# Advanced Technology & Manufacturing Academy

## Why join the Advanced Technology and Manufacturing Academy?

- hands-on learning- Students explore specific career paths and acquire unique skills in manufacturing productions operations and facilities maintenance
- training sites- St. Philip's College Southwest Campus, the Central Texas Technology Center in New Braunfels and Sam Houston High School campus.
- lucrative summer- Earn approximately \$2,500 in a paid summer internship after successfully completing the junior year.
- **super salaries** Graduates can expect starting salaries from \$10/hour to \$15/hour.
- well supported- The San Antonio Manufacturers Association (SAMA) is a committed partner, offering job internship opportunities.
- diversified skills- San Antonio's manufacturers are growing and seeking future employees with diverse skill sets.
- **high-tech**, **high-wage jobs** –San Antonio manufactures need entry-level workers with unique skills for high-tech, high-wage jobs. The average salary of SA's 52,780 manufacturing employees is more than \$41,500.00. (Source: Greater SA Chamber of Commerce study)
- The manufacturing industry is one of the largest sectors of the San Antonio economy. Its economic impact in 2006 was \$14.4 billion, paying nearly \$2.2 billion in wages and salaries.

# **Admission Criteria**

Students interested in attending the Advanced Technology & Manufacturing Academy program must meet the following admission requirements:

- 1. Junior class standing to include completion of all required courses toward high school graduation plan.
- 2. Completion of 13 credits by end of sophomore year and be at least 16 years old by start of fall class.
- 3. Completion of Academy Application with required signatures and forms.
- 4. Copy of current Academic Achievement Record (AAR)/Official High School Transcript with an official raised seal and one copy of the daily attendance report for the current school year.
- 5. Students must be passing all high school classes with a "C" or higher. Special emphasis will be placed on the following classes: Algebra I, Geometry, and English.

- Complete Apply Texas Application on-line <u>www.applytexas.org</u>. Please call your coordinator for specific instructions. You will need to submit your Apply Texas ID number to the coordinator. This will generate a Banner ID that you will need to use as your ID number for your Accuplacer or THEA.
- 7. Complete all sections of Accuplacer or THEA: Reading, English (w/ Essay), and Math. Must meet all College Dual Credit and Program minimum placement test score requirements in Math, Reading, and English. Students must pass one section in Accuplacer or THEA to qualify for the Aerospace Academy.

#### **Accuplacer Minimum Placement Scores**

Math: 63 Reading: 78

English: 80 in Sentence Skills with a score of 5 in Essay, or a score of 6 or higher in Essay.

### **THEA Minimum Placement Scores**

Math: 38 Reading: 41

English: 220 and WSAM 3

- There is a \$29.00 fee for the exam. Student must provide a photo ID and social security number at the time of testing. Please contact college testing centers directly to schedule testing and to get testing instructions.
- There is a practice website at <a href="http://www.thea.nesinc.com/practice.htm">http://www.thea.nesinc.com/practice.htm</a> that you can use to preview the THEA IBT or <a href="http://www.testprepreview.com">www.testprepreview.com</a> for Accuplacer.
- You will receive a printout of Accuplacer or THEA test scores that you can submit to the Coordinator for your Academy program.
- You may contact one of the following testing centers to schedule the Accuplacer or ASSET or THEA:

St. Philip's College	210-486-2830
St. Philip's College Southwest Campus	210-486-7281
Northwest Vista College	210-486-4346
Palo Alto College	210-486-3444
San Antonio College	210-486-0444
Northeast Lakeview College	210-486-5401
Center Texas Technology Center	210-431-7111

8. Consult with your high school counselor to determine eligibility to participate in the Alamo Academies and update your graduation plan.

# Curriculum

# Advanced Technology & Manufacturing Academy (ATMA) Curriculum with NAM-Endorsed Skills Certification System Implementation

# (1st year for all ATMA students)

MCHN 1302 -- Machinist II (3 credits): A review of applied math models and a study of different blueprints, with emphasis on machine blueprints and the application of each.

MCHN 1438 – Basic Machine Shop (4 credits): An introduction course that assists the student in understanding the machinist occupation. The student begins by using basic machine tools such as the lathe, milling machine, drill press, and bench grinder. Machine terminology, theory, math, and bench work using common measuring tools.

MCHN 1320 – Precision Tools and Measurements (3 credits): An introduction to the modern science of dimensional metrology. Emphasis on the identification, selection, and application of various types of precision instruments associated with the machining trade.

**INMT 1248 – Manufacturing Processes (2 credits):** Exploration of a variety of methods used in manufacturing. Theory and application of processes including but not limited to metal forming, welding, and injection molding.

**WLDG 1200 -- Introduction to Welding (2 credits):** Equipment used in oxy-fuel and arc welding. Course includes cutting of ferrous metals and emphasizes welding and cutting safety and basic welding processes.

#### (Summer Session for all ATMA students)

**MCHN 2266** -- **Practicum (2 credits):** Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

## (2<sup>nd</sup> year for all ATMA students)

**INMT 2303** -- **Pumps, Compressors, & Mechanical Drives (3 credits)**A study of the theory and operations of various types of pumps and compressors. Topics include mechanical power transmission systems including gears, v-belts, and chain drives.

MCHN 1426 -- Introduction to Computer – Aided Manufacturing (CAM) (4 credits): A study of Computer-Assisted Manufacturing (CAM) systems. CAM software is used to develop applications for manufacturing. Class emphasis will be on tool geometry, tool selection, and the tool library.

QCTC 1243 -- Quality Assurance (2 credits): Principles and application designed to introduce quality assurance.

**ELPT 1319 -- Basic Electrical Theory (3 credits):** Basic theory and practice of electrical circuits. Course includes calculations as applied to alternating and direct current.

**ENTC 1301** -- **Robotics I (3 credits):** An introduction to Robots/Automation. Course includes history, terminology, classification of robots, basic components, control systems, alternating current and hydraulic servomechanisms, programming, sensors, types of drive, end-of-arm tooling, end effectors, safety and design procedures.