What is pathway mapping and why do we do it?

CLP | Career Ladders Project

What is pathway mapping?

Pathway mapping is an opportunity for leaders and faculty to work collaboratively as a cross organizational Community of Practice as they sequence, align, and strengthen pathways. Teams map the current state of their pathways, conduct a gap analysis and begin strategic planning for areas that could benefit from increased collaboration.

Key areas explored in the mapping process include integrated instruction/curriculum, postsecondary transitions, integrated student supports, early college credit, aligned course sequences, and labor market information.

Each step on a pathway is DESIGNED explicitly to prepare students to progress to the next level of employment and/or education.

CLP Career Ladders Project

Crossing Boundaries to Develop Effective Pathways:

The development of pathways is an iterative process that involves engaging not only college personnel across roles and departments, but also industry, workforce development, and community partners. **Pathways are a comprehensive approach to education reform** which, when done well improves services to students with varied backgrounds: incumbent workers, re-entry students, veterans, adult school students, opportunity youth, and high school students, among others. **Often the work of career pathway development begins with CTE faculty, but it is quickly recognized as a post-secondary framework that benefits all students.**

https://www.careerladdersproject.org/wp-content/uploads/2013/11/Crossing-Boundaries-to-Develop-Effective-Pathways-Career-Development-Across-10-East-Bay-Community-Colleges.pdf

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Objectives of pathway mapping:

- Develop a shared understanding of current and desired pathway elements
- Map current pathway program elements and identify gaps and priority areas for collaborative development
- Develop a cross-organizational sector specific community of practice with self-identified priorities and work plans

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Components of a Career Pathway

- **Strategic partnerships** of employers, education and training providers, community based organizations, etc. in key industries and occupational groups.
- **Multiple ways to enter and exit** postsecondary pathways, with marketable credentials at each step. (e.g. high school, one stops, basic skills, colleges). Especially important for students in time-limited workforce pgrms, such as Veterans, TANF, WIA, EDD, etc.
- **Active participation by employers** — might be in pathway development, worksite training, internships, and/or financial support for worker learning — to address regional workforce needs.
- **Innovations in program content and delivery** (e.g new technical certificates and diplomas, contextualized basic skills, flexible class schedules, combinations of online and face-to-face instruction).
- **Support services**, such as career and academic coaching, financial aid, access to public benefits, etc. Can partner with CBOs on this.

Career Pathways Toolkit: Six Elements for Success
https://www.careerladdersproject.org/wp-content/uploads/2014/11/CareerPathwaysToolkit2011.pdf

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Components of a pathway map:

- Bridge Programs and other summer offerings
- High School Courses (general and CTE)
- Early college credit opportunities
- Community College Degrees and Certificates
- Industry Certifications
- Integrated Student Services
- Jobs and Wages
- Work-based learning
- Anything that can support the growth of the pathway!

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Why we create pathway maps

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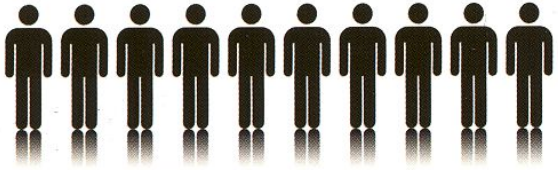
We are losing students:



Out Of Ten 9th Graders

3 Drop Out

3 Work After Graduation

4 Go To College

Out Of 4 College Students

2 Drop Out

1 Under Employed

1 Employed In Chosen Career

Nationally, each year students dropping out represent $1.5 trillion in lost lifetime earning potential, in California $21 billion

SOURCE: Alliance for Excellent Education, "The High Cost of High School Dropouts: What the Nation Pays for Inadequate High Schools," (Washington, DC: 2011) at https://all4ed.org/reports-factsheets/the-high-cost-of-high-school-dropouts-what-the-nation-pays-for-inadequate-high-schools/

How can pathway mapping help?

What do community college students say?

“I found out about a lot of resources after the third or fourth semester, and I’m like ‘Wow. These exist. It’s too late for me to join that now.”

Integrated and Proactive Student Support

“This is the third time that I came back, and this time, I took the career assessment. I wish that I would have taken that the very first time because it would have set my path and maybe things wouldn't have been so out of reach.”

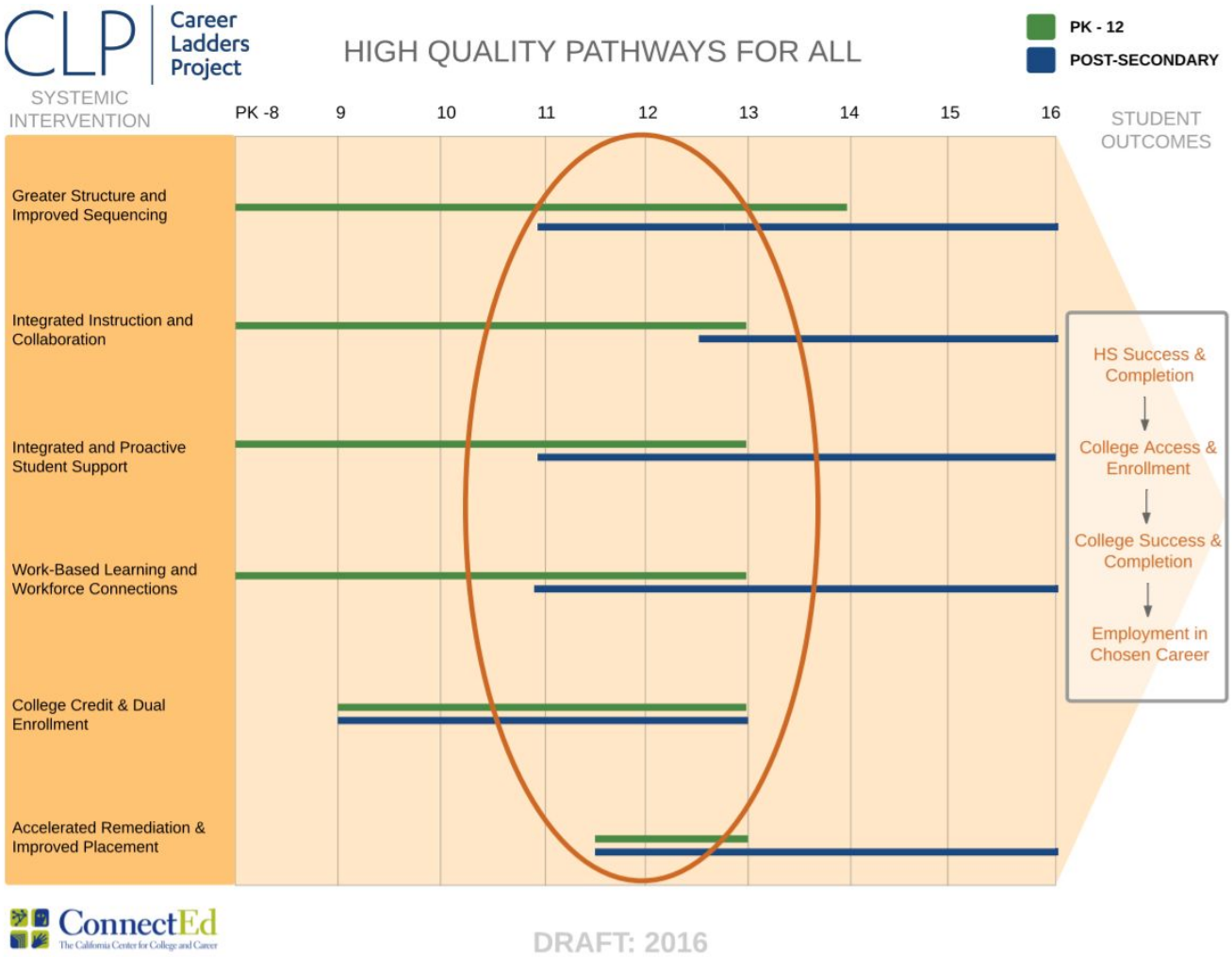
Greater Structure and Improved Sequencing

“At least for me, it was a lot of not knowing where to go. Like communications. Okay, where do you go from there? Do I become a professor? Do I work in TV? What kind of jobs do people have? It sounds corny, but are they happy in those jobs?”

