

SCHOOL OF AUTOMOTIVE  
MACHINISTS & TECHNOLOGY

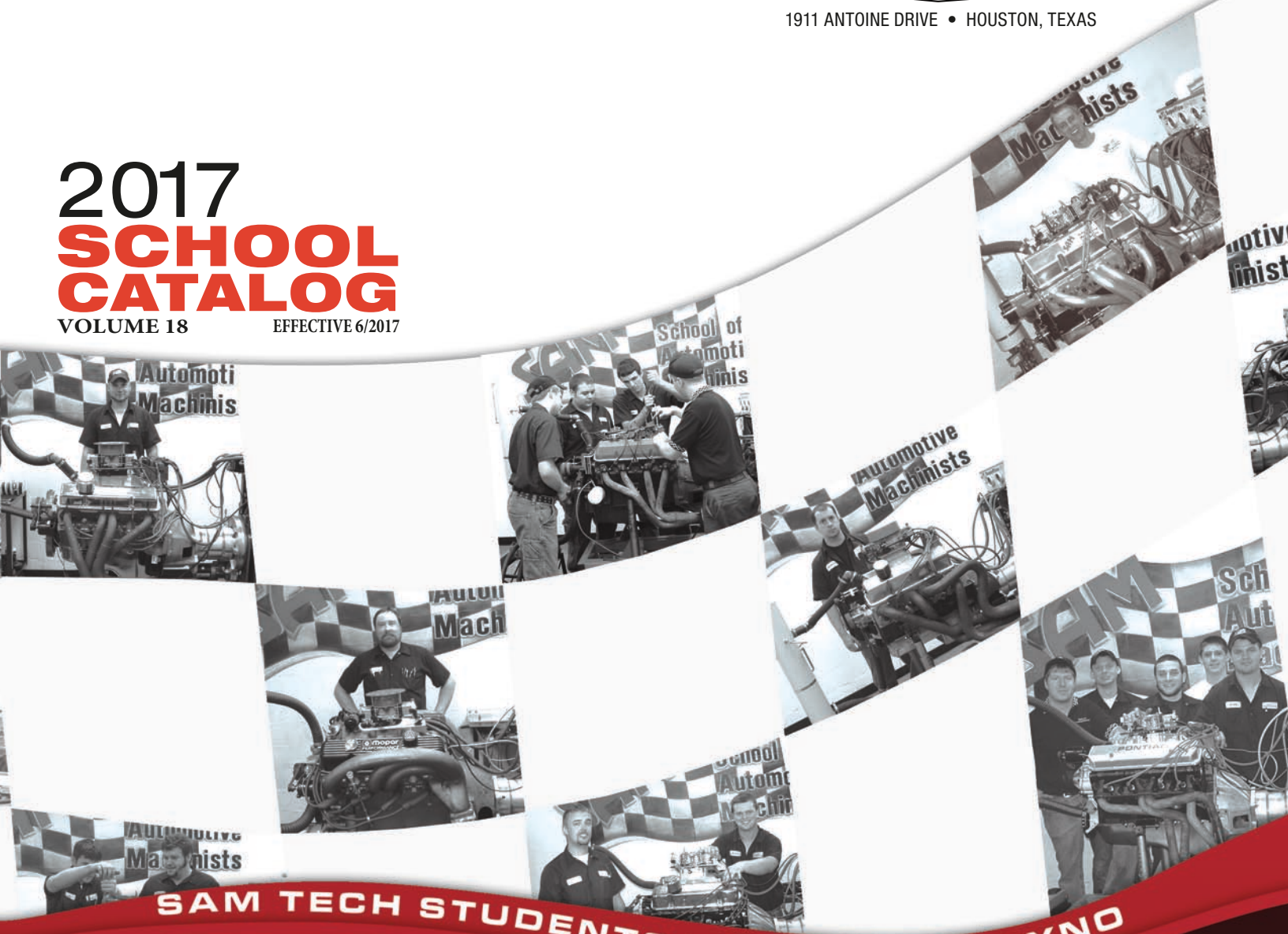
# **SAM TECH**

SAMTECH.EDU

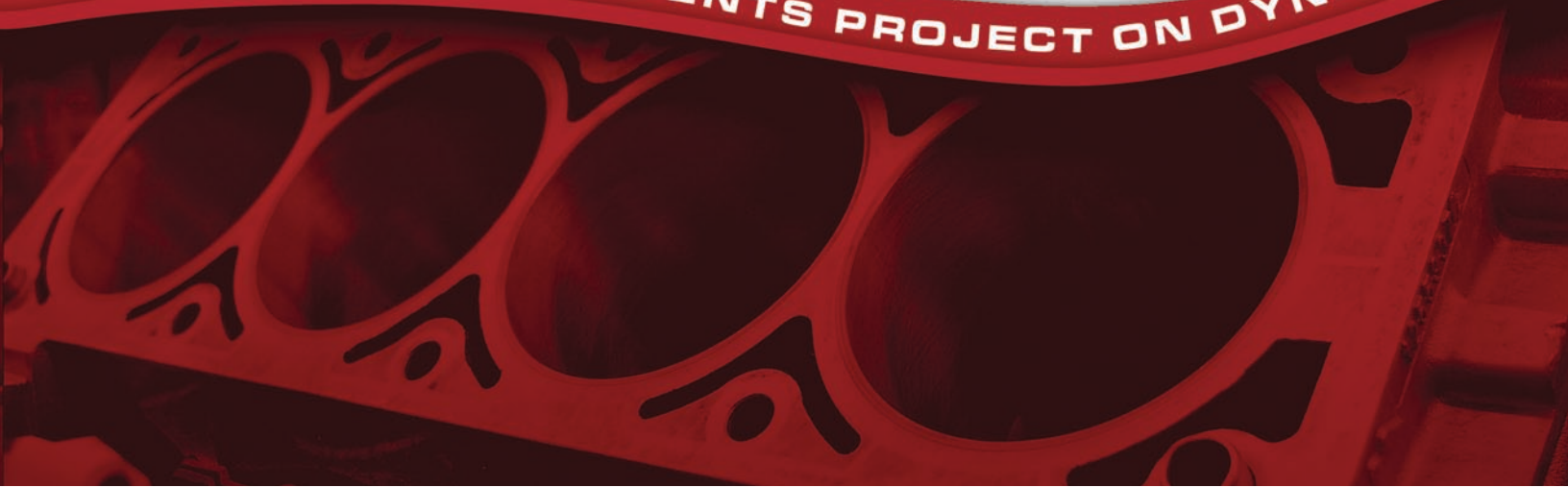
1911 ANTOINE DRIVE • HOUSTON, TEXAS

# 2017 SCHOOL CATALOG

VOLUME 18 EFFECTIVE 6/2017



**SAM TECH STUDENTS PROJECT ON DYNO**



## TABLE OF CONTENTS

ACADEMIC STRUCTURE & GRADING .....	5	MAKE UP WORK .....	5
ADMISSION REQUIREMENTS .....	4	MINIMUM CANCELLATION POLICY .....	2
ADVISING .....	1	ORIENTATION .....	1
APPEAL/RE-ADMISSION.....	4	PHILOSOPHY & MISSION STATEMENT .....	1
APPLICATION PROCEDURES .....	3	PREVIOUS EDUCATION/TRAINING CREDIT .....	4
APPROVALS & MEMBERSHIPS.....	1	REFUND POLICY .....	2
ATTENDANCE PROCEDURES.....	4	RETURN OF TITLE IV FUNDS .....	Sup-B
AWARDS .....	5	SATISFACTORY ACADEMIC PROGRESS .....	5
CAUSES OF TERMINATION .....	4	SCHOOL CALENDAR & HOURS .....	2
CONDUCT POLICY .....	4	SCHOOL PAYMENT PLANS.....	2
COURSE OBJECTIVES & DESCRIPTIONS... 7-17		SIZE OF CLASS/RATIO .....	5
EDUCATIONAL OBJECTIVES .....	1	STUDENT ACTIVITIES .....	2
ENROLLMENT & HOLIDAYS.....	Sup-A	STUDENT CONSUMER INFO MANUAL .....	2
FACILITIES .....	1	STUDENT EVALUATION .....	6
FACULTY .....	Sup-A	SUBJECT GRADING SYSTEM LAB/THEORY .....	5
FINANCIAL ASSISTANCE.....	2	SUPPLEMENTAL INCOME.....	2
GRADUATION.....	5	SUSPENSION .....	4
GRIEVANCES & COMPLAINTS.....	5	TARDINESS POLICY .....	4
HISTORY .....	1	TEXTBOOKS & SUPPLIES.....	2
HOUSING.....	1	TOOLS & SUPPLIES.....	2
INDIVIDUAL ASSISTANCE.....	6	TRANSCRIPTS .....	2
JOB PLACEMENT ASSISTANCE .....	2	TUITION & FEES.....	Sup-A
LEAVE OF ABSENCE.....	4	WITHDRAWAL FROM SCHOOL .....	2

The information in this catalog is true and correct to the best of my knowledge.

