JUMP START! 2.0 Pathway Brief

MANUFACTURING

For incoming freshmen 2020–2021

OVERVIEW

The Manufacturing Jump Start 2.0 Pathway prepares students to work in the process and production fields. Pathway coursework equips students to design, create, assemble, install, and repair electrical and mechanical systems. Students will be able to perform preventative maintenance procedures on machines, tools, and equipment on a routine and regular basis. This pathway also encompasses petrochemical courses where students will learn about the refining and processing of petroleum and/or natural gas. Manufacturing workers will be able to move into advanced manufacturing careers to use innovative technology to improve current products or processes to assist companies in producing their products more efficiently.

COLLEGE AND CAREER CONNECTIONS

Finding high-wage career opportunities directly out of high school can be challenging. It typically requires advanced capstone credentials accompanied by work experience and/or apprenticeships in the field.

High School to Career	Community/Technical College to Career	University to Career
Entry Level Warehouse Operator	Mechanical/Piping/Electrical Designer Trainee	Chemical Engineer
Instrument Technician Trainee	Instrument Technician	Mechanical Engineer
Electrical Technician Trainee	Electrical Technician	Electrical Engineer

CAPSTONE CREDENTIALS

In order to graduate, Jump Start students must earn at least one credential from the options below.

Regional (Emerging)	Basic	Advanced
Career and Technical Certificate (LCTCS)*	Certificate of Technical Studies (LCTCS)*	Technical Diploma (LCTCS)*
AutoDesk Certified User: • Fusion 360 • Rivet	ADDA Certified Mechanical Apprentice Drafter	AutoDesk Inventor Certified User
AWS Welding 1G	Autodesk Certified User AutoCAD	Electrical Training ALLIANCE Interim Credential (etA): Levels 1-5
Maritime Safety Credentials Suite: Personal Safety/Social Responsibilities, Basic Water Survival, Basic Firefighting AND Basic First Aid/CPR AED	**Carpenter's International Training Fund (CITF):** • Millwright • Welding	**NCCER Level 2 or above** • Electrical • Instrumentation • Industrial Maintenance Mechanic • Mechanical Insulating • Millwright • Mobile Crane Operations • Pipefitting • Welding
NCCER: • Basic Rigger • Helper Modules • Industrial Coating & Lining Application Specialist	Certification for Manufacturing (C4M)	NIMS Machining Level 2 Certification
OSHA: • OSHA 10** • OSHA 30	**Electrical Training ALLIANCE Interim Credential (etA):** • Levels 1-3 • Level 4 • Level 5	
PEC Basic Orientation: • Safe Land • Safe Gulf	Geographic Information System - Entry Level Technician Certification	
Water Survival/Helicopter Underwater Egress Training (HUET)	Louisiana Micro-Enterprise - Statewide	
	Certified Production Technician (CPT) AND Certified Production Technician Plus (CPT+)	
	NCCER Level 1 • Electrical • Heavy Equipment Operations • Instrumentation • Industrial Maintenance Mechanic • Mechanical Insulating • Millwright • Mobile Crane Operations • Pipefitting • Welding	
	NIMS Machining Level 1 Certification	
	North America's Building Trades Unions Multi-Craft Core Curriculum (MC3)	
	Production Safety Systems (T-2) Basic	

**Aligned to pathway. **Credential is only available to students with disabilities as indicated by a current IEP.*

K16 PATHWAY ALIGNMENT

UNIVERSAL DOCUMENTS

CDF ELIGIBLE COURSES • JUMP START FUNDING • UNIVERSAL COURSE CODES

Course Name	½ Credit Course Code	1 Credit Course Code	2 Credit Course Code	3 Credit Course Code
Advanced Electrical Electronics		310383		
Advanced Electricity/Electronics		110610		
Advanced Math - Functions and Statistics		160347		
Advanced Math - Pre-Calculus		160346		
Advanced Metal Technology		110240		
Advanced Technical Drafting		110590		
Aerospace Engineering		110830		
AG Leadership		010364		
Ag Power Equipment		010446		
Agriscience II		010302		
Agriscience III		010303		
Agriscience IV		010304		
Air Conditioning/Refrigeration I		310100	310102	310103
Air Conditioning/Refrigeration II		310105	310112	310113
Architectural Drafting		110580		
AWS Welding I		313100	313102	313103
AWS Welding II		313105	313106	313107
AWS Welding III		313108	313109	313110
AWS Welding IV		313111	313112	313113
Basic Electricity/Electronics		110600		
Basic Metal Technology I		110200		
Basic SMAW		313120		
Basic Technical Drafting		110560		
C4M: Level 1 – Introduction to Manufacturing		TBD	TBD	TBD
C4M: Level 2 – Manufacturing Team Skills, Quality, and Tools and Equipment		TBD	TBD	TBD
C4M: Level 3 – Automation in Manufacturing		TBD	TBD	TBD
C4M: Level 4 – Introduction to Fabrication		TBD	TBD	TBD
C4M in Agriscience I		010913	010914	010915
C4M in Agriscience II		010916	010917	010918
C4M in Agriscience III		010919	010920	010921
C4M in Agriscience IV		010922	010923	010924
CDF-Qualifying Pre-Apprenticeship II		080233	080234	
CDF-Qualifying Pre-Apprenticeship III		080236	080237	
CDF-Qualifying Pre-Apprenticeship IV		080239	080240	
Chemistry		150401		
Computer Technology Literacy		040220		
Construction Math Level 1		0110108		
Construction Math Level 2		0110109		
CMAD Drafting		110570	110571	110572
Computer Integrated Manufacturing		110850		
Data Manipulation and Analysis (LSU Partnership)		080532		
Design, Blueprint Reading And Codes		310622		
Drafting & Design Technology I		311300	311302	311303
Drafting & Design Technology II		311305	311312	311313
Electrician I		311400	311402	311403
Electrician II		311405	311412	311413
Engineering Design I		080110	080111	080112
Engineering Design II		080120	08021	080122
Engineering Design and Development		110860		
Engineering Design and Development: LSU Partnership		110861		