Work-Based Learning and Workforce Connections

https://www.careerladdersproject.org/wp-content/uploads/2017/08/Bringing-Student-Voices-to-Guided-Pathways-Inquiry-and-Design.pdf

K12
Community College
CSU/UC
Career
Career
Student


CLP
Career Ladders Project
HIGH QUALITY PATHWAYS FOR ALL
PK - 12
POST-SECONDARY
SYSTEMIC INTERVENTION
PK -8
9
10
11
12
13
14
15
16
STUDENT OUTCOMES
Greater Structure and Improved Sequencing
Integrated Instruction and Collaboration
Integrated and Proactive Student Support
Work-Based Learning and Workforce Connections
College Credit & Dual Enrollment
Accelerated Remediation & Improved Placement
HS Success & Completion
College Access & Enrollment
College Success & Completion
Employment in Chosen Career
ConnectEd
The California Center for College and Career
DRAFT: 2016

When pathways work, our students benefit:

For Makhel and Makhi Burroughs, twins enrolled in the Computer Science & Technology (CS&T) Academy at Oakland's Skyline High School, college was not a distant possibility; it was part of their weekly class schedule. They first set foot on the campus of Berkeley City College (BCC) during an industry sector-based field trip, when they toured the multimedia arts programs and saw students present their projects. "The experience showed us what we could do later on," said Makhel. In their junior year, with a firm grounding in basic computer science principles gained from their first CS&T classes, they enrolled in 3D animation courses both at the high school and—through dual enrollment—at BCC. The college class "was different from high school in the sense that our animation had to meet certain criteria," Makhel explained. "We helped other [high school] students learn, since only a few of us took the BCC class." As high school graduation approached, they got help from their CS&T instructor to enroll as full-time students in BCC and to choose a visual design class, the next in the multimedia arts sequence. Now, Makhi envisions transferring to a four-year university program in animation and game design, while Makhel plans to pursue a four-year business degree.

https://www.careerladdersproject.org/wp-content/uploads/2018/06/Bridging-High-School-College-and-Industry_A-Case-Study-and-Lessons-for-the-Field.pdf

Creating pathways helps us create our own communities of practice!

Mapping is an opportunity to build partnerships between high school, college, and industry to strengthen collaboration across institutions.

Pathway mapping is an opportunity to create a **community of practice** around a cross-institutional program of study with the **students at the center.**

Participants should be encouraged to get to know each other and feel that they can reach out to each other after the session with **follow-up questions or to explore new ideas for their pathways.**

Helpful resource: Considerations for High School and Community College partnerships in the mapping process

Example of Mapping Outcomes

CLP Career Ladders Project

Local Curriculum Alignment and Early College Credit Opportunities

Long Beach Allied Health Pathways: Health Information Technology

Health Information Management, Bachelors Degree
San Diego Mesa College

Health Information Technology, AS
Cypress College

Early Credit Opportunities at LBCC

- CIS 111 C Computer Information Systems (3 units)
- HS 145 C Survey of Medical Terminology (3 units)
- BIOL 210 C Anatomy and Physiology (5 units)
- HI 114 C Beginning ICD-10 Coding (3 units)

Health Information Technology, AS
Saddleback College

Early Credit Opportunities at LBCC

- CIM 112 Microsoft Office (3 units)
- HSC 201 Medical Terminology (3 units)
- HSC 277 Human Body Fundamentals (3 units)
- HIT 220/221 ICD Procedural Coding/Diagnostic Coding (4 units)

Bachelor of Art, CAL State Long Beach
(MAJOR IN HEALTH CARE ADMINISTRATION/MINOR IN HEALTH INFORMATION SYSTEMS)

Early Credit Opportunities at LBCC and LBUSD

- *IS 233 Introduction to Computer Systems and Applications** (or equivalent)*
- *HSC 150 Medical Terminology** (1 unit)*
- *SOC 250** or PSY 210** or STAT 108***
- *BIOL 205 human biology** (or equivalent)*
- *Computer proficiency***
- *IS 380 Database Management***

Long Beach City College

Industry Credentials

American Health Information Management Assoc. (AHIMA)
- Certified Coding Assoc. (CCA)
- Certified Coding Specialist (CCS)
- Certified Coding Specialist-Physican Based (CCS-P)

American Assoc. of Professional Coding (AAPC)
- Certified Professional Biller (CPB)

HEALTH INFORMATION TECHNOLOGY - BILLING AND CODING, Certificate of Achievement (26 units)

- *AH 60 Medical Terminology* (3 units)*
- *BIO 60 Human Biology* 1 (4 units)*
- *OR ANAT 41 Anatomy & Physiology* (5 units)*
- *COSA 10 Microsoft Word for Windows* (4 units)*
- AH 110 Introduction to Health IT (4 units)
- AH 115 Medical Coding (3 units)
- AH 116 Medical Insurance Billing (3 units)

HEALTH INFORMATION TECHNOLOGY SUPPORT SPECIALIST, Certificate of Achievement (26-27 units)

COS Core Classes -ICT Statewide Curriculum
- COSN 5 Computer Technician Hardware Basics (4 units)
- COSA 50 Introduction to IT Concepts & Applications (4 units)
- COSS 271 Networking Security Fundamentals (3 units)
- COSN 10 Networking Fundamentals (4 units)

Health IT Specific Courses
- AH 110 Introduction to Health IT (4 units)
- *AH 60 Medical Terminology* (3 units)*
- *BIO 60 Human Biology* 1 (4 units)*
- *OR ANAT 41 Anatomy & Physiology* (5 units)*

Industry Credentials

COMPTIA
- A+ Certification
- Net+ Certification
- Security+ Certification

Microsoft Technology Associate (MTA)

Health Informatics (HI) is a science that defines how health information is technically captured, transmitted and utilized. Health informatics focuses on information systems, informatics principles, and information technology as it is applied to the continuum of healthcare delivery.