*Judson Massingill*

Founder/Director of Education

### HISTORY

The School of Automotive Machinists was the concept of Linda and Judson Massingill who had for approximately nine years trained automotive machinists for their machine shop (Northwest Engine & Supply). During this period of time many well-trained employees departed to open their own automotive machine shops. The loss of these highly skilled, well trained machinists slowed down the general production of the machine shop. To help solve this problem, Mr. and Mrs. Massingill began to take on students as apprentices; teaching them the science and skill of the automotive machinist, which led to the founding of the School in 1985. The School of Automotive Machinists was developed to fill a need and a void in the automotive industry. The initial two courses received state approval in 1989, became accredited by the Accrediting Commission of Career Schools and Colleges (ACCSC) and approved by the Department of Education in 1991. In July of 2004, final approval was received for a third course and in 2006, the School received approval for its fourth program which is a combination of the Block and Head Machining programs. In October 2012, approval was received to offer an academic associate degree. Motorsports Welding was approved in November 2014. The Motorsports EFI Tuning program was approved in November 2015. In February 2016, the School name was changed to the School of Automotive Machinists & Technology.

MM&L Corporation owns the School of Automotive Machinists & Technology and is responsible for all activities of the School.

We have established a good working relationship with many nationally known standard and high performance industry shops. Our graduates have been placed locally and nationwide in both public and private automotive machine shops.

### PHILOSOPHY & MISSION STATEMENT

The School of Automotive Machinists & Technology (SAM Tech) believes strongly in the education of the professional automotive machinist. The curriculum is structured such that it provides the student with training to meet the demands of today's work place plus job placement assistance to successfully enter the world of work. The School strives to develop and offer programs so that each student can achieve his/her goal of maximum learning in the required time while maintaining quality educational standards. Therefore, skill and knowledge should lead to job placement, satisfaction, and advancement.

SAM Tech focuses on the values of positive attitudes, ethical conduct, and proper behavior at the workplace and in relation to employers, co-workers, and the public. The purpose of the School of Automotive Machinists & Technology is to offer professional instruction that will enable the student to develop his/her educational potential and increase his/her contribution to society.

### FACILITIES

The School of Automotive Machinists & Technology has 16,000 square feet of floor space which includes spacious air-conditioned classrooms, teaching lab, educational resource center, student lounge, faculty and administrative offices. The classrooms are designed and equipped for academic instruction within the faculty-student ratio for occupational training as specified by state regulatory authorities.

The lab equipment is the same as found in a typical industry working environment (see

Equipment List Addendum). The lab provides an area for practical demonstration and hands-on experience to reinforce the academic theory.

An educational resource center is provided for use by both students and staff.

A student lounge is available for social contact during class breaks. Vending machines for light refreshments are located in the student lounge area.

Parking is available at the School's campus and additional parking is adjacent to the School.

### EDUCATIONAL OBJECTIVES

In order to accomplish this philosophy and purpose, the School of Automotive Machinists & Technology has established the following primary educational objectives:

1. To offer training and instruction in automotive technology at a superior level.
2. To provide an opportunity for a student to achieve an entry level skilled trade in the automotive field.
3. To offer an education that will enrich the student's personal life and prepare him/her for better citizenship, as well as, increase his/her employment potential.

### APPROVALS & MEMBERSHIPS

The School of Automotive Machinists & Technology is approved by, or holds memberships in, the following organizations and associations:

#### APPROVALS

1. Accrediting Commission of Career Schools and Colleges (ACCSC)
2. Texas Higher Education Coordinating Board (THECB)
3. United States Department of Education
4. Approved to train VA eligible persons through the Texas Veterans Commission, Austin, Texas
5. Texas Workforce Commission, Career Schools and Colleges (TWC-CSC)
6. Texas Department of Assistive Rehabilitative Services (DARS)
7. Texas Workforce Commission, Workforce Investment Act (TWC-WIA)

#### MEMBERSHIPS

1. Automotive Engine Rebuilders Association (AERA)
2. Texas Association of Student Financial Aid Administrators (TASFAA).
3. Automotive Parts & Services Association (APSA)
4. Specialty Equipment Manufacturing Association (SEMA)
5. Career Colleges and Schools of Texas (CCST)

#### ADVISING

All students are encouraged to seek assistance from the Director or other appropriate staff members concerning vocational decisions or any other problems that affect the student's attendance or grades in the School. Degree students are advised at least twice during the general education section.

#### ORIENTATION

The School provides a student orientation program for all new students. The program serves to acquaint the student with the School's policies and procedures, the faculty, course objectives, curriculum and other services offered by the School.

#### HOUSING

The School does not maintain a dormitory facility. However, students desiring housing



accommodations should contact the admissions department for information.

### **TRANSCRIPTS**

The School requires official transcripts or diploma from high schools and post secondary schools attended. A copy of the official GED certificate or test score is required. Students may request transcripts for completed programs at any time.

### **LEARNING RESOURCE SYSTEM**

The School has established a Learning Resource System consisting of periodicals, books, and video-cassette software to supplement and to assist in the teaching of its programs. These resources are available to students seeking other material to support their curriculum. The School also maintains a subscription to the Library and Information Resources Network (LIRN) as an additional learning resource.

### **JOB PLACEMENT ASSISTANCE**

SAM Tech will assist graduates and students to locate suitable employment. The School does not guarantee employment, but stands ready to help in the job search. With the student's consent, information on the student's demonstrated performance will be made available to prospective employers and to students upon request without charge.

### **STUDENT ACTIVITIES**

The School of Automotive Machinists & Technology does not maintain a regularly planned student activities calendar. The School does, from time to time, arrange for field trips, seminars, and other special activities that they feel are supportive to the course of study as well as being socially acceptable and entertaining to the student body. Examples of such activities include tours of local professional race team shops, seminars featuring performance and race engine builders, technical speakers from parts and equipment manufacturers, and tours of working machine shops.

### **STUDENT CONSUMER INFORMATION MANUAL**

Please refer to the Student Consumer Information manual for details about the School's policies and procedures.

### **GAINFUL EMPLOYMENT DISCLOSURES**

The School's Gainful Employment Disclosures can be found at:

<https://samracing.com/financial-aid.html>

### **FINANCIAL ASSISTANCE**

Financial aid programs consisting of grants, loans or private financing are available. Most students can qualify for some form of assistance. Contact the financial aid office for qualifications and details.

### **SUPPLEMENTAL INCOME**

The School of Automotive Machinists & Technology will assist in locating positions and placing students in full or part time jobs, while attending School, if desired.

### **SCHOOL CALENDAR AND HOURS**

School holidays will be New Year's Holiday, Spring Break, Good Friday, Memorial Day, Independence Day/Summer Break, Labor Day, Thanksgiving, and Winter Holiday. See Supplement A for day school classes and night school classes for program entrance and ending dates.

### **CLASS HOURS**

#### **DAY SCHOOL**

Class is scheduled for 4.5 hours per day, Monday-

Friday, for 22.5 clock hours per week, from 8:00 a.m. to 12:30 p.m.; afternoon class from 1:30 p.m. to 6:00 p.m.; a 15-minute break will be given at 9:55 a.m. and 3:25 p.m. Courses 103, 104, 105, and 106 are delivered Monday-Thursday from 7:00 a.m. to 12:30 p.m. (5.5 hours per day, 22 clock hours per week.) Special class sessions may be scheduled.

#### **NIGHT SCHOOL**

Class is scheduled for 4 hours per evening, Monday-Thursday for 16 clock hours per week, from 6:00 p.m. to 10:00 p.m.; a 15-minute break will be given at 7:55 p.m. (when in session). Special class sessions may be scheduled.

#### **GENERAL EDUCATION SECTION**

Please see the course syllabus for the schedule of the general education section classes.

#### **OFFICE HOURS**

The School business office shall be open Monday through Thursday from 9:00 a.m. to 6:00 p.m. (6:30 p.m. if Night Class scheduled) and on Friday from 9:00 a.m. to 5:00 p.m.

#### **TEXTBOOKS AND MANUALS**

Textbooks and manuals are available for purchase from the School. Students must have all required textbooks and manuals on the first day of class.

#### **TOOLS AND SUPPLIES**

All tools necessary for training are supplied. It is recommended that the student purchase a dial caliper tool at approximately \$75.00. This caliper is used throughout the program and will be used when the student graduates and obtains employment in the occupational field.

#### **SCHOOL PAYMENT PLANS**

The School accepts tuition wholly before entry, or offers weekly or monthly payment plans to meet the student's needs. Method of payment will be arranged prior to or on the day of entry.

#### **COLLECTION OF DELINQUENT FEES AND PAYMENTS**

The student who terminates with tuition or other fees due the School are requested to make arrangements for payment at the time of termination. The School will attempt to secure payment within one month. Should the amount due remain unpaid for a period of 30 days after the student leaves the School, the account will be submitted to a collection agency.

