



MANUFACTURING & PROCESS TECHNOLOGY AAS

INDUSTRY, MANUFACTURING, & TRADES



Requirements to Earn this Associate Degree

Work with an advisor to develop your specialized education plan.

Manufacturing & Process Technology Core Requirements:

	Credits
• BIM 109A: Outlook/Internet.....	1
• BIM 180A: Microsoft Office (Word, Excel).....	2
• IST 100: Industrial Health & Safety	3
• IST 102: Technical Drawing Interpretation	3
• MPT 120: Intro to CAM	5
• MPT 140: Intro to IIOT and SCADA.....	3
• Approved Emphasis Electives (See page 5).....	46+

General Education Requirements

• CMST&210: Interpersonal Communication OR CMST&220: Public Speaking.....	5
• ENGL&101: Composition I	5
• FAD 150: Industrial First Aid.....	2
• MAP 117: Math for Workforce	5
• PSYC& 100: General Psychology OR SOC& 101: Intro to Sociology.....	5

Manufacturing & Process Technology Program Electives

• CHEM& 105: Chemical Concepts.....	5
• CHEM& 110: Chemical Concepts w/Lab.....	5
• CHEM& 121: Intro to Chemistry.....	5
• ENGR& 111: Engineering Graphics I.....	5
• ENGR& 112: Engineering Graphics II.....	5
• IST 107: Industrial Electricity I.....	5
• IST 120: Intro Preventive/Predictive Maintenance	3
• IST 150: Intro to Programmable Logic Controllers (PLCs).....	5
• IST 152: Programmable Automation Control	5
• IST 170: Intro to Instrumentation.....	5
• IST 207: Industrial Electricity II.....	5
• IST 221: Electronics I (Principles).....	5
• IST 222: Electronics II (Applications).....	5
• IST 223: Electronics III (Industrial).....	5
• IST 252: Programmable Automation Control III (HMI).....	5
• IST 270: Instrumentation II & Control Actuators.....	5
• IST 280: Mechanical Power.....	5
• IST 282: Fluid Power Transmission	5
• IST 284: Pumping & Hydraulics.....	5
• MPT 104: Intro to Electricity.....	5
• MPT 125: 2.5 Axis Milling.....	5
• MPT 130: CNC Turning.....	5
• MPT 135: Introduction to Additive Manufacturing.....	3
• MPT 145: Intro to Coordinate Metrology.....	5
• MPT 170: Introduction to Boiler & Refrigeration Systems.....	5
• MPT 210: Introduction to Industrial Robotics.....	5
• MPT 220: CAM for 3-Axis Milling.....	5
• MPT 225: CAM for Multi-Axis Milling.....	5
• MPT 230: Cobot-Enabled CNC Machining.....	3
• WLD 146: Industrial Welding.....	4

Total Credits Required: 90+

TO DO: Stay on track with this checklist!

TO DO'S:

QUARTER 1

- APPLY FOR FAFSA OR WASFA FOR NEXT YEAR
- SET UP YOUR BANKMOBILE ACCOUNT
- GET FAMILIAR WITH YOUR CTCLINK STUDENT HOMEPAGE
- MEET WITH YOUR ADVISOR

QUARTER 2

- MAKE AN EDUCATION PLAN WITH YOUR ADVISOR
- APPLY FOR BCC FOUNDATION SCHOLARSHIPS

QUARTER 3

- MEET WITH YOUR ADVISOR

QUARTER 4

- UPDATE YOUR EDUCATION PLAN WITH YOUR ADVISOR

QUARTER 5

- APPLY FOR GRADUATION (AFTER ENROLLING IN YOUR FINAL QUARTER OF CLASSES)

QUARTER 6

- ORDER CAP AND GOWN
- ATTEND GRADUATION!
- EXPLORE EMPLOYMENT OPPORTUNITIES

Career Outlook

Manufacturing and Process Technology provides students the ability to specialize their training to work in a variety of industry settings in our area including manufacturing facilities, data centers, food or chemical processing plants, and other businesses with need for regular facility or equipment maintenance.

Future Education Opportunities

This degree prepares students to pursue the Bachelor or Applied Science - Applied Management at Big Bend Community College.

Find Out More

(509) 793-2265; manufacturing@bigbend.edu

<https://www.bigbend.edu/academics/manufacturing-and-process-technology/>



Students are required to purchase tools and safety equipment.

Length of Program

90+ credits = 6 quarters* if you take 14-16 credits each quarter.

*Your specific route may take longer than 6 quarters depending on the number of credits you take each quarter and where you start in your math and English pathways.

Which Quarter Can I Begin?

The 2-year pathway starts in the Fall quarter, though courses may be started any quarter, this will extend time to degree.

Program Modality

This program can be completed on campus or hybrid. Courses are offered on-campus or hybrid (part on-campus, part online)

Helpful Hints

- Work closely with your advisor for program planning!