***Early CSULB Course Opportunities**
Early LBCC College Credit Opportunities

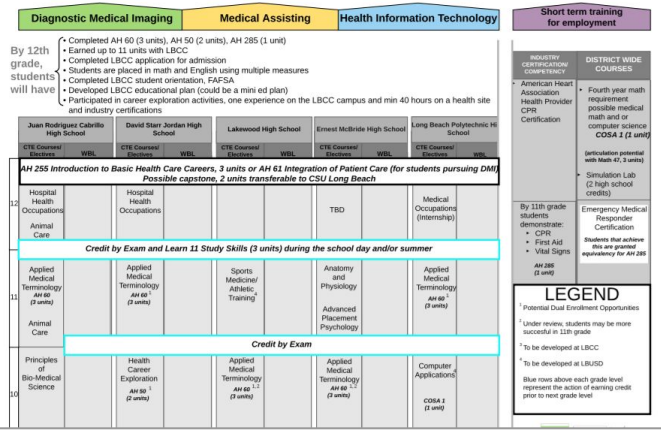
Long Beach Unified School District

- *AH 60 Medical Terminology* (3 units)*
- *COSA 10 Microsoft Word for Windows* (4 units)*
- *BIO 60 Human Biology* 1 (4 units)*
- *OR ANAT 41 Anatomy & Physiology* (5 units)*
- *COSN 5 Computer Technician Hardware Basics (4 units)*
- *COSN 10 Networking Fundamentals (4 units)*

Health Information Technology refers to the framework used to manage health information and the exchange of health information in a digital format. Health IT is focused on the technical side focused on hardware and software. They are usually professionals from information technology backgrounds.

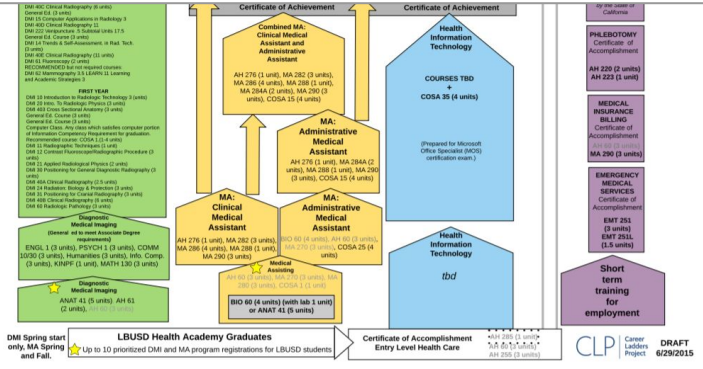
DRAFT DATE: 6/30/2016
Prepared for Long Beach City College by Career Ladders Project

Early College Credit and Pathway Development



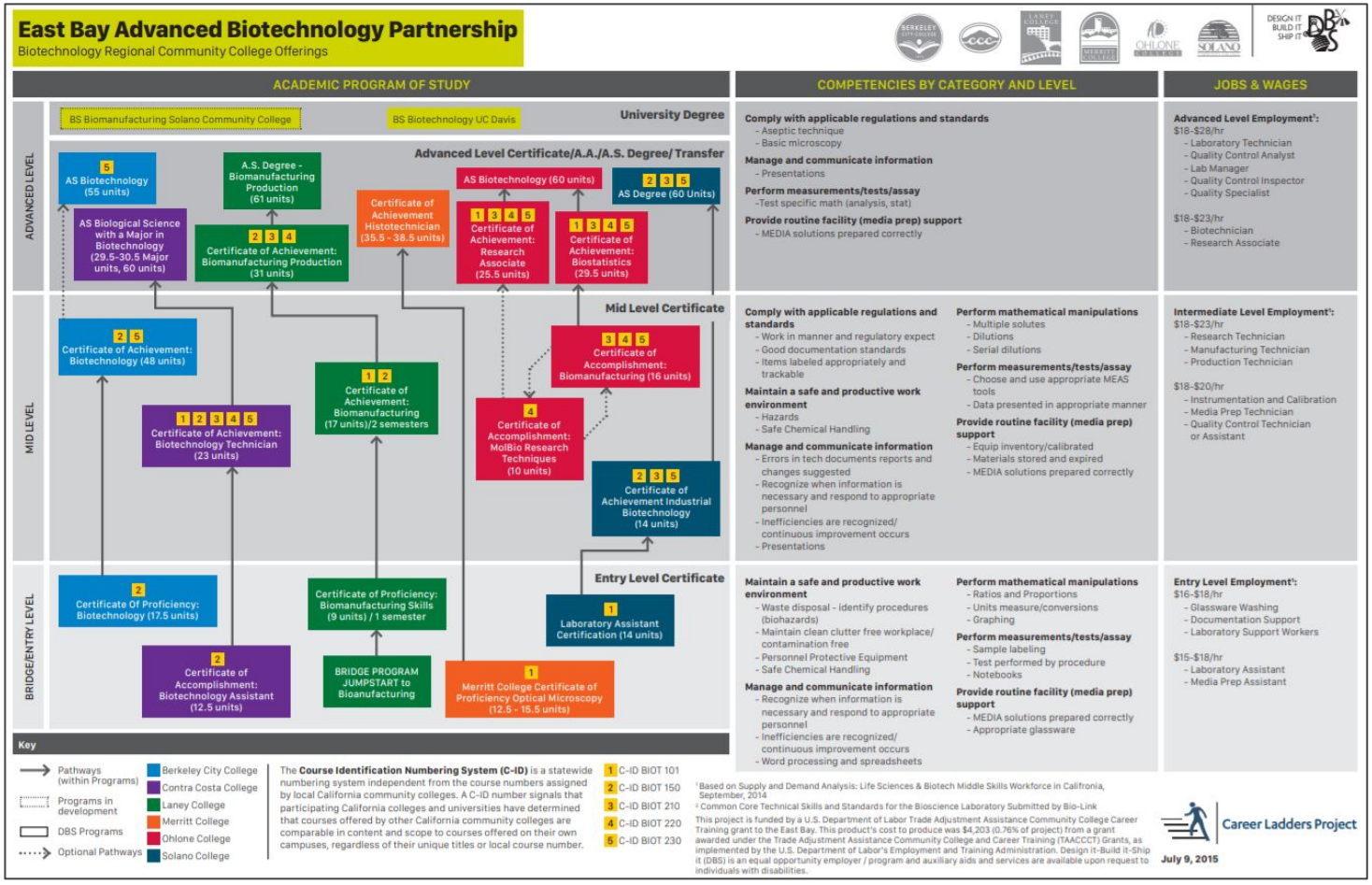
By 12th grade, students will have

- Completed AH 60 (3 units), AH 50 (2 units), AH 285 (1 unit)
- Earned up to 11 units with LBCC
- Completed LBCC application for admission
- Students are placed in math and English using multiple measures
- Completed LBCC student orientation, FAFSA
- Developed LBCC educational plan (could be a mini ed plan)
- Participated in career exploration activities, one experience on the LBCC campus and min 40 hours on a health site and industry certifications