#### **WITHDRAWAL FROM SCHOOL**

Any student wishing to withdraw from the School should contact the Education Director. Failure to withdraw properly may result in the assignment of failing grades that appear on the student's permanent record. When withdrawing, the student should complete a withdrawal form. All loaned books and materials must be returned in satisfactory condition or the student will be charged for their replacement.

#### **MINIMUM CANCELLATION POLICY**

A full refund will be made to any student:

1. Who cancels the enrollment contract within 72 hours (until midnight of the third day excluding Saturdays, Sundays and legal holidays) after the enrollment contract is signed. A full refund will also be made to any student who cancels enrollment within the student's first three scheduled class days, except that the school may retain not more than \$100 in any administrative fees charged, as well as items of extra expense that are necessary for the portion of the program attended and stated separately on the enrollment agreement.

2. Whose enrollment was procured as a result of any misrepresentation in advertising, promotional materials of the School, or misrepresentations by the owner or representatives of the School.
3. An applicant rejected by the School is entitled to a refund of all monies paid.
4. An applicant has the right to cancel this contract if he/she was recruited by a door-to-door salesman.
5. Students who have not visited the School facility prior to enrollment will have the opportunity to withdraw without a penalty within three days following either attendance at a regularly scheduled orientation or following a tour of the School facilities and inspection of equipment.

#### **REFUND POLICY**

1. Refund computations will be based on scheduled clock hours of class attendance through the last date of attendance. Leaves of absence, suspensions, and School holidays will not be counted as part of the scheduled class attendance.
2. Refunds for resident programs and synchronous distance education courses or programs will be based on the period of enrollment computed on the basis of course or program time;
3. The effective date of termination for refund purposes in residence programs and synchronous distance education courses or programs will be the earliest of the following:
  - (a) The last date of attendance, if the student is terminated by the school or college;
  - (b) The date of receipt of written notice of withdrawal from the student; or
  - (c) 10 school days following the last date of attendance;
4. If tuition and fees are collected in advance of entrance, and if, after expiration of the 72-hour cancellation privilege, the student does not enter the residence career school or college, not more than \$100 shall be retained by the school or college;
5. For the student who enters a residence program or a synchronous distance education program and who withdraws or is otherwise terminated, the school or college may retain not more than \$100 of any administrative fees charged and the minimum refund of the remaining tuition and fees will be the pro rata portion of tuition, fees, and other charges that the number of hours remaining in the portion of the course or program for which the student has been charged after the effective date of termination bears to the total number of hours in the portion of the course or program for which the student has been charged, except that a student may not collect a refund if the student has completed 75 percent or more of the total number of hours in the portion of the program for which the student has been charged on the effective date of termination;
6. Refunds of items of extra expense to the student, such as books, tools, or other supplies should be handled separately from refund of tuition and other academic fees. The student will not be required to purchase instructional supplies, books, and tools until such time as these materials are required. Once these materials are

### 3 GENERAL INFORMATION



Original Ford 427 on the Dyno

purchased, no refund will be made. For full refunds, the school can withhold costs for these types of items from the refund as long as they were necessary for the portion of the program attended and separately stated in the enrollment agreement. Any such items not required for the portion of the program attended must be included in the refund;

7. Refunds based on enrollment in residence and synchronous distance education courses or programs be totally consummated within 60 days after the effective date of termination;
8. Refunds for asynchronous distance education courses or programs will be computed on the basis of the number of lessons in the course or program;
9. The effective date of termination for refund purposes in asynchronous distance education courses or programs will be the earliest of the following:
  - (a) The date of notification to the student if the student is terminated;
  - (b) The date of receipt of written notice of withdrawal from the student; or
  - (c) The end of the third calendar month following the month in which the student's last lesson assignment was received unless notification has been received from the student that the student wishes to remain enrolled;
10. If tuition and fees are collected before any courses for a program have been completed, and if, after expiration of the 72-hour cancellation privilege, the student fails to begin the program, not more than \$50 shall be retained by the school or college;
11. In cases of termination or withdrawal after the student has begun the asynchronous distance education course or program, the school or college may retain \$50 of tuition and fees, and the minimum refund policy must provide that the student will be refunded the pro rata portion of the remaining tuition, fees, and other charges that the number of courses completed and serviced by the school or college bears to the total number of courses in the program; and
12. Refunds based on enrollment in asynchronous distance education schools or colleges will be totally consummated within 60 days after the effective date of termination.
  - (a) A career school or college shall record a grade of "incomplete" for a student who withdraws during the portion of a

course or program for which the student is not eligible to collect a refund under Subsection (b)(4) if the student requests the grade at the time the student withdraws and the student withdraws for an appropriate reason unrelated to the student's academic status. A student who receives a grade of "incomplete" may re-enroll in the course or program during the 12-month period following the date the student withdraws and complete those incomplete subjects without payment of additional tuition for that portion of the course or program.

- (b) A program that is 40 hours or less of program time, or a seminar or workshop, is exempt from the 72-hour rule provided by Subsection (a). The career school or college shall maintain a policy for the refund of the unused portion of tuition, fees, and other charges in the event the student fails to enter the program or withdraws or is discontinued from the program at any time before completion of the program as provided by this section. The policy must provide that:
  - (1) Refunds are based on the period of enrollment computed on the basis of course or program time;
  - (2) The effective date of termination for refund purposes is the earlier of:
    - (i) The last date of attendance; or
    - (ii) The date the school or college receives written notice from the student that the student is withdrawing from the class; and
  - (3) The student will be refunded the pro rata portion of tuition, fees, and other charges that the number of hours remaining in the portion of the program for which the student has been charged after the effective date of termination bears to the total number of hours in the portion of the program for which the student has been charged.
13. If this Contract is sold, assigned, or transferred by the School of Automotive Machinists & Technology with or without recourse, the above refund policy will continue to apply.
14. **REFUND POLICY FOR STUDENTS CALLED TO ACTIVE MILITARY SERVICE**

A student of the School or college who withdraws from the School or college as a result of the student being called to active duty in a military service of the United States or the Texas National Guard may elect one of the following options for each program in which the student is enrolled:

  - (a) if tuition and fees are collected in advance of the withdrawal, a pro rata refund of any tuition, fees, or other charges paid by the student for the program and a cancellation of any unpaid tuition, fees, or other charges owed by the student for the portion of the program the student does not complete following withdrawal;
  - (b) a grade of incomplete with the designation "withdrawn-military" for the courses in the program, other than courses for which the student has previously received a grade on the

student's transcript, and the right to re-enroll in the program, or a substantially equivalent program if that program is no longer available, not later than the first anniversary of the date the student is discharged from active military duty without payment of additional tuition, fees, or other charges for the program other than any previously unpaid balance of the original tuition, fees, and charges for books for the program; or

- (c) the assignment of an appropriate final grade or credit for the courses in the program, but only if the instructor or instructors of the program determine that the student has:
  - (1) satisfactorily completed at least 90 percent of the required coursework for the program; and
  - (2) demonstrated sufficient mastery of the program material to receive credit for completing the program.

15. See Supplement B for Return of Title IV Funds Policy.

#### SEMINARS

##### Taking the Mystery Out of CAM Degreering and Valve Timing (non-credit)

Attendees will be introduced to CAM Pro Plus, a software and sensor package for measuring and analyzing motion profiles. Along with looking at lobe profiles, duration, lobe separation, centerlines and lift can be identified. The effects of varied CAM timing events and their relationship to engine performance will be thoroughly explored. See Supplement A for more details.

#### ADMISSION POLICIES/ DISABILITY SERVICES

The School of Automotive Machinists & Technology is an equal opportunity School and is dedicated to a policy of non-discrimination in employment and training. Prospective students will not be denied admission on the basis of race, color, national origin, sex, religion, handicap, age or veteran status (except where age, sex, or handicap constitute a bona fide occupational qualification necessary for proper and efficient administration).

#### ADMISSION/APPLICATION PROCEDURES

Persons seeking admission should apply in person, e-mail to [admissions@samtech.edu](mailto:admissions@samtech.edu), or by writing to the Admissions Department, The School of Automotive Machinists & Technology,



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1911 Antoine, Houston, TX 77055-1803. Prior to acceptance for enrollment, each prospective student must:

1. Submit a completed application form
2. Submit a registration fee of \$100
3. Satisfactorily complete all tests required
4. Tour School facilities

The student will receive a copy of the completed application forms. The tests will become the property of the School and will not be returned to the applicant. The School will notify the applicant of action taken on his/her admission request. If the student does not begin class, the registration fee will be refunded upon request.

