

# BIG BEND COMMUNITY COLLEGE

## INDUSTRY, MANUFACTURING & TRADES MAINTENANCE MECHANICS TECHNOLOGY

NAME:



This program was designed by representatives of the local industries and Big Bend Community College to prepare students for entry-level employment as industrial maintenance mechanics or to update skills for practicing maintenance employees.

The Industrial Systems Technology – Maintenance Mechanics Emphasis program provides foundation in safety, fabrication, welding, refrigeration, machining, power transmission, industrial electricity, fluid power, programmable logic controllers, and instrumentation. Skilled maintenance mechanics routinely install new industrial machinery and systems, maintain and repair equipment, and perform tests on equipment to ensure safe operation.

Students apply technical knowledge and techniques to install, repair, and maintain industrial equipment such as motors, pumps, pneumatic tools, conveyor systems, production machinery, pipeline distribution systems, and automated equipment. Training is offered in: diagnostic techniques, trouble shooting, use of test instruments, principles of preventive and predictive maintenance, mechanics, pneumatics, hydraulics, refrigeration, electricity, and electronics as they relate to industrial maintenance. Related instruction includes applied mathematics, blueprint reading, written and oral communication, and human relations.

### ENTRY REQUIREMENTS

- Complete Admissions and Placement processes
- Meet with IST advisor prior to enrolling

### [DEGREE/CREDENTIAL] REQUIREMENTS

#### Related Instruction

- |   |   |
|---|---|
| <input type="checkbox"/> BUS 120 – Human Relations on the Job (4) | <input type="checkbox"/> FAD 150 – Industrial First Aid and CPR (2) |
| <input type="checkbox"/> CMST 100 – Human Communications (4)      | <input type="checkbox"/> MAP 103 – Applied Mathematics (5)          |
| <input type="checkbox"/> ENGL 109 – Applied Technical Writing (3) |   |

#### Program Requirements

- |   |   |
|---|---|
| <input type="checkbox"/> IST 100 – Intro. to Industrial Safety and Health (3) | <input type="checkbox"/> IST 170 – Intro. to Instrumentation (5)        |
| <input type="checkbox"/> IST 102 – Technical Drawing Interpretation (3)       | <input type="checkbox"/> IST 180 – Machining I (5)                      |
| <input type="checkbox"/> IST 105 – Basic Electricity: DC Circuit Analysis (5) | <input type="checkbox"/> IST 182 – Machining II (5)                     |
| <input type="checkbox"/> IST 106 – Basic Electricity: AC Circuit Analysis (5) | <input type="checkbox"/> IST 280 – Mechanical Power Transmission (5)    |
| <input type="checkbox"/> IST 107 – Industrial Electricity I (5)               | <input type="checkbox"/> IST 282 – Fluid Power Transmission (5)         |
| <input type="checkbox"/> IST 120 – Intro. to Prevention/Predictive Maint. (3) | <input type="checkbox"/> IST 284 – Pump Hydraulics/Mechanics (4)        |
| <input type="checkbox"/> IST 130 – Intro. to Refrigeration and AC (5)         | <input type="checkbox"/> WLD 111 – Welding Process I (6)                |
| <input type="checkbox"/> IST 136 – Intro. to Industrial Boilers (5)           | <input type="checkbox"/> WLD 122 – Gas Metal Arc Welding I (3)          |
| <input type="checkbox"/> IST 150 – Intro. to PLCs I (5)                       | <input type="checkbox"/> WLD 132 – Gas Tungsten Arc Welding I (TIG) (3) |