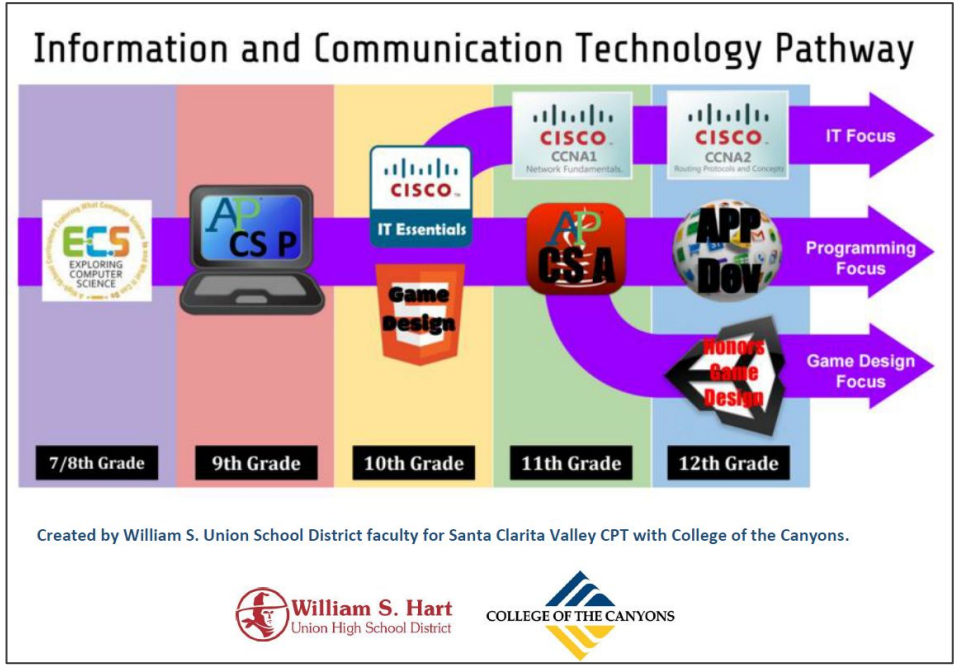


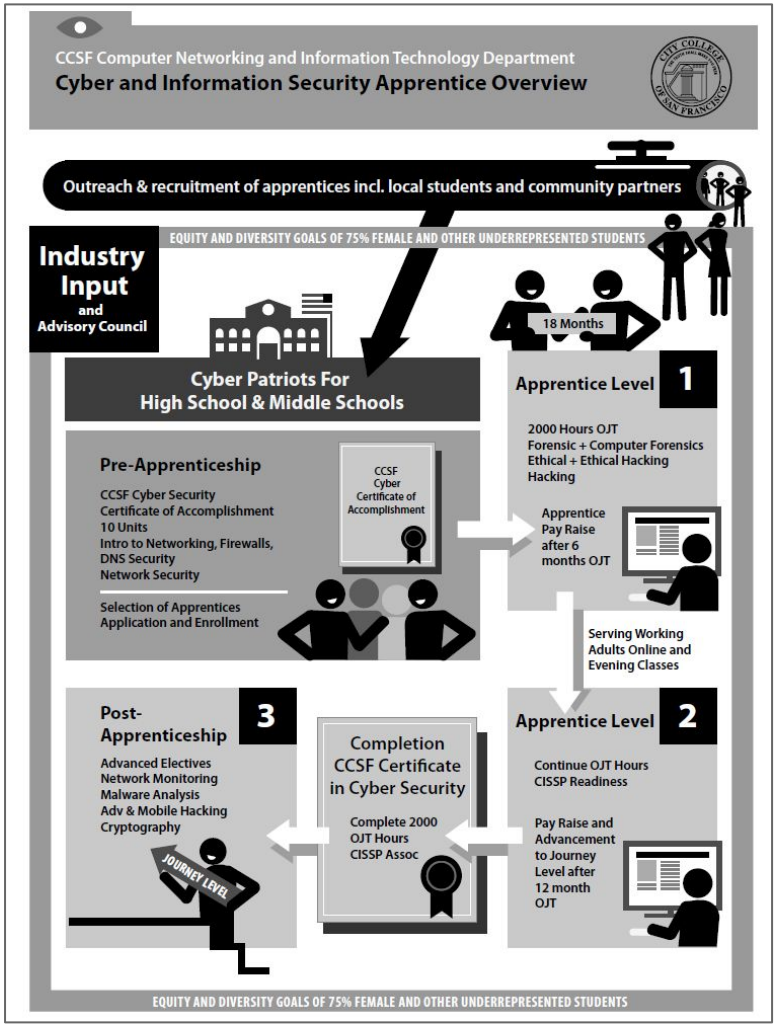
Regional Curriculum Alignment

- Berkeley City College
- Contra Costa College
- Laney College
- Merritt College
- Ohlone College
- Solano College



Outreach


Information and Communication Technology Pathway
ECS
EXPLORING COMPUTER SCIENCE
AP CS P
CISCO
IT Essentials
Game Design
CISCO
CCNA1
Network Fundamentals
AP CS A
CISCO
CCNA2
Routing Protocols and Concepts
APP Dev
Honors Game Design
IT Focus
Programming Focus
Game Design Focus
7/8th Grade
9th Grade
10th Grade
11th Grade
12th Grade
Created by William S. Union School District faculty for Santa Clarita Valley CPT with College of the Canyons.
William S. Hart Union High School District
COLLEGE OF THE CANYONS


CCSF Computer Networking and Information Technology Department
Cyber and Information Security Apprentice Overview
Outreach & recruitment of apprentices incl. local students and community partners
EQUITY AND DIVERSITY GOALS OF 75% FEMALE AND OTHER UNDERREPRESENTED STUDENTS
Industry Input and Advisory Council
Cyber Patriots For High School & Middle Schools
Pre-Apprenticeship
CCSF Cyber Security Certificate of Accomplishment
10 Units
Intro to Networking, Firewalls, DNS Security
Network Security
Selection of Apprentices
Application and Enrollment
CCSF Cyber Certificate of Accomplishment
18 Months
Apprentice Level 1
2000 Hours OJT
Forensic + Computer Forensics
Ethical + Ethical Hacking
Hacking
Apprentice Pay Raise after 6 months OJT
Serving Working Adults Online and Evening Classes
Apprentice Level 2
Continue OJT Hours
CISSP Readiness
Pay Raise and Advancement to Journey Level after 12 month OJT
Completion CCSF Certificate in Cyber Security
Complete 2000 OJT Hours
CISSP Assoc
Post-Apprenticeship 3
Advanced Electives
Network Monitoring
Malware Analysis
Adv & Mobile Hacking
Cryptography
JOURNEY LEVEL
EQUITY AND DIVERSITY GOALS OF 75% FEMALE AND OTHER UNDERREPRESENTED STUDENTS

HEALTH PROFESSIONS

Arthur A. Benjamin Health Professions High School

www.hphsjaguars.com www.facebook.com/aabhphs **916-264-3262**

Mission

To provide students with an outstanding education, rich with relevant academic, application and leadership experiences – using healthcare as a theme.

Description

HPHS is a small, college prep, career themed high school that prepares students for college AND career as well as provides students with numerous opportunities working within the healthcare industry. HPHS is a positive and safe campus where students can take college classes, earn industry certificates in CPR, First Responder, and Sports Medicine and participate in health related internship programs!