### ADMISSION/ENROLLMENT REQUIREMENTS

The student must have a high school diploma or General Education Development test (GED), and must be at least 17 years of age, (under 18 requires parental consent). In addition, the School uses the Bennett Mechanical Comprehension Test with a passing score of 39, which is the mean score for a 12th grade student, as an entrance exam. A student that fails the test shall wait a minimum of 24 hours before the retake. In addition to these requirements, degree applicants must submit an essay explaining their career goals. See each program for any additional admission requirements.

### WAITLIST POLICY

Should enrollment capacity reach its maximum for a given program, the student may be waitlisted for up to 2 weeks from the program start date. Students on the waitlist must attend classes at the beginning of the program. If space becomes available, the waitlisted student will convert to an enrolled student. The School does not guarantee that waitlisted students will become enrolled. Waitlisted students that do not become enrolled will receive a 100% refund of any monies paid to the School.

### PREVIOUS EDUCATION/TRAINING CREDIT

Previous work experience and/or education must satisfactorily attest to the potential for course credit. A student provides information about previous education or experience through transcripts and employment records. Credit received through transfer or placement testing will decrease program tuition according to the number or course transfer or test approvals. Credit hours which are granted from transfer or placement testing do not count toward earned credit hours in computing the cumulative grade point average. There are no charges or fees for transferring credits or requesting placement testing credit for any course in a technical component. The minimum grade to transfer is a "C".

### GENERAL EDUCATION SECTION TRANSFER OF CREDIT

Students enrolled in the Associate of Applied Science in Automotive Engine/Block & Cylinder Head Machining degree program may transfer a maximum of 7 general education credits from another institution. To receive credit, the student must supply the School with the course outline and/or catalog description, learning objectives, and transcript of credits earned. A minimum grade of "C" must be achieved to transfer general education credits from another institution. If transferring more than 3 general education credits, the cumulative average of the units must be at least 3.0.

### TRANSFER OF CREDITS TO ANOTHER INSTITUTION

The School of Automotive Machinists & Technology will make its official transcript and copy of its applicable school catalog available to other institutions at a student's request. However, all students are reminded that acceptance of School of Automotive Machinists & Technology credits is at the complete discretion of the receiving institution. You should check with the receiving institution to determine if credits earned at the School of Automotive Machinists & Technology will transfer.

### RE-ADMISSION/APEAL

When a student has extraordinary circumstances, an appeal may be submitted in writing to the Director. These circumstances will be considered in making a determination on satisfactory progress. The student's written appeal must document the circumstances and reason(s) the appeal should be considered. The Director will consider each case on its own individual merit and a decision shall be placed in the student's file. These standards of satisfactory progress are designed to give all students a reasonable opportunity to progress and obtain their educational objectives.

In order for a student to be considered to be making satisfactory progress, he/she must meet the attendance policy below.

### TARDINESS

A student not present at the time of checking roll will be counted an hour absent. All missed work must be made up.

### ATTENDANCE

Roll is checked each class period, and attendance is recorded by the instructor. Attendance is entered daily onto the master attendance record of each student.

Arriving to a class late or leaving early will result in an hour's absence recorded for that class period. School holidays or leaves are not considered as days of absence. Under NO circumstances is an absence considered excused. Termination from training, for reasons of unsatisfactory attendance will occur if:

1. A student is absent in excess of more than 10 consecutive School days.
2. A student cannot miss more than 20% of the total course time hours in a program.
3. A student is absent in excess of any number of days if the student fails to return as scheduled from an approved leave of absence.

A student's overall record of attendance will be evaluated in determining his/her progress during training. If the attendance of the student is interfering with academic progress, a conference with the Director may be required

to evaluate the continuance of the student in the program. A student that has been terminated for excessive absences will not be allowed to enter for a third time. The student whose enrollment is terminated for violation of the attendance policy may not re-enter before the start of the next grading period (see student evaluation). This does not circumvent the approved refund policy (see Appeal/Re-admission). The following symbols are used:

- |             |                       |
|-------------|-----------------------|
| A = ABSENT  | G = GRADUATED         |
| P = PRESENT | B = SCHEDULED BREAKS  |
| T = TARDY   | X = TERMINATED        |
| C = CANCEL  | S = SPECIAL (make-up) |
| H = HOLIDAY | F = FIELD TRIP        |
| D = DROP    | L = LEAVE OF ABSENCE  |

### SUSPENSION

A student may be suspended due to violation of Causes of Termination, Attendance, or for other performance or behavior problems. Such suspensions will be for a specified period after which a student may apply for re-enrollment (see Appeal/Re-admission).

### LEAVE OF ABSENCE

Only two (2) leaves of absence (including military leave) will be permitted during any twelve month period. Leave of absence (including military leave) shall be reasonable in duration and shall not exceed (60) calendar days and shall be for specific and acceptable purposes. In certain circumstances, the Board may grant up to (180) calendar days within any 12-month period. Only the Director can grant a leave of absence. A written request for leave is required. Failure to return from leave on or before the appointed time will result in immediate termination from the program.

### CONDUCT POLICY

Enrollment at the School of Automotive Machinists & Technology should be personally satisfying as well as enjoyable and technically rewarding. It is equally important that each student respect the individual rights of associates within the School. Any student who is dismissed for reasons of serious misconduct has a right to ask for an administrative hearing but is advised that re-entry is difficult.

### CAUSES OF TERMINATION

A list of serious offenses within the School includes:

1. Dishonesty or cheating.
2. Using drugs or alcohol within the building, possessing them, or distributing them as prohibited by law.
3. Stealing the belongings of other persons or the property of the School.
4. Physically abusing any person on School property or at School-sponsored activities.
5. Physically abusing School property.
6. Obstructing or disrupting teaching.
7. Abusive, vulgar, or profane language.
8. Displaying or using articles of violence on School property.

The School reserves the right to suspend and/or dismiss a student for the reasons listed above, but does not limit itself to those listed.

## 5 SCHOOL POLICIES



Machinists Math and Measurement course

### GRIEVANCES AND COMPLAINTS

Schools accredited by the Accrediting Commission of Career Schools and Colleges must have a procedure and operational plan for handling student complaints. If a student does not feel that the school has adequately addressed a complaint or concern, the student may consider contacting the Accrediting Commission. All complaints reviewed by the Commission must be in written form and should grant permission for the Commission to forward a copy of the complaint to the school for a response. This can be accomplished by filing the ACCSC Complaint Form. The complainant(s) will be kept informed as to the status of the complaint as well as the final resolution by the Commission. Please direct all inquiries to:

Accrediting Commission of  
Career Schools & Colleges  
2101 Wilson Boulevard, Suite 302  
Arlington, VA 22201  
(703) 247-4212  
www.accsc.org

and/or

Texas Workforce Commission  
Career Schools and Colleges, Room 226T  
101 E. 15th Street  
Austin, Texas 78778-0001  
512-936-3100  
texasworkforce.org/careerschools

A copy of the ACCSC Complaint Form is available at the school and may be obtained by contacting Linda Massingill, Executive Director, or online at [www.accsc.org](http://www.accsc.org).

Degree students with an unresolved complaint may contact:

Texas Higher Education Coordinating Board  
College Readiness and Success Division  
P.O. Box 12788  
Austin, TX 78711-2788  
512-427-6101  
[www.thecb.state.tx.us/studentcomplaints](http://www.thecb.state.tx.us/studentcomplaints)

The web address for the rules governing student complaints-Title 19 of the Texas Administrative Code, Sections 1.110-1.112:

[http://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac\\_view=5&ti=19&pt=1&ch=1&ch=E&rl=Y](http://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=5&ti=19&pt=1&ch=1&ch=E&rl=Y)

### COMPARABLE PROGRAM INFORMATION

As required, comparable information to the School of Automotive Machinists & Technology programs, if any, with regards to tuition and program length, are available from:

Accrediting Commission of  
Career Schools and Colleges (ACCSC)  
2101 Wilson Blvd., Suite 302  
Arlington, Virginia 22201  
(703) 247-4212

### ACADEMIC STRUCTURE AND GRADING

The program objectives are to prepare students

for entry-level employment in their chosen career. For this reason, grading is administered to determine the student's progress in terms related to employee proficiency expected by business and industry. Grading is based on nine key performance factors including knowledge of theory, lab proficiency, appearance, courtesy, dependability, cooperation, initiative, attendance and safety.

### PERFORMANCE FACTOR GRADING SYSTEM

E = Excellent      F = Fair  
G = Good          P = Poor

### SUBJECT GRADING SYSTEM LAB/ THEORY

Numeric Grade	Grade Points
90-100 (Excellent)	4.0 (A)
80-89 (Good)	3.0 (B)
70-79 (Fair)	2.0 (C)
60-69 (Poor)	1.0 (D)
0-59 (Failure)	0.0 (F)
I (Incomplete)	Not computed in grade point average
W (Withdrawal)	Not computed in grade point average
CR (Course Repetition)	Is computed in grade point average

### SIZE OF CLASS

Class size is limited to provide adequate personal instruction in both classroom and lab, and to allow access to special tools and equipment. With this objective in mind, the maximum student to instructor ratio is thirty to one (30-1) for theory and twenty to one (20-1) for lab.