OPPORTUNITY FOR FREE \$\$\$

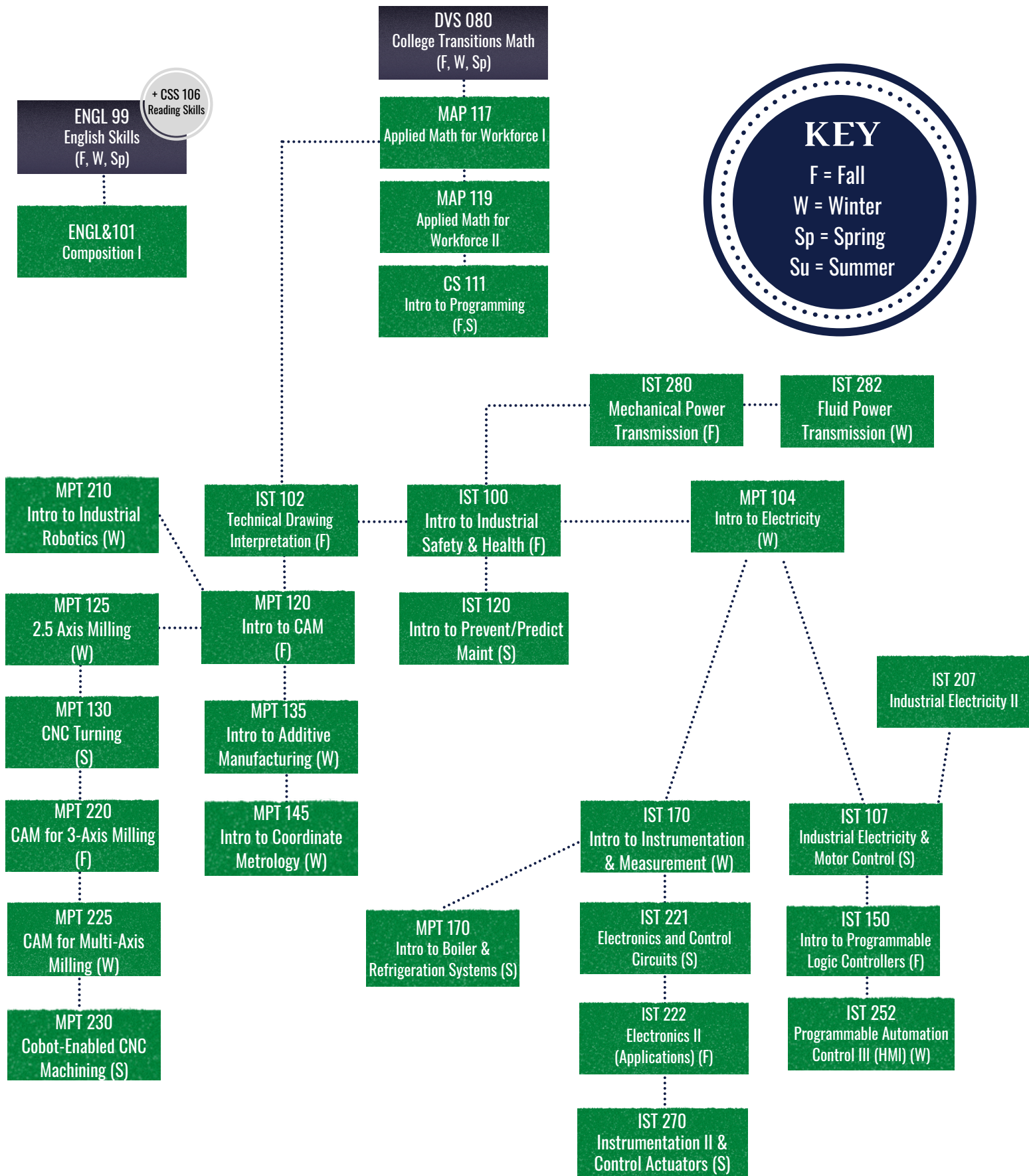
Workforce Education Services provides additional financial assistance for tuition and fees, books, tools, bus passes, and emergency support.

See if you qualify here!



Manufacturing & Process Technology Pre-Requisite Flow Chart

Start by talking with an advisor to determine which courses to take first based on your placement scores.



CERTIFICATE OPTIONS

MANUFACTURING & PROCESS TECHNOLOGY

Maintenance Mechanics Certificate of Achievement

Credits

- BIM 109A: Internet Communications..... 1
- BIM 180A: Introduction to Microsoft Office:..... 2
- CMST& 220: Public Speaking OR
CMST& 210: Interpersonal Communication..... 5
- ENGL&101: Composition I 5
- FAD 150: Industrial First Aid..... 2
- IST 107: Industrial Electricity and Motor Control..... 5
- IST 120: Introduction to Preventive/Predictive
Maintenance..... 3
- IST 170: Introduction to Instrumentation and
Measurement..... 5
- MAP 117: Math for Workforce..... 5
- MPT 140: Introduction to Industrial Internet of Things
(IIoT), SCADA(Supervisory Control and Data
Acquisition)..... 3
- PSYC& 100: General Psychology OR
SOC& 101: Intro to Sociology..... 5
- Advisor Approved MPT Elective..... 5