Pathway Student Outcomes

P—powerfully prepared for college and career
R—responsible citizen
I— independent critical thinker
D—determined lifelong learner
E—excellent communicator

Increasing creative confidence through Linked Learning

WHAT I LIKE ABOUT my pathway

"You will never find a more caring place to get an amazing education!" DB – Class of 2014

"I am in my doctorate program as a neuropsychologist in the field of mental health because of Health Professions High School!" JN – Class of 2009

"Because of HPHS I have so many college options. I may not know which one to choose but I know that my major will definitely be in the medical field!" JD - Senior

CAREERS IN HEALTH

Arthur A. Benjamin Health Professions High School

http://www.hphsjaguars.com www.facebook.com/aabhphs **916-264-3262**

SUBJECT	HIGH SCHOOL COURSES – *UC a-g Approved Courses				BEFORE/AFTER SCHOOL OPPORTUNITIES	RELATED OCCUPATIONS
	9th	10th	11th	12th	0 Period and 7th Period Options	Physicians (Cardiologists, Pediatricians, and more) Radiology Dietetics Dietetics Physical Therapy Occupational Therapy Sports Medicine Pediatrics Clinical Lab Science Health Care Law EMT/Paramedics Hospital Administration Pharmacy Mental Health Many more!
English	Medical English 9*	Medical English 10*	Medical English 11*	Med English 12*	College Course Opportunities	
Math	Integrated Math I*	Integrated Math II*	Integrated Math III*	Pre-Calculus*/ AP Statistics*	College Course Opportunities	
Science		Medical Biology*	Medical Chemistry*	Physics*	Bio 100/Medical Terminology (Sac City College Courses at HPHS)	
Social Science High School Success	Freshman Foundations for Success (college credit course)	World History*	Medical US History*	*Economics/ US Gov including Electronic Health Care Records Specialist Certification	College Course Opportunities	
Foreign Language, Art and PE	PE and Drama*	Spanish I* or Native Speakers*	Spanish II* or Native Speakers*	Medical Spanish* and PE	College Course Opportunities	
Medical Science	Medical Science 9*	Medical Science 10*	Medical Science 11* CPR Certification First Responder	Medical Science 12* including Mental Health	Sports Medicine* Work Advantage Certificate Program	
Work Based Learning Opportunities	Suturing Lab Hospital Visits Integrated Units Community Service	Summer Scrubs Saturday Academy Guest Speakers Job Shadowing Integrated Units Community Service	Summer Scrubs Saturday Academy Guest Speakers Internships Integrated Units CPR Certification Community Service	Summer Scrubs Saturday Academy Guest Speakers Internships Senior Project Community Service	After School Academy Tutoring and Clubs Small School Sports League and West Campus Sports Teams	

We are honored to have 8 Educators of the Year!

We have 93% of our students attending college/military with 87% being accepted to 4 year schools and 54% of those students pursing degrees in the medical field!

For more information on SCUSD's Linked Learning Pathways, visit www.scusd.edu/linkedlearning

PARTNERS

U.C. Davis Health System
BloodSource
Sacramento City College
916Ink
Shriners Hospital
California State Legislature
City Church of Sacramento
Kaiser Permanente
Yes2Kollege Education Resources, Inc.
Sacramento County Office of Education
The California Endowment
The California Wellness Foundation
Capital Academies and Pathways
Los Rios Community College District
Sacramento State University
University of California – Davis
Sacramento Black Nurses Association
Dignity Health
Sacramento Valley Psychological Association
Health Workforce Initiative
Sacramento County Department of Health and Human Services
Division of Behavioral Health
Division of Public Health
Cal-Health Occupations Students of America (HOSA)
Office of Statewide Health Planning & Development (OSHPD)
Sierra College Nursing Program Impact Teen Drivers
The California Endowment

The Sacramento City Unified School District prohibits discrimination, harassment, intimidation, and bullying based on actual or perceived ancestry, age, color, disability, gender, gender identity, gender expression, nationality, race or ethnicity, religion, sex, sexual orientation, parental, family, or marital status, or association with a person or a group with one or more of these actual or perceived characteristics.

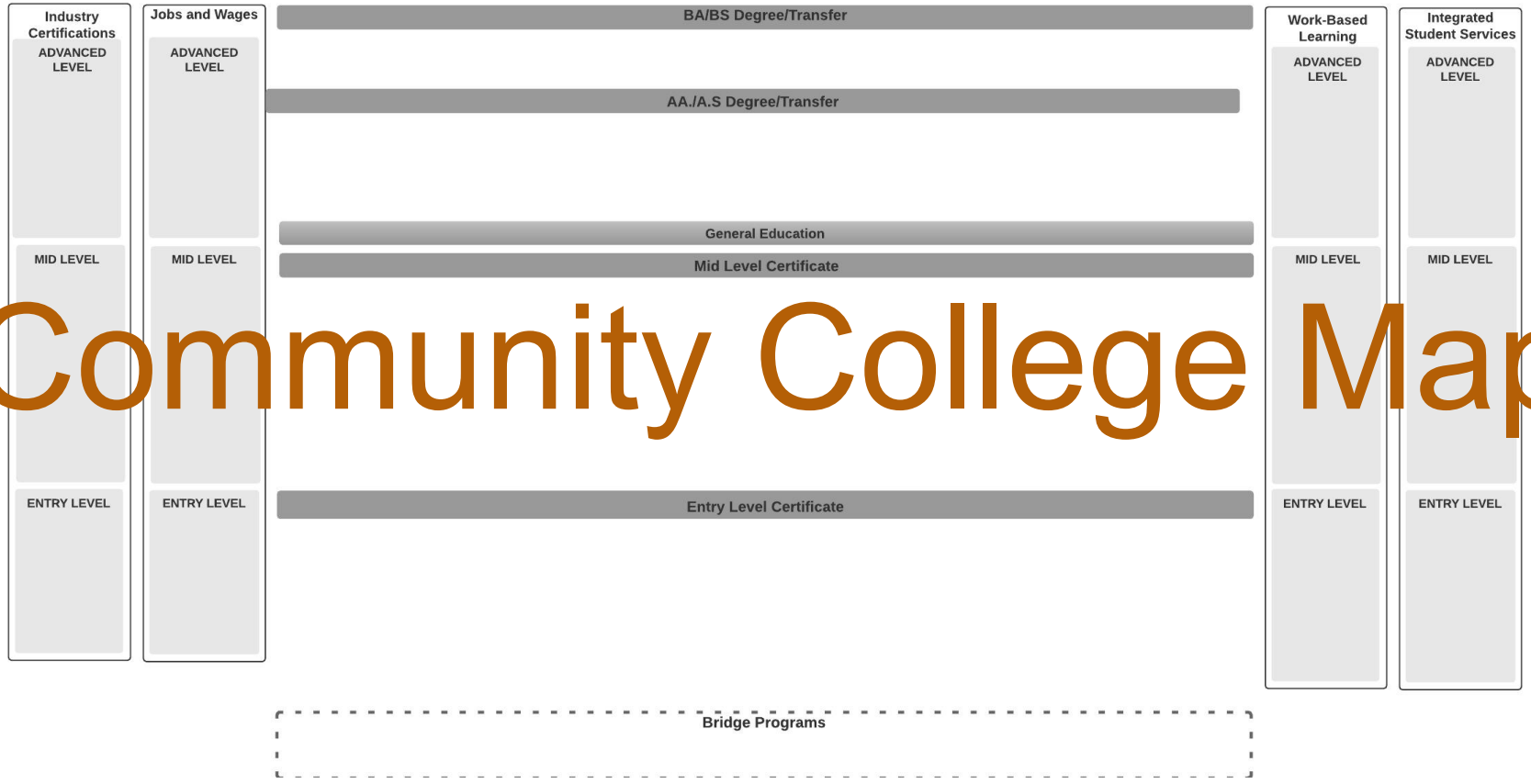
What does a pathway map look like?