### GRADUATION

A candidate for graduation must have completed the program, show a cumulative grade point average (GPA) of at least 2.0 (Grade of "C") on all work attempted, and must have cleared his/her account with the School. Upon successful completion of the requirements for graduation, SAM Tech will award a Certificate of Completion. Degree students will receive an Associate of Applied Science degree.

### AWARDS

Awards are presented at graduation to those students maintaining a perfect attendance record and to those students maintaining an overall 99% excellence in attendance record.

### MAKE-UP WORK

A student who has missed assignments due to absences will be allowed to make up these assignments. Make-up work shall not be authorized for the purpose of removing an absence.

1. No more than 5% of the total course time hours for a program may be made up.
2. The school shall submit make-up work policies to the Commission for approval.
3. Make-up work shall:
  - (a) be supervised by an instructor approved for the class being made up;
  - (b) require the student to demonstrate substantially the same level of knowledge or competence expected of a student who attended the scheduled class session;
  - (c) be completed within two weeks of the end of the grading period during which the absence occurred;
  - (d) be documented by the school as being completed.

The school may close due to inclement weather or emergencies (e.g. flooding, icy roads, power failures, etc.) SAM Tech follows HISD guidelines for such conditions. These announcements are made on radio and television stations and posted online. School Director will determine make-up dates in such instances.

### SATISFACTORY ACADEMIC PROGRESS

SAM Tech's Satisfactory Academic Progress (SAP) policy is based on federal regulation and applies to all enrolled students. The policy includes metric components, applicable definitions, and details regarding appeal.

1. A student is in good standing if a cumulative Grade Point Average (GPA) of 2.0 (70%) or better is maintained, attendance is in accordance with School policy, and at least 66.67% of the attempted credit hours are completed (Pace Of Progression [POP]). Progress is documented by Progress Reports. See Student Evaluation for the details regarding Progress Reports.
2. A student who does not meet one or more of the three (3) metrics listed above will be placed on academic/financial aid warning for the next payment period. Students on academic/financial aid warning will continue to receive Title IV funds for the duration of the period. To maintain eligibility after one payment period and return to good standing, a student must satisfy the minimum standards all three SAP components by the end of the academic/financial aid warning period.
3. If a student fails to achieve the SAP requirements by the end of the warning period, they are placed on academic/financial aid probation and will lose eligibility for Title IV funds, but can appeal and re-establish program eligibility and continue matriculation.
4. A student that successfully appeals will re-establish Title IV eligibility and will be placed on academic/financial aid probation for the subsequent payment period. A student who is placed on academic/financial aid probation, for any reason, shall have 4 weeks (day students) or 8 weeks (night students) in which to rectify deficiencies and return to good standing.
5. When a student is placed on academic/financial aid probation, that student will be advised prior to returning to class, of the beginning date and the action taken. The terms of the probation shall be clearly



Race engine dyno testing



indicated on the appropriate permanent records.

6. A student placed on academic/financial aid probation may attend supplementary tutoring during probation, if necessary (see Individualized Assistance).
7. A student who fails to achieve overall SAP at the end of the probation period will be terminated. A student may appeal the School's termination in writing. See Re-Admission/Appeal on page 4.
8. A student whose enrollment was terminated for unsatisfactory progress may re-enroll after a minimum of one grading period. This does not circumvent the approved refund policy.
9. A student who returns after the enrollment was terminated for not maintaining SAP shall be placed on probation for the next grading period. The student shall be advised of this action and the student's file will be accordingly documented. If the student does not maintain SAP at the end of this probationary period, the student shall be terminated.
10. A student must complete the program within 1.5 times the length of the program to meet minimum requirements specified by the Maximum Time Frame (MTF).

### ACADEMIC/FINANCIAL AID PROBATION APPEALS

To appeal academic/financial aid probation, a student must prepare a written statement explaining

- the factors that prevented the student from meeting SAP accompanied by supportive documentation.
- what has changed that will allow the student to maintain SAP.
- how the student will maintain SAP.

Appeals to establish academic/financial aid probation must be submitted within one week of the student being notified of failure to meet the terms of the academic/financial aid warning.

### COURSE INCOMPLETION

A student who is obligated for full tuition may request a grade of "incomplete." This occurs if the student has failed to meet a course requirement due to illness or other reason beyond his/her control as excused by the course instructor. The student must be in good standing at the time that an incomplete grade is awarded. An incomplete grade of "I" is awarded to the student at the end of the academic term.



Students working in shop lab

The student is allowed a maximum of three weeks into the next term to rectify a grade of incomplete. If the incomplete is not rectified within that period, the incomplete is automatically converted to an "F."

If the student earns an "F" he/she is placed on academic probation.

A grade of "I" indicates that required coursework was not completed during the course length. This grade does not count as credit hours attempted and is not included in the GPA calculation.

Once the final grade has been awarded, the course is counted as credit hours attempted and calculated into the GPA and is applied to SAP.

### WITHDRAWALS

If a student wishes to withdraw from a class before completion of a subject and/or before finals are given, he or she must complete a Change of Status form with the Registrar or Financial Aid. A withdrawal grade of "W" will be awarded at the time of withdrawal to a student with a passing grade. A student with failing grades at the time of withdrawal will be given an "F." It must be understood that a withdrawal may alter the student's date of graduation and eligibility for financial aid. The student must see his/her financial aid officer to discuss the impact of withdrawals on their financial aid. Tuition charges will be calculated through the last date of attendance. The date of withdrawal will be the effective date of termination.

### COURSE REPETITIONS

SAM Tech students may repeat a course only one time. No more than three courses may be repeated throughout the academic program.

When a student re-takes a course, the former grade remains on the student's transcript and is used in assessing the student's academic progress (SAP). However, after the student retakes a course, only the latter grade is used in the calculation of the GPA.

The student must see his/her financial aid officer to discuss the impact of repeated courses on their financial aid.

### INDIVIDUALIZED ASSISTANCE

School instructors are available to assist students who feel additional attention is needed in maintaining their academic standing. SAM Tech encourages all students to use this time to their full advantage. The student needing arrangements should contact the Director of Education and/or Executive Director.

### STUDENT EVALUATION

The student's progress reports are issued at the following grading periods: 4 weeks, 12 weeks, 18 weeks, 22 weeks, 30 weeks and/or 25%, of 50%, 75% program completion.

Students enrolled in general education courses receive a progress report at each course completion and at 50% of program completion.

These reports evaluate attendance, academic performance, appearance, courtesy, dependability, cooperation, initiative and safety.



CNC machine initial set up



Cylinder head assembly area



Cam degreasing

# 7 AUTOMOTIVE ENGINE/BLOCK MACHINING

## PROGRAM OBJECTIVES

The program objective of Automotive Engine/Block Machining is to qualify the student as an automotive machinist. Although the actual machining process will be the emphasis of the program, a thorough education on theory of operation of the modern automotive engine will be presented. Performance modifications effect on power, longevity, and emissions, will be highlighted throughout the different courses. This program is intended for the mechanically inclined student with a desire to work in the automotive industry. The program will include both classroom and hands-on lab instruction. The School of Automotive Machinists & Technology measures student progress in semester credit hours. One semester credit hour for each fifteen (15) hours of classroom contact plus appropriate outside preparation or the equivalent; or one semester credit hour for each thirty (30) hours of laboratory work plus appropriate outside preparation. This program has an outside work requirement for completion. Please see the course descriptions for additional information. Single subjects making up this program are not offered individually. The students will learn performance machining operation skills on industry standard machines, a boring bar, Sunnen cylinder hones, align hone and rod resizer, as well as a SuperFlow dynamometer and DynoJet chassis dynamometer. See Equipment List Addendum for a complete list of machines used in the Block Machining Program.



Engine block honing

COURSE	TITLE	THEORY	LAB	SEM HRS	TEXAS WORKFORCE COMMISSION		TOTAL CLOCK HRS	DEPARTMENT OF EDUCATION	
					ACCSC	LAB		Title IV Funding Using Accrediting Agency Hours	SEMESTER HRS
101	Engine Block Work Practices, Tools, and Safety	2.0	0.0	2.0	30	0.0	30	2.0	
102	Engine Block Machinist Math and Measurement	3.0	0.5	3.5	45	15.0	60	3.5	
103*	Principles and Theories of Engine Block	2.0	0.0	2.0	30	5.0	35	2.0	
104*	Design and Function of Engine Block Components	2.0	0.0	2.0	30	0.0	30	2.0	
105*	Engine Block Disassembly and Inspection	3.0	0.5	3.5	45	15.0	60	3.5	
106*	Operation of Engine Block Machining Equipment	3.0	0.5	3.5	45	15.0	60	3.5	
107*	Engine Block and Component Machining	7.0	6.0	13.0	105	180.0	285	13.0	
108*	Engine Block Blueprinting	2.0	0.5	2.5	30	15.0	45	2.5	
109*	Engine Block Assembly and Dynamometer Testing	4.0	1.5	5.5	60	45.0	105	5.5	
110*	Engine Block Career Planning	1.0	0.0	1.0	15	0.0	15	1.0	The U.S. Department of Education does not round
<b>Totals</b>		<b>29.0</b>	<b>9.5</b>	<b>38.5</b>	<b>435</b>	<b>290.0</b>	<b>725**</b>	<b>38.5 = 38</b>	

\* Requires 101 and 102 as prerequisites

\*\* Outside work is not included

The approximate time to complete this program is thirty-six (36) weeks (day) and forty-five (45) weeks night. The total program weeks do not include school breaks.