Course Name	½ Credit Course Code	1 Credit Course Code	2 Credit Course Code	3 Credit Course Code
Environmental Science		150310		
Environmental Science: AP Environmental Science		150311		
Environmental Science: DE - CEVS 1103 Environmental Science		150914		
First Robotics I		150740		
First Robotics II		150750		
First Robotics III		150760		
First Robotics IV		150770		
Fluid Mechanics		110331		
Fundamentals of Industrial Scaffolding		310631	310632	
G.M. Technician I		313200	313202	313203
Geometry		160323		
GIS Entry Level 1		010103		
GIS Entry Level 2		010104		
Grinder Assistant		110231		
Industrial And Plant Safety		311921		
Industrial Electronics I		311800	311802	311803
Industrial Electronics II		311805	311812	311813
Industrial Machines Shop I		311900	311902	311903
Industrial Machines Shop II		311905	311912	311913
Industrial Machines Shop III		311915	311916	311917
Industrial Machines Shop IV		311918	311919	311920
Introduction to Computational Thinking for STEM:LSU Partnership		061140		
Introduction to Engineering Design	110799	110800		
Introduction to Engineering Design: LSU Partnership		110801		
Introduction to Hazardous Materials		311922		
Introduction to Remote Controlled Vehicle Technologies		110795		
Introduction to Social Media		080818		
Maintenance Assistant		313836		
Manufacturing Process and Team Building		110256		
Manufacturing Technology		110250		
Manufacturing Tools and Equipment		110257		
Materials and Processes		110005		
NCCER Electrical I		110711 OR 313400	110712 OR 313402	110713 OR 313403
NCCER Electrical II		110716 OR 313405	110717 OR 313412	110718 OR 313413
NCCER Electrical III		313417	313418	313419
NCCER Electrical IV		313420	313421	313422
NCCER Electrical in Agriscience I		010701	010702	010703
NCCER Electrical in Agriscience II		010704	010705	010706
Introduction to Computational Thinking		061141		
NCCER Industrial Maintenance Electrical & Instrumentation I			313730	
NCCER Industrial Maintenance Level II		313729		
NCCER Instrumentation Control Mechanic I		110721 OR 313500	110722 OR 313502	110723 OR 303503
NCCER Instrumentation Control Mechanic II		110726 OR 313505	110727 OR 313512	110728 OR 313513
NCCER Instrumentation Control Mechanic III		313517		
NCCER Instrumentation IV		313520		
NCCER Insulating I		313829	313830	
NCCER Millwright I		313714	313740	313741
NCCER Millwright II		313715	313742	313743
NCCER Millwright III		313716	313744	313745
NCCER Millwright IV		313717	313746	313747

Course Name	½ Credit Course Code	1 Credit Course Code	2 Credit Course Code	3 Credit Course Code
NCCER Pipefitter I		110731 OR 313600	110732 OR 313602	110733 OR 313603
NCCER Pipefitter II		110736 OR 313605	110737 OR 313612	110738 OR 313613
NCCER Pipefitter III		313617	313616	
NCCER Pipefitter IV		313620	313619	
NCCER Pipefitting in Agriscience I		010801	010802	010803
NCCER Rigging I		313731	313732	313733
NCCER Rigging II		313734	313735	313736
NCCER Rigging III		313737	313738	313739
NCCER Scaffolding		321000	321001	321002
NCCER Pipefitting in Agriscience II		010804	010805	010806
NCCER Welding in Agriscience I		010901	010902	010903
NCCER Welding in Agriscience II		010904	010905	010906
NCCER Welding Technology I		110741 OR 313700	110742 OR 313702	110743 OR 313703
NCCER Welding Technology II		110746 OR 313705	110747 OR 313712	110748 OR 313713
NCCER Welding Technology III		313621	313622	313623
NCCER Welding Technology IV		313624	313625	313626
Oil and Gas Production Operations		110955		
Physics I		150000		
PLTW Engineering Design and Development		110862		
PLTW Introduction to Engineering Design		110802		
PLTW Principles of Engineering		080109		
Principles of Engineering		110810	110811	
Principles of Engineering: LSU Partnership		110864		
Process Instrumentation I		110915		
Process Instrumentation II		110916		
Process Technician I		110911	110913	110914
Process Technician II		110912	110917	110918
Process Technician III		110919	110920	110921
Process Technology I: Equipment		110922		
Process Technology II: Unit Systems		110923		
Process Technology III: Operations		110924		
Quality Controls		313727		
Robotics Beginner		150723		
Robotics: Advanced		150730	150731	
Robotics: Intermediate		150729		
Robotics (LSU Partnership)		150780		
Sheet Metal		312700	312702	312703
SMAW Pipe 5G		313123		
SMAW Pipe 6G		313124		
T2 Safety Systems For Oil and Gas Production		110956		
Welding Technology		110230		