CLP | Career Ladders Project

MAPPING CLP Career Ladders Project

Pathway(s):
Community College(s):
Partner Organization(s):

DRAFT DATE:



Community College Map

High School Map

Bridge Programs

	English * indicates integration *D = Dual Enrollment	**Mathematics** * indicates integration *D = Dual Enrollment	**Science** * indicates integration *D = Dual Enrollment	**History/ Social Science** * indicates integration *D = Dual Enrollment	**Language Other Than English** * indicates integration *D = Dual Enrollment	**Visual & Performing Arts / Phys Ed** * indicates integration *D = Dual Enrollment	**Career Technical Courses:** Please indicate CTE courses	**Work-based Learning:** Coordinated, sequenced and scaled, connected to academic and technical coursework	**Student Supports:** Academic interventions, guidance and counseling, college and career planning	**Curriculum Intg. / Project-Based Learning:** Curriculum and projects aligned to key student learning outcomes or industry aligned competencies	**Competencies:** Cross-disciplinary, pathway specific student -learning outcomes aligned with state standards, post-secondary expectations, and industry standards or requirements
12											
11											
10											
9											

MAPPING
CLP | Career Ladders Project

Pathway(s):
High School(s):
Partner Organization(s):

DRAFT DATE:

MAPPING CLP Career Ladders Project

Pathway(s):
Community College(s):
Partner Organization(s):

DRAFT DATE:

Bridge Programs

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12	12	12	12	12	12	12	12	12	12	12
11	11	11	11	11	11	11	11	11	11	11
10	10	10	10	10	10	10	10	10	10	10
9	9	9	9	9	9	9	9	9	9	9

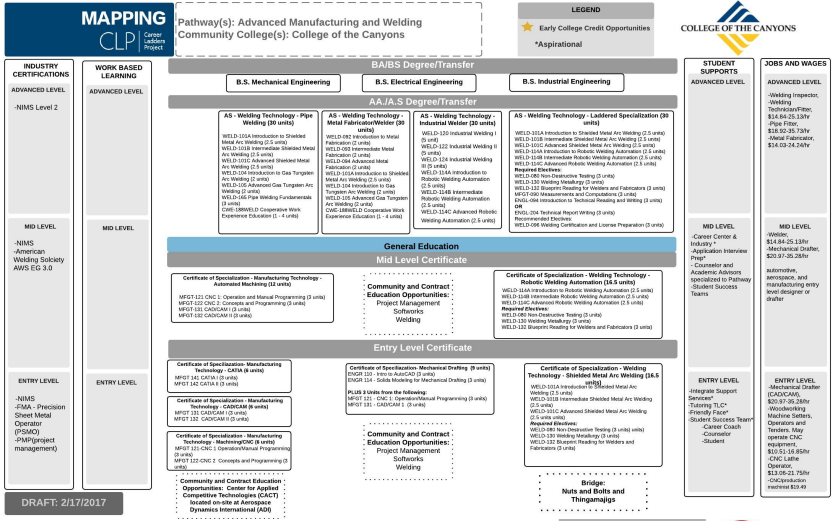
MAPPING CLP Career Ladders Project

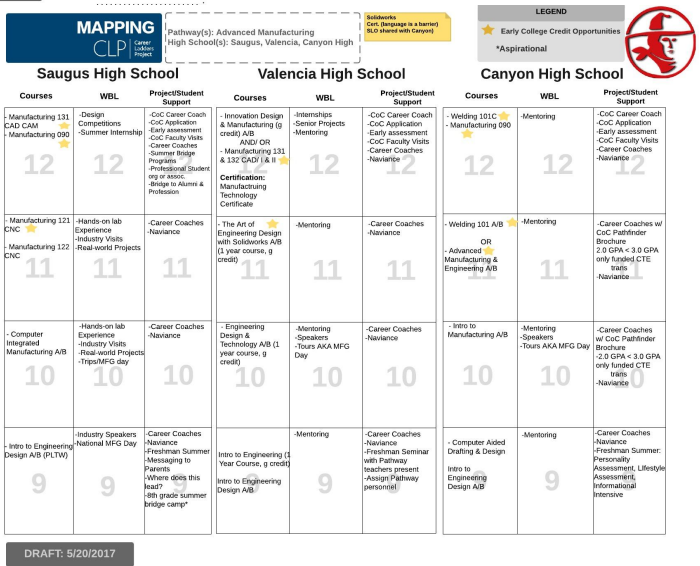
Pathway(s):
High School(s):
Partner Organization(s):

DRAFT DATE:

CLP | Career Ladders Project

A pathway map after the information from the mapping session(s) has been added.