## COURSE DESCRIPTIONS/SYNOPSIS

### 101 ENGINE BLOCK ENGINE WORK PRACTICES, TOOLS, AND SAFETY (30/0/2.0)

The student will gain a general introduction to the industry work environment including customer relations, work orders, build sheets, and block parts acquisition. The student will be introduced to the use of precision measurement and the required specialized, as well as basic hand tools. Special emphasis is placed on personal and shop safety due to the nature of potentially hazardous equipment. Outside-the-classroom work is required. This course includes an average of 7.5 hours of outside the classroom work.

### 102 ENGINE BLOCK MACHINIST MATH AND MEASUREMENT (45/15/3.5)

The student will learn procedures of careful inspection and precise measurement technologies, combined with the proper applications, formulas, and machinist math, to provide a solid basis for successful production and high performance engine assembly procedures. Outside-the-classroom work is required. This course includes an average of 15 hours of outside the classroom work.

### 103 PRINCIPLES AND THEORIES OF ENGINE BLOCK (30/5/2.0)

The student will explore the basic theory and concepts of internal combustion engine operation, and then move into more specific and complex areas including torque, airflow, volumetric efficiency, operating cycles, and horsepower. Outside-the-classroom work is required. This course includes an average of 8.75 hours of outside the classroom work.

### 104 DESIGN AND FUNCTION OF ENGINE BLOCK COMPONENTS (30/0/2.0)

The student will learn the individual components, their function, design, material composition, and differences. This includes the relationship of the individual pieces to each other and assembly as a whole. Production and performance variations will also be discussed. Outside-the-classroom work is required. This course includes an average of 7.5 hours of outside the classroom work.

### 105 ENGINE BLOCK DISASSEMBLY AND INSPECTION (45/15/3.5)

The student learns the techniques of thorough examination and evaluation during disassembly to correctly diagnose engine failure, potential problems, and component replacement. Cleaning methods for both cast iron and aluminum are covered, including the impact of current environmental concerns. Additionally, crack detection methods and casting repairs are also covered. Outside-the-classroom work is required. This course includes an average of 15 hours of outside the classroom work.

### 106 OPERATION OF ENGINE BLOCK MACHINING EQUIPMENT (45/15/3.5)

The student learns the set-up and operation procedures of the machining equipment. He will also learn the procedures used to complete the machining of block and component parts. The differences between standard and high performance applications will be highlighted. Outside-the-classroom work is required. This course includes an average of 15 hours of outside the classroom work.

### 107 ENGINE BLOCK AND COMPONENT MACHINING (105/180/13.0)

Actual hands-on block and component machining will be accomplished by each student as they become proficient with all machining operations. Machined components will be carefully checked for accuracy. These pieces will become part of each student's course project. Outside-the-classroom work is required. This course includes an average of 71.25 hours of outside the classroom work.

### 108 ENGINE BLOCK BLUEPRINTING (30/15/2.5)

The student will learn blueprinting. The art of producing maximum capable horsepower, torque, volumetric efficiency, and R.P.M. through precise component assembly relationships will be taught. The effects of camshaft selection, degreasing, and valve timing in relation to cylinder pressure, will be studied. The student will learn the real mystery of high performance. Outside-the-classroom work is required. This course includes an average of 11.25 hours of outside the classroom work.

### 109 ENGINE BLOCK ASSEMBLY AND DYNAMOMETER TESTING (60/45/5.5)

The primary focus of this course is mastering the art of assembling precisely machined components into a complete, operating engine block. Upon completion, the student will run his engine project on a Superflow Dynamometer for evaluation. Changes and adjustments will be made to demonstrate their effects on power output. Outside-the-classroom work is required. This course includes an average of 26.25 hours of outside the classroom work.

### 110 ENGINE BLOCK CAREER PLANNING (15/0/1.0)

The student is prepared to enter the work force by learning the importance of personal appearance, conduct, attitude and mechanical aptitude. Job search techniques, the application process, effective resume composition, and interviewing skills are covered. Career goal setting, steps toward self-employment, and job placement assistance is covered. Outside-the-classroom work is required. This course includes an average of 3.75 hours of outside the classroom work.



## PROGRAM OBJECTIVES

The objective of Automotive Engine/Cylinder Head Machining is to qualify the student as an automotive cylinder head machinist. The theory of operation and the cylinder head role in the engine operation will be thoroughly covered. Airflow characteristics and their effect on performance and longevity will be highlighted in all courses of this program. This program is intended for the mechanically inclined student with a desire to work in the automotive industry. The program will include both classroom and hands-on lab instruction. The School of Automotive Machinists & Technology measures student progress in semester credit hours. One semester credit hour for each fifteen (15) hours of classroom contact plus appropriate outside preparation or the equivalent; or one semester credit hour for each thirty (30) hours of laboratory work plus appropriate outside preparation. This program has an outside work requirement for completion. Please see the course descriptions for additional information. Single subjects making up this program are not offered individually. The students will learn performance machining operation skills on industry standard machines, Sunnen surfacer, seat and guide machine, valve guide workstation, and SuperFlow flow bench. See Equipment List Addendum for a complete list of machines used in the Cylinder Head Machining Program.



Cylinder head seat and guide machine

COURSE	TITLE	THEORY	LAB	SEM HRS	ACCSC		TOTAL CLOCK HRS	TEXAS WORKFORCE COMMISSION
					THEORY	LAB		DEPARTMENT OF EDUCATION Title IV Funding Using Accrediting Agency Hours SEMESTER HRS
201	Cylinder Head Work Practices, Tools, and Safety	2.0	0.0	2.0	30	0.0	30	2.0
202	Cylinder Head Machinist Math and Measurement	3.0	0.5	3.5	45	15.0	60	3.5
203*	Principles and Theories of Engine Cylinder Head	2.0	0.0	2.0	30	5.0	35	2.0
204*	Design and Function of Cylinder Head Components	2.0	0.0	2.0	30	0.0	30	2.0
205*	Cylinder Head Disassembly and Inspection	3.0	0.5	3.5	45	15.0	60	3.5
206*	Operation of Cylinder Head Machining Equipment	3.0	0.5	3.5	45	15.0	60	3.5
207*	Cylinder Head and Component Machining	6.0	3.5	9.5	90	105.0	195	9.5
208*	Cylinder Head Blueprinting	2.0	0.5	2.5	30	15.0	45	2.5
209*	Cylinder Head Assembly	2.0	2.0	4.0	30	60.0	90	4.0
210*	Cylinder Head Porting	2.0	2.5	4.5	30	75.0	105	4.5
211*	Cylinder Head Career Planning	1.0	0.0	1.0	15	0.0	15	1.0
<b>Totals</b>		<b>28.0</b>	<b>10.0</b>	<b>38.0</b>	<b>420</b>	<b>305.0</b>	<b>725 **</b>	<b>38.0 = 38</b>

The U.S. Department of Education does not round

\* Requires 201 and 202 as prerequisites

\*\* Outside work is not included

The approximate time to complete this program is thirty-six (36) weeks (day) and forty-five (45) weeks (night). The total program weeks do not include school breaks.

## COURSE DESCRIPTIONS/SYNOPSIS

### 201 CYLINDER HEAD WORK PRACTICES, TOOLS, AND SAFETY (30/0/2.0)

The student will gain a general introduction to the industry work environment including customer relations, work orders, build sheets, and cylinder head parts acquisition. The student will be introduced to the use of precision measurement and the required specialized, as well as basic hand tools. Special emphasis is placed on personal and shop safety due to the nature of potentially hazardous equipment. Outside-the-classroom work is required. This course includes an average of 7.5 hours of outside the classroom work.

### 202 CYLINDER HEAD MACHINIST MATH AND MEASUREMENT (45/15/3.5)

The student will learn procedures of careful inspection and precise measurement technologies, combined with the proper applications, formulas, and machinist math to provide a solid basis for successful production and high performance cylinder head assembly procedures. Outside-the-classroom work is required. This course includes an average of 15 hours of outside the classroom work.

### 203 PRINCIPLES AND THEORIES OF ENGINE CYLINDER HEAD (30/5/2.0)

The student will learn the basic theory and concepts of internal combustion engine operation. The course then moves into more specific and complex areas including torque, airflow, volumetric efficiency, operating cycles, and horsepower. Outside-the-classroom work is required. This course includes an average of 8.75 hours of outside the classroom work.