#### Program Electives

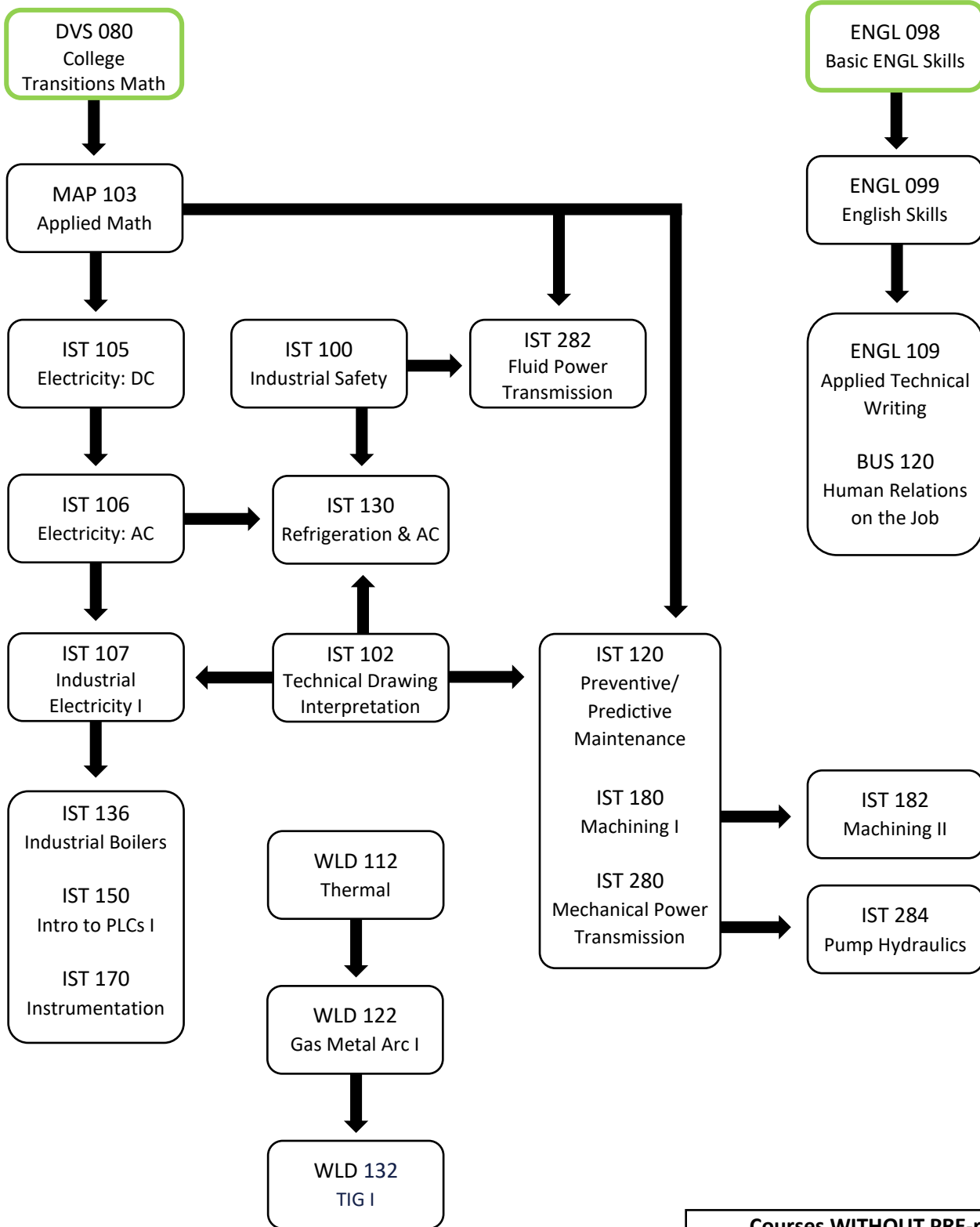
- |  |  |
|--|--|
| <input type="checkbox"/> Approved Electives – See your IST advisor | <input type="checkbox"/> Work-based Learning Recommended |
|--|--|

101+ TOTAL DEGREE CREDITS

SID:

## MAINTENANCE MECHANICS TECHNOLOGY PRE-REQUISITE FLOW CHART

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



**KEY**

STARTING POINT of SEQUENCE

PRE-requisite

CO-requisite

[F = fall W = winter Sp = spring Su = summer]

**Courses WITHOUT PRE-requisites**

Program Course Requirements

IST 100 – Industrial Safety & Health

IST 102 – Tech. Drawing Interpretation

CMST 100 – Human Communications

FAD 150 – Industrial First Aid & CPR

WLD 111 – Welding Process I





**Big Bend Community College**  
**WORKFORCE EDUCATION PROGRAM REQUIREMENTS**

**Certificate of Achievement**

Students working toward a Certificate of Achievement need to develop a program plan with the faculty advisor in their Workforce Education area of interest. The plan must include all related instruction components. The Certificate of Achievement is designed to provide recognition for the student who has not completed an Associate in Applied Science degree program.