CLP Career Ladders Project

Industry Certifications

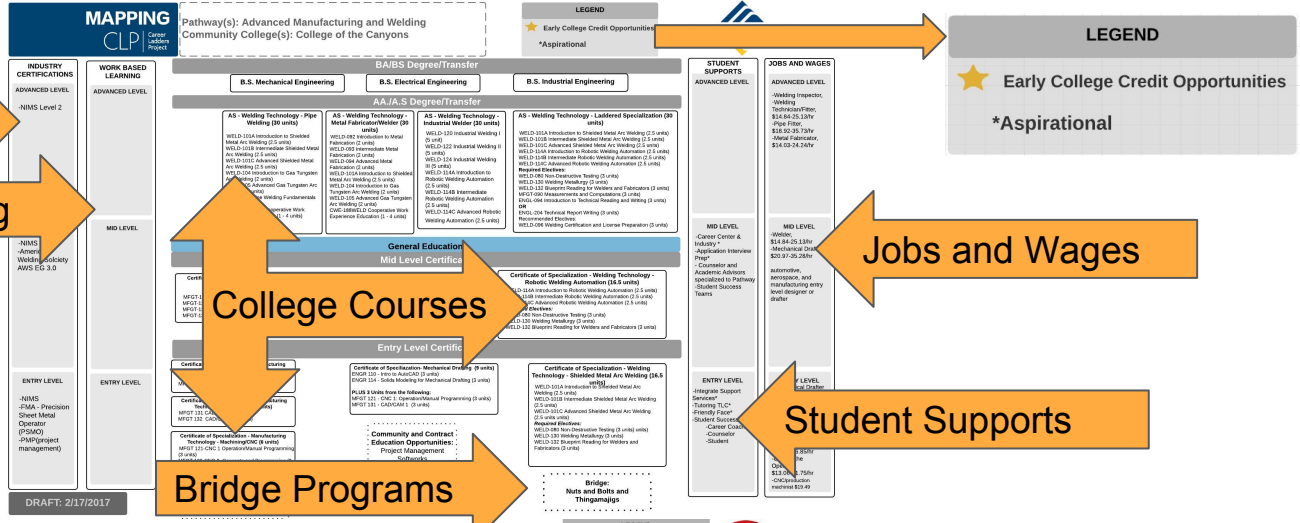
Work Based Learning

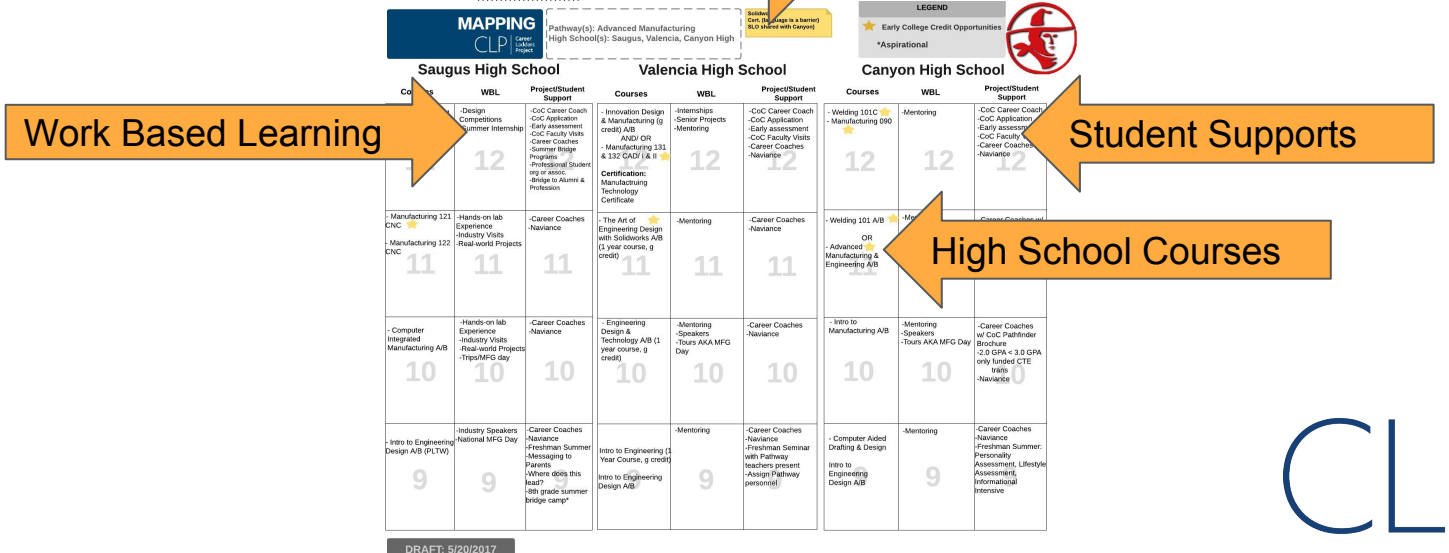
College Courses

Jobs and Wages

Student Supports

Bridge Programs





Work Based Learning

Student Supports

High School Courses

CLP Career Ladders Project

Components of a Combined High School and Community College Pathway Map

- **Bridge Programs:** Summer bridge programs are designed to “bridge” the transition from high school to college. These are often intensive multi-week experiences that occur before the start of a student’s first year in college and are generally intended to help students adapt to the college academic environment.

- **High School Courses:** High school courses include general courses offered at the high school as well at CTE and early college credit opportunities.

- **Community College Degrees and Certificates:** Each college has their own offerings of certificate and degree programs. Certificates offered by the college provide opportunities to move forward in professional fields that may lead to degrees which can provide pathways to transfer.

- **Industry Certifications:** An industry certification is a credential recognized by business and industry at the local, state or national level. ... Industry certificates measure competency in an occupation, and they validate the knowledge base and skills that show mastery in a particular industry. (CDE)

CLP Career Ladders Project

Components of a Combined High School and Community College Pathway Map (cont.)

- **Integrated Student Services:** Integrated student supports can include a number of different supports provided to students to enrich their educational experience. The list may include, but is not limited to: academic intervention, guidance, counseling, college and career planning.

- **Job and Wages (LMI - labor market information):** Labor market information includes data and analysis related to employment and the workforce that allows for more educated and informed career planning. Including examples of the jobs and wages that are attainable at each stage of the pathway helps students make informed choices.

- **Work-based Learning:** Work-based learning (WBL) is an instructional strategy that enhances classroom learning by connecting it to the workplace. These opportunities can include credit-based and/or paid work experiences, internships, or service learning. Examples: guest speakers, industry-based field trips, career exploration, problem-based learning and more.

CLP | Career Ladders Project

MAPPING CLP Career Ladders Project

Pathway(s): Advanced Manufacturing and Welding
Community College(s): College of the Canyons

LEGEND
- ★ Early College Credit Opportunities
- *Aspirational

COLLEGE OF THE CANYONS

INDUSTRY CERTIFICATIONS

ADVANCED LEVEL
-NIMS Level 2

MID LEVEL
-NIMS
-American Welding Solciety AWS EG 3.0

ENTRY LEVEL
-NIMS
-FMA - Precision Sheet Metal Operator (PSMO)
-PMP(project management)

WORK BASED LEARNING

ADVANCED LEVEL

MID LEVEL

ENTRY LEVEL

BA/BS Degree/Transfer

- **B.S. Mechanical Engineering**
- **B.S. Electrical Engineering**
- **B.S. Industrial Engineering**

AA./A.S Degree/Transfer

AS - Welding Technology - Pipe Welding (30 units)
WELD-101A Introduction to Shielded Metal Arc Welding (2.5 units)
WELD-101B Intermediate Shielded Metal Arc Welding (2.5 units)
WELD-101C Advanced Shielded Metal Arc Welding (2.5 units)
WELD-104 Introduction to Gas Tungsten Arc Welding (2 units)
WELD-105 Advanced Gas Tungsten Arc Welding (2 units)
WELD-165 Pipe Welding Fundamentals (3 units)
CWE-188WELD Cooperative Work Experience Education (1 - 4 units)

AS - Welding Technology - Metal Fabricator/Welder (30 units)
WELD-092 Introduction to Metal Fabrication (2 units)
WELD-093 Intermediate Metal Fabrication (2 units)
WELD-094 Advanced Metal Fabrication (2 units)
WELD-101A Introduction to Shielded Metal Arc Welding (2.5 units)
WELD-104 Introduction to Gas Tungsten Arc Welding (2 units)
WELD-105 Advanced Gas Tungsten Arc Welding (2 units)
CWE-188WELD Cooperative Work Experience Education (1 - 4 units)

AS - Welding Technology - Industrial Welder (30 units)
WELD-120 Industrial Welding I (5 unit)
WELD-122 Industrial Welding II (5 units)
WELD-124 Industrial Welding III (5 units)
WELD-114A Introduction to Robotic Welding Automation (2.5 units)
WELD-114B Intermediate Robotic Welding Automation (2.5 units)
WELD-114C Advanced Robotic Welding Automation (2.5 units)

AS - Welding Technology - Laddered Specialization (30 units)
WELD-101A Introduction to Shielded Metal Arc Welding (2.5 units)
WELD-101B Intermediate Shielded Metal Arc Welding (2.5 units)
WELD-101C Advanced Shielded Metal Arc Welding (2.5 units)
WELD-114A Introduction to Robotic Welding Automation (2.5 units)
WELD-114B Intermediate Robotic Welding Automation (2.5 units)
WELD-114C Advanced Robotic Welding Automation (2.5 units)
Required Electives:
WELD-080 Non-Destructive Testing (3 units)
WELD-130 Welding Metallurgy (3 units)
WELD-132 Blueprint Reading for Welders and Fabricators (3 units)
MFGT-090 Measurements and Computations (3 units)
ENGL-094 Introduction to Technical Reading and Writing (3 units)
OR
ENGL-204 Technical Report Writing (3 units)
Recommended Electives:
WELD-096 Welding Certification and License Preparation (3 units)