### 204 DESIGN AND FUNCTION OF CYLINDER HEAD COMPONENTS (30/0/2.0)

The student will learn the how and why of the many components of cylinder head assembly and their relationship to each other. The function and various material compositions of cylinder head castings and components will also be covered. Standard and high performance differences will be discussed. Outside-the-classroom work is required. This course includes an average of 7.5 hours of outside the classroom work.

### 205 CYLINDER HEAD DISASSEMBLY AND INSPECTION (45/15/3.5)

The student will learn the proper procedure of head disassembly and careful inspection to determine any causes of failure, repair needs, and component replacement. Cleaning methods, crack detection, repair, and associated environmental issues, for both aluminum and iron heads, will also be discussed. Outside-the-classroom work is required. This course includes an average of 15 hours of outside the classroom work.

### 206 OPERATION OF CYLINDER HEAD MACHINING EQUIPMENT (45/15/3.5)

The student learns the set-up and operation procedures of machining equipment. The student will also learn the procedures used to complete the machining of cylinder heads and component

parts. A discussion of high performance and production differences will complete this section. Outside-the-classroom work is required. This course includes an average of 15 hours of outside the classroom work.

### 207 CYLINDER HEAD AND COMPONENT MACHINING (90/105/9.5)

Actual hands-on cylinder head and component machining will be accomplished by each student as they become proficient with all machining operations. Machined components will be checked closely for accuracy. These pieces will become part of each student's course project. Outside-the-classroom work is required. This course includes an average of 48.75 hours of outside the classroom work.

### 208 CYLINDER HEAD BLUEPRINTING (30/15/12.5)

The student is exposed to the art of creating maximum efficiency and horsepower through precision component assembly relationships. Combustion chamber sizing and compression ratios will be discussed. The student will also study cylinder head performance secrets. Outside-the-classroom work is required. This course includes an average of 11.25 hours of outside the classroom work.

### 209 CYLINDER HEAD ASSEMBLY (30/60/4.0)

The student will learn how to assemble the precisely machined components into a complete cylinder head. This is covered in detail. Evaluation and testing of complete assemblies will reveal the relationship of changes to performance. Outside-the-classroom work is required. This course includes an average of 22.5 hours of outside the classroom work.

### 210 CYLINDER HEAD PORTING (30/75/4.5)

The student will explore flow characteristics of various head designs and the resultant effects of change. Proper porting technique, when it should be used, and how it should be used, is covered. The actual hands-on experience will illustrate methods and levels of airflow improvement. Outside-the-classroom work is required. This course includes an average of 26.25 hours of outside the classroom work.

### 211 CYLINDER HEAD CAREER PLANNING (15/0/1.0)

The student is prepared to enter the work force by learning the importance of personal appearance, conduct, attitude, and mechanical aptitude. Job search techniques, the application process, effective resume composition, and interviewing skills are covered. Career goal setting, steps toward self-employment, and job placement assistance is covered. Outside-the-classroom work is required. This course includes an average of 3.75 hours of outside the classroom work.

# 9 AUTOMOTIVE ENGINE/CNC MACHINING

## PROGRAM OBJECTIVES:

The program objective for the Automotive Engine/CNC Machining course is to qualify the student as a CNC automotive machinist, to be capable of understanding and performing machining operations utilizing Computer Numerically Controlled Machining Centers. This program is intended for the mechanically inclined student with a desire to work in the automotive industry. The program will include both classroom and hands-on lab instruction. The School of Automotive Machinists & Technology measures student progress in semester credit hours. One semester credit hour for each fifteen (15) hours of classroom contact plus appropriate outside preparation or the equivalent; or one semester credit hour for each thirty (30) hours of laboratory work plus appropriate outside preparation. This program has an outside work requirement for completion. Please see the course descriptions for additional information. The primary emphasis of this program will be the application of CNC machining techniques to improve performance of cylinder heads and engine blocks. The student will thoroughly learn and explore the utilization of 5-Axis CNC Machining Centers as well as Coordinate Measuring Machine digitizing hardware and software applications and interfacing. Machine set-up, operation, and work piece preparation will be covered in detail. Special emphasis will be given to modification of high-performance and racing cylinder heads. The student will analyze and evaluate completed projects to quantify improvements, using racing industry standard equipment and techniques. Graduates will benefit from improved opportunities for employment in all forms of the motorsports industry. Single subjects making up this program are not offered individually. See Equipment List Addendum for a complete list of machines used in the CNC Machining Program.

## CNC ADMISSIONS REQUIREMENTS:

Program applicants are required to:

1. Present proof of secondary education (high School diploma or GED certificate) and at least 18 years of age.
2. Be computer literate and familiar with Microsoft® Windows XP or later.
3. Achieve a passing score on the SAM Tech Math Proficiency Test (a passing score of 75%), as a CNC Program entrance exam.
4. Achieve a passing score on the Bennett Mechanical Comprehension Test (a passing score of 39 which is the mean score of 12th grade students), as an entrance exam.



CNC machine programming

COURSE	TITLE	TEXAS WORKFORCE COMMISSION						TOTAL CLOCK HRS	DEPARTMENT OF EDUCATION
		THEORY	LAB	SEM HRS	THEORY	LAB	ACCSC		(Used for Title IV Funding) SEMESTER HRS
301	Work Practices, Tools, and Safety	2.0	0.0	2.0	30	0.0	30	1.0	
302	Introduction and Basic Machine Overview	2.0	1.0	3.0	30	30.0	60	2.0	
303*	Introduction to CAM Software	6.0	1.0	7.0	90	30.0	120	4.0	
304*	Digitizing Techniques and Applications	4.0	1.0	5.0	60	31.0	91	3.0	
305*	Machine, Fixtures, and Component Preparation	1.0	2.0	3.0	15	60.0	75	2.5	
306*	Machining Operations - Engine Block	1.0	2.0	3.0	15	60.0	75	2.5	
307*	Machining Operations – Cylinder Head	1.0	2.0	3.0	15	60.0	75	2.5	
308*	Inspection and Analysis of Machined Parts	1.0	1.0	2.0	15	30.0	45	1.5	
<b>Totals</b>		<b>18.0</b>	<b>10.0</b>	<b>28.0</b>	<b>270</b>	<b>301.0</b>	<b>571 **</b>	<b>19.0</b>	

\* Requires 301 and 302 as prerequisites

\*\* Outside work is not included

The approximate time to complete this program is thirty (30) weeks (day) and thirty-five (35) weeks (night). The total program weeks do not include school breaks.

## COURSE DESCRIPTIONS/SYNOPSIS

### CNC 301 WORK PRACTICES, TOOLS & SAFETY (30/0/2)

This course provides a general introduction to the industry working environment including customer relations, work orders, build sheets, and parts acquisition. Familiarization with the use of basic hand tools, specialized tools, and precision measurement tools will be covered. Special emphasis is placed on both personal and shop safety due to the nature of potentially hazardous equipment. Outside-the-classroom work is required. This course includes an average of 7.5 hours of outside the classroom work.

### CNC 302 INTRODUCTION AND BASIC MACHINE OVERVIEW (30/3/3)

The student will learn the general operation and maintenance of CNC equipment. Familiarization with the capabilities of this equipment and applications in the racing industry will be covered. Outside-the-classroom work is required. This course includes an average of 15 hours of outside the classroom work.

### CNC 303 INTRODUCTION TO CAM SOFTWARE (90/30/7)

The student will learn the CNC machining equipment operation using Computer Aided Manufacturing software to generate CNC control program code. The student will explore the interaction between CAM software, CNC controller, and digitizing equipment. Outside-the-classroom work is required. This course includes an average of 30 hours of outside the classroom work.

### CNC 304 DIGITIZING TECHNIQUES AND APPLICATIONS (60/31/5)

Once optimum component designs have been achieved through conventional modification techniques, the part will be "digitized" using a Coordinate Measurement Machine. The student will learn component improvements using CAM software. Component will be evaluated and analyzed prior to additional machining operations. Outside-the-classroom work is required. This course includes an average of 22.75 hours of outside the classroom work.

### CNC 305 MACHINE, FIXTURES, AND COMPONENT PREPARATION (15/60/3)

The student will learn the set-up of the machine for specific components and operations. Special purpose fixture fabrication and utilization will be learned. Proper fixture installation and work piece preparation to ensure accuracy and repeatability of machining operations will be thoroughly discussed and applied. Outside-the-classroom work is required. This course includes an average of 18.75 hours of outside the classroom work.

### CNC 306 MACHINING OPERATIONS - ENGINE BLOCK (15/60/3)

Actual machining operations are the primary focus of this course. The student will learn to be proficient through hands-on machining procedures of engine blocks and components. Finished work will be thoroughly inspected for accuracy and quality. Outside-the-classroom work is required. This course includes an average of 18.75 hours of outside the classroom work.

