Soon* (in progress)

- *Updating soon

Questions

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- Hospitality & Tourism/ Human Services/ Law & Public Safety/ Transportation/ Education & Training

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- Health Science/ Business Management & Administration/ Marketing/ Finance/ Arts, AV Tech & Communication