General Education

Mid Level Certificate

Certificate of Specialization - Manufacturing Technology - Automated Machining (12 units)
MFGT-121 CNC 1: Operation and Manual Programming (3 units)
MFGT-122 CNC 2: Concepts and Programming (3 units)
MFGT-131 CAD/CAM I (3 units)
MFGT-132 CAD/CAM II (3 units)

Community and Contract Education Opportunities:
Project Management
Softworks
Welding

Certificate of Specialization - Welding Technology - Robotic Welding Automation (16.5 units)
WELD-114A Introduction to Robotic Welding Automation (2.5 units)
WELD-114B Intermediate Robotic Welding Automation (2.5 units)
WELD-114C Advanced Robotic Welding Automation (2.5 units)
Required Electives:
WELD-080 Non-Destructive Testing (3 units)
WELD-130 Welding Metallurgy (3 units)
WELD-132 Blueprint Reading for Welders and Fabricators (3 units)

Entry Level Certificate

Certificate of Speciliazation- Manufacturing Technology - CATIA (6 units)
MFGT 141 CATIA I (3 units)
MFGT 142 CATIA II (3 units)

Certificate of Specialization - Manufacturing Technology - CAD/CAM (6 units)
MFGT 131 CAD/CAM I (3 units)
MFGT 132 CAD/CAM II (3 units)

Certificate of Specialization - Manufacturing Technology - Machining/CNC (6 units)
MFGT 121-CNC 1 Operation/Manual Programming (3 units)
MFGT 122-CNC 2 Concepts and Programming (3 units)

Community and Contract Education Opportunities: Center for Applied Competitive Technologies (CACT) located on-site at Aerospace Dynamics International (ADI)

Certificate of Speciliazation- Mechanical Drafting (9 units)
ENGR 110 - Intro to AutoCAD (3 units)
ENGR 114 - Solids Modeling for Mechanical Drafting (3 units)

PLUS 3 Units from the following:
MFGT 121 - CNC 1: Operation/Manual Programming (3 units)
MFGT 131 - CAD/CAM 1 (3 units)

Community and Contract Education Opportunities:
Project Management
Softworks
Welding

Certificate of Specialization - Welding Technology - Shielded Metal Arc Welding (16.5 units)
WELD-101A Introduction to Shielded Metal Arc Welding (2.5 units)
WELD-101B Intermediate Shielded Metal Arc Welding (2.5 units)
WELD-101C Advanced Shielded Metal Arc Welding (2.5 units)
Required Electives:
WELD-080 Non-Destructive Testing (3 units)
WELD-130 Welding Metallurgy (3 units)
WELD-132 Blueprint Reading for Welders and Fabricators (3 units)

Bridge: Nuts and Bolts and Thingamajigs

STUDENT SUPPORTS

ADVANCED LEVEL

MID LEVEL
-Career Center & Industry *
-Application Interview Prep*
- Counselor and Academic Advisors specialized to Pathway
-Student Success Teams

ENTRY LEVEL
-Integrate Support Services*
-Tutoring TLC*
-Friendly Face*
-Student Success Team*
  -Career Coach
  -Counselor
  -Student

JOBS AND WAGES

ADVANCED LEVEL
-Welding Inspector, $14.84-25.13/hr
-Welding Technician/Fitter, $14.84-25.13/hr
-Pipe Fitter, $18.92-35.73/hr
-Metal Fabricator, $14.03-24.24/hr

MID LEVEL
-Welder, $14.84-25.13/hr
-Mechanical Drafter, $20.97-35.28/hr

automotive, aerospace, and manufacturing entry level designer or drafter

ENTRY LEVEL
-Mechanical Drafter (CAD/CAM), $20.97-35.28/hr
-Woodworking Machine Setters, Operators and Tenders. May operate CNC equipment, $10.51-16.85/hr
-CNC Lathe Operator, $13.06-21.75/hr
-CNC/production machinist $19.49

DRAFT: 2/17/2017

MAPPING CLP Career Ladders Project

Pathway(s): Advanced Manufacturing
High School(s): Saugus, Valencia, Canyon High

Solidworks Cert. (language is a barrier) SLO shared with Canyon)

LEGEND
★ Early College Credit Opportunities
*Aspirational

Saugus High School

Courses	WBL	Project/Student Support
- Manufacturing 131 CAD CAM ★ - Manufacturing 090 ★ 12	-Design Competitions -Summer Internship 12	-CoC Career Coach -CoC Application -Early assessment -CoC Faculty Visits -Career Coaches -Summer Bridge Programs -Professional Student org or assoc. -Bridge to Alumni & Profession 12
- Manufacturing 121 CNC ★ - Manufacturing 122 CNC 11	-Hands-on lab Experience -Industry Visits -Real-world Projects 11	-Career Coaches -Naviance 11
- Computer Integrated Manufacturing A/B 10	-Hands-on lab Experience -Industry Visits -Real-world Projects -Trips/MFG day 10	-Career Coaches -Naviance 10
- Intro to Engineering Design A/B (PLTW) 9	-Industry Speakers -National MFG Day 9	-Career Coaches -Naviance -Freshman Summer -Messaging to Parents -Where does this lead? -8th grade summer bridge camp* 9

Valencia High School

Courses	WBL	Project/Student Support
- Innovation Design & Manufacturing (g credit) A/B AND/ OR - Manufacturing 131 & 132 CAD/ I & II ★ **Certification:** Manufactruing Technology Certificate 12	-Internships -Senior Projects -Mentoring 12	-CoC Career Coach -CoC Application -Early assessment -CoC Faculty Visits -Career Coaches -Naviance 12
- The Art of Engineering Design with Solidworks A/B (1 year course, g credit) ★ 11	-Mentoring 11	-Career Coaches -Naviance 11
- Engineering Design & Technology A/B (1 year course, g credit) 10	-Mentoring -Speakers -Tours AKA MFG Day 10	-Career Coaches -Naviance 10
Intro to Engineering (1 Year Course, g credit) Intro to Engineering Design A/B 9	-Mentoring 9	-Career Coaches -Naviance -Freshman Seminar with Pathway teachers present -Assign Pathway personnel 9

Canyon High School

Courses	WBL	Project/Student Support
- Welding 101C ★ - Manufacturing 090 ★ 12	-Mentoring 12	-CoC Career Coach -CoC Application -Early assessment -CoC Faculty Visits -Career Coaches -Naviance 12
- Welding 101 A/B ★ OR - Advanced Manufacturing & Engineering A/B ★ 11	-Mentoring 11	-Career Coaches w/ CoC Pathfinder Brochure 2.0 GPA < 3.0 GPA only funded CTE trans -Naviance 11
- Intro to Manufacturing A/B 10	-Mentoring -Speakers -Tours AKA MFG Day 10	-Career Coaches w/ CoC Pathfinder Brochure -2.0 GPA < 3.0 GPA only funded CTE trans -Naviance 10
- Computer Aided Drafting & Design Intro to Engineering Design A/B 9	-Mentoring 9	-Career Coaches -Naviance -Freshman Summer: Personality Assessment, Llfestyle Assessment, Informational Intensive 9

DRAFT: 5/20/2017

Career Ladders Project Pathway Maps

CLP | Career Ladders Project