### CNC 307 MACHINING OPERATIONS - CYLINDER HEAD (15/60/3)

The student will perform actual machining operations on cylinder heads and components. The focus will be to ensure that each student is proficient in these procedures through inspection of finished work to verify accuracy and quality. Outside-the-classroom work is required. This course includes an average of 18.75 hours of outside the classroom work.

### CNC 308 INSPECTION & ANALYSIS OF MACHINED PARTS (15/30/2)

The student will learn to evaluate and compare completed components against established standards. Special emphasis will be placed on effectiveness of head modifications, using flow testing, and other measurements. The possibility of further performance improvements will be analyzed. Outside-the-classroom work is required. This course includes an average of 11.25 hours of outside the classroom work.



# AUTOMOTIVE ENGINE/BLOCK & 10 CYLINDER HEAD MACHINING

## PROGRAM OBJECTIVES

The program objective of Automotive Engine/Block and Cylinder Head Machining is to qualify the student as an automotive block and cylinder head machinist. Although the actual machining processes will be the major emphasis of the program, a thorough education on the theory of operation of the modern automotive engine will be presented along with the role of the cylinder head to the complete assembly. Performance modifications effects on power, longevity, and airflow characteristics will be highlighted in all courses of this program. The program is intended for the mechanically inclined student with a desire to work in the high performance/racing industry. The program will include both classroom and hands-on lab instruction. The School of Automotive Machinists & Technology measures student progress in semester credit hours. One semester credit hour for each fifteen (15) hours of classroom contact plus appropriate outside preparation or the equivalent; or one semester credit hour for each thirty (30) hours of laboratory work plus appropriate outside preparation. This program has an outside work requirement for completion. Please see the course descriptions for additional information. Single subjects making up this program are not offered individually. The students will learn performance machining operation skills on industry standard machines, a boring bar, Sunnen cylinder hones, align hone and rod resizer, as well as a SuperFlow dynamometer, DynoJet chassis dynamometer, Sunnen surfacer, seat and guide machine, valve guide workstation, and SuperFlow flow bench. See Equipment List Addendum for a complete list of machines used in the Block Machining and Cylinder Head Machining Program.



Students adjusting throttle linkage

COURSE	TITLE	THEORY	LAB	SEM HRS	TEXAS WORKFORCE COMMISSION		TOTAL CLOCK HRS	DEPARTMENT OF EDUCATION	
					ACCSC	LAB		Title IV Funding Using Accrediting Agency Hours	SEMESTER HRS
101	Engine Block Work Practices, Tools, and Safety	2.0	0.0	2.0	30	0.0	30	2.0	
102	Engine Block Machinist Math and Measurement	3.0	0.5	3.5	45	15.0	60	3.5	
103*	Principles and Theories of Engine Block	2.0	0.0	2.0	30	5.0	35	2.0	
104*	Design and Function of Engine Block Components	2.0	0.0	2.0	30	0.0	30	2.0	
105*	Engine Block Disassembly and Inspection	3.0	0.5	3.5	45	15.0	60	3.5	
106*	Operation of Engine Block Machining Equipment	3.0	0.5	3.5	45	15.0	60	3.5	
107*	Engine Block and Component Machining	7.0	6.0	13.0	105	180.0	285	13.0	
108*	Engine Block Blueprinting	2.0	0.5	2.5	30	15.0	45	2.5	
109*	Engine Block Assembly and Dynamometer Testing	4.0	1.5	5.5	60	45.0	105	5.5	
201	Cylinder Head Work Practices, Tools, and Safety	2.0	0.0	2.0	30	0.0	30	2.0	
202	Cylinder Head Machinist Math and Measurement	3.0	0.5	3.5	45	15.0	60	3.5	
203*	Principles and Theories of Engine Cylinder Head	2.0	0.0	2.0	30	5.0	35	2.0	
204*	Design and Function of Cylinder Head Components	2.0	0.0	2.0	30	0.0	30	2.0	
205*	Cylinder Head Disassembly and Inspection	3.0	0.5	3.5	45	15.0	60	3.5	
206*	Operation of Cylinder Head Machining Equipment	3.0	0.5	3.5	45	15.0	60	3.5	
207*	Cylinder Head and Component Machining	6.0	3.5	9.5	90	105.0	195	9.5	
208*	Cylinder Head Blueprinting	2.0	0.5	2.5	30	15.0	45	2.5	
209*	Cylinder Head Assembly	2.0	2.0	4.0	30	60.0	90	4.0	The U.S. Department of Education does not round
210*	Cylinder Head Porting	2.0	2.5	4.5	30	75.0	105	4.5	
212*	Career Development Planning	2.0	0.0	2.0	30	0.0	30	2.0	
<b>Totals</b>		<b>57.0</b>	<b>19.5</b>	<b>76.5</b>	<b>855</b>	<b>595.0</b>	<b>1450 **</b>	<b>76.5 = 76</b>	

\*Requires 101, 102, 201, and 202 as prerequisites

\*\* Outside work is not included

The approximate time to complete this program is seventy-two (72) weeks (day) and ninety (90) weeks (night). The total program weeks do not include school breaks.

## COURSE DESCRIPTIONS/SYNOPSIS

### 101 ENGINE BLOCK WORK PRACTICES, TOOLS, AND SAFETY (30/0/2.0)

The student will gain a general introduction to the industry work environment including customer relations, work orders, build sheets, and block parts acquisition. The student will be introduced to the use of precision measurement and the required specialized, as well as basic hand tools. Special emphasis is placed on personal and shop safety due to the nature of potentially hazardous equipment. Outside-the-classroom work is required. This course includes an average of 7.5 hours of outside the classroom work.

### 102 ENGINE BLOCK MACHINIST MATH AND MEASUREMENT (45/15/3.5)

The student will learn procedures of careful inspection and precise measurement technologies, combined with the proper applications, formulas, and machinist math, to provide a solid basis for successful production and high performance engine assembly procedures. Outside-the-classroom work is required. This course includes an average of 15 hours of outside the classroom work.

### 103 PRINCIPLES AND THEORIES OF ENGINE BLOCK (30/5/2.0)

The student will explore the basic theory and concepts of internal combustion engine operation, and then move into more specific and complex areas including torque, airflow, volumetric efficiency, operating cycles, and horsepower. Outside-the-classroom work is required. This course includes an average of 8.75 hours of outside the classroom work.

### 104 DESIGN AND FUNCTION OF ENGINE BLOCK COMPONENTS (30/0/2.0)

The student will learn the individual components, their function, design, material composition, and differences. This includes the relationship of the individual pieces to each other and assembly as a whole. Production and performance variations will also be discussed. Outside-the-classroom work is required. This course includes an average of 7.5 hours of outside the classroom work.

### 105 ENGINE BLOCK DISASSEMBLY AND INSPECTION (45/15/3.5)

The student learns the techniques of thorough examination and evaluation during disassembly to correctly diagnose engine failure, potential problems, and component replacement. Cleaning methods for both cast iron and aluminum are covered, including the impact of current environmental concerns. Additionally, crack detection methods and casting repairs are also covered. Outside-the-classroom work is required. This course includes an average of 15 hours of outside the classroom work.

### 106 OPERATION OF ENGINE BLOCK MACHINING EQUIPMENT (45/15/3.5)

The student learns the set-up and operation procedures of the machining equipment. He will also learn the procedures used to complete the machining of block and component parts. The differences between standard and high performance applications will be highlighted. Outside-the-classroom work is required. This course includes an average of 15 hours of outside the classroom work.

# 11 AUTOMOTIVE ENGINE/BLOCK & CYLINDER HEAD MACHINING

## 107 ENGINE BLOCK AND COMPONENT MACHINING (105/180/13.0)

Actual hands-on block and component machining will be accomplished by each student as they become proficient with all machining operations. Machined components will be carefully checked for accuracy. These pieces will become part of each student's course project. Outside-the-classroom work is required. This course includes an average of 71.25 hours of outside the classroom work.

## 108 ENGINE BLOCK BLUEPRINTING (30/15/2.5)

The student will learn blueprinting. The art of producing maximum capable horsepower, torque, volumetric efficiency, and R.P.M. through precise component assembly relationships will be taught. The effects of camshaft selection, degreasing, and valve timing in relation to cylinder pressure, will be studied. The student will learn the real mystery of high performance. Outside-the-classroom work is required. This course includes an average of 11.25 hours of outside the classroom work.

## 109 ENGINE BLOCK ASSEMBLY AND DYNAMOMETER TESTING (60/45/5.5)

The primary focus of this course is mastering the art of assembling precisely machined components into a complete, operating engine block. Upon completion, the student will run his engine project on a Superflow Dynamometer for evaluation. Changes and adjustments will be made to demonstrate their effects on power output. Outside-the-classroom work is required. This course includes an average of 26.25 hours of outside the classroom work.