Total Credits: 59+

Coordinate Metrology Certificate of Accomplishment

Credits

- IST 102: Technical Drawing Interpretation..... 3
- MPT 120: Intro to CAM
(Computer Aided Manufacturing)..... 5
- MPT 145: Intro to Coordinate Metrology..... 3

Total Credits: 15

Machining Certificate of Accomplishment

Credits

- MPT 120: Intro to CAM (Computer Aided
Manufacturing)..... 5
- MPT 125: 2.5 Axis Milling..... 5
- MPT 130: CNC Turning..... 5

Total Credits: 15

Additive Manufacturing Certificate of Accomplishment

Credits

- IST 102: Technical Drawing Interpretation..... 3
- MPT 120: Intro to CAM
(Computer Aided Manufacturing)..... 5
- MPT 135: Introduction to Additive Manufacturing... 3

Total Credits: 11

Multi-Axis Machining Certificate of Accomplishment

Credits

- MPT 120: Intro to CAM (Computer Aided
Manufacturing) 5
- MPT 125: 2.5 Axis Milling..... 5
- MPT 130: CNC Turning..... 5
- MPT 220: CAM for 3-Axis Milling..... 5
- MPT 225: CAM for Multi-Axis Milling..... 5

Total Credits: 25

APPROVED EMPHASIS ELECTIVES

Automation & Robotics Emphasis Electives

CS 111: Intro to Programming.....	5
IST 107: Industrial Electricity I.....	5
IST 150: Intro to Programmable Logic Controllers (PLCs).....	5
IST 170: Intro to Instrumentation.....	5
IST 221 Electronics I (Principles).....	5
IST 222 Electronics II (Applications).....	5
IST 252 Programmable Automation Control III (HMI).....	5
IST 270: Instrumentation II & Control Actuators.....	5
MPT 104: Introduction to Electricity.....	5
MPT 210: Introduction to Industrial Robotics.....	5

Computer Aided Manufacturing (CAM) Emphasis Electives

ENGR& 112: Engineering Graphics II.....	5
MPT 125: 2.5 Axis Milling.....	5
MPT 130: CNC Turning.....	5
MPT 135: Introduction to Additive Manufacturing.....	3
MPT 145: Intro to Coordinate Metrology.....	5
MPT 210: Introduction to Industrial Robotics.....	5
MPT 220: CAM for 3-Axis Milling.....	5
MPT 225: CAM for Multi-Axis Milling.....	5
MPT 230: Cobot-Enabled CNC Machining.....	3
Advisor Approved Additional Credits	12

Maintenance Emphasis Electives

IST 107: Industrial Electricity I.....	5
IST 120: Intro Preventive/Predictive Maintenance	3
IST 150: Intro to Programmable Logic Controllers (PLCs).....	5
IST 170: Intro to Instrumentation.....	5
IST 221: Electronics and Control Circuits.....	5
IST 222: Electronics II (Applications).....	5
IST 280: Mechanical Power.....	5
IST 282: Fluid Power Transmission	5
MPT 104: Intro to Electricity.....	5
MPT 170: Introduction to Boiler & Refrigeration Systems.....	5
WLD 146: Industrial Welding.....	4

My Education Plan

Name: _____

ID #: _____

 Quarter/Year	Quarter/Year
Quarter/Year	Quarter/Year
Quarter/Year	Quarter/Year

My Education Plan

Name: _____

ID #: _____

Quarter/Year	Quarter/Year
Quarter/Year	Quarter/Year
Quarter/Year	Quarter/Year



Suggested Schedule to Earn this Associate Degree

If the classes listed below don't fit your schedule or you're planning to start after fall quarter, work with an advisor to develop your specialized education plan.

Year One

Fall	Credits
• IST 100: Intro to Industrial Safety & Health.....	3
• IST 102: Technical Drawing Interpretation.....	3
• MAP 117: Applied Math for Workforce Programs I.....	5
• MPT 120: Intro to CAM (Computer Aided Manufacturing).....	5
Winter	
• BIM 109A: Outlook/Internet.....	1
• BIM 180A: Microsoft Office (Word, Excel).....	2
• CMST&210: Interpersonal Communication OR CMST&220: Public Speaking.....	5
• Specified Elective: Select with advisor.....	5
Spring	
• MPT 140: Intro to IIOT and SCADA.....	3
• Specified Elective: Select with advisor.....	5
• Specified Elective: Select with advisor.....	5

Year Two

Fall	
• Specified Elective: Select with advisor.....	16
Winter	
• ENGL&101: Composition I	5
• Specified Elective: Select with advisor.....	5
• Specified Elective: Select with advisor.....	5
Spring	
• FAD 150: Industrial First Aid.....	2
• PSYC&100: General Psychology OR SOC&101: Intro to Sociology.....	5
• Specified Elective: Select with advisor.....	10