

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)* AutoDesk Certified User: • Fusion 360 • Rivet | Certificate of Technical Studies (LCTCS)* ADDA Certified Mechanical Apprentice Drafter | Technical Diploma (LCTCS)* 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 Logistics Associate or Technician (MSSC) | |
| | 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.

| 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 Logistics | | | 313831 | |
| 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 |

| Course Name | ½ Credit Course Code | 1 Credit Course Code | 2 Credit Course Code | 3 Credit Course Code |
|--|----------------------|----------------------|----------------------|----------------------|
| NCCER Millwright IV | | 313717 | 313746 | 313747 |
| 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 | | |