**Certificate of Accomplishment**

Students working toward a Certificate of Accomplishment need to develop a program plan with the faculty advisor in their Workforce Education area of interest. The Certificate of Achievement is designed to provide recognition for the student who does not complete a Certificate of Achievement or an Associate in Applied Science degree program.

**Changes or substitutions for course work in the college catalog must be listed and approved by the advisor.** It is essential that students meet quarterly with their advisor before registration to review progress and plan their program.

Each program plan must be approved by the Workforce Education program advisor and Dean of Workforce Education. Certificates will be issued out of the Dean of Workforce Education Instructional Services office.

**Certificate of Achievement**

**Certificate of Accomplishment**

*Title of Certificate:*

\_\_\_\_\_

*Advisor Approval:*

\_\_\_\_\_

Advisor

\_\_\_\_\_

Date

*Program Completion Approval:*

\_\_\_\_\_

Dean of Workforce Education

\_\_\_\_\_

Date

\_\_\_\_\_

Instructional Services Office Assistant

\_\_\_\_\_

Date

## Big Bend Community College WORKFORCE EDUCATION PROGRAM REQUIREMENTS

### Associate in Applied Science Degree

**Credit Requirement:** Completion of the total credit requirements of the approved Workforce Education Program Plan. Minimum of 90 quarter hours. It is the student's responsibility to insure that he/she meets all of the technical and general education degree requirements.

**MATHEMATICS REQUIREMENT:** 3-5 credits\* in mathematics courses as stated in the approved Professional/Technical Program Plan.

BUS 102	Business Mathematics
MAP 100	Applied Mathematics (AMT)*
MAP 101	Applied Mathematics (AUT/WLD)
MAP 103	Applied Mathematics (MMT/IET)
MAP 117	Applied Mathematics for Workforce I
MAP 119	Applied Mathematics for Workforce II
MATH& 107	Math in Society
MATH& 141	Pre-Calculus I
MATH& 146	Intro to Statistics
MATH 147	Finite Mathematics

\*AMT program requires two MAP 100 credits

**WRITTEN COMMUNICATIONS REQUIREMENT:** 3-5 credits in written communications courses as stated in the approved Professional/Technical Program Plan.

BUS 121	Business English
ENGL& 101	English Composition I
ENGL 109	Applied Technical Writing

**ORAL COMMUNICATIONS REQUIREMENT:** 3-5 credits in oral communications courses as stated in the approved Professional/Technical Program Plan.

AVF 225	Effective Communications in Flight Instruction
CMST 100	Human communications
CMST& 210	Interpersonal Communications
CMST& 220	Public Speaking

**HUMAN RELATIONS REQUIREMENT:** 3-5 credits in human relations courses as stated in the approved Professional/Technical Program Plan.

BUS 120	Human Relations on the Job
EDUC& 115	Child Development
PSYC& 100	General Psychology
SOC& 101	Intro to Sociology

**INDUSTRIAL FIRST AID REQUIREMENT:** 2 credits in Industrial First Aid or equivalent or higher certification as stated in the approved Professional/Technical Program Plan.

FAD 150	Industrial First Aid and CPR plus Bloodborne Pathogens
Current First Aid/CPR, First Responder, or EMT card	

Approval: \_\_\_\_\_

Advisor \_\_\_\_\_ Date \_\_\_\_\_

Program Completion Approval: \_\_\_\_\_

Dean of Workforce Education \_\_\_\_\_ Date \_\_\_\_\_

Each program must be approved by the Workforce Education program advisor. Program changes and substitutions must be approved by the program advisor prior to application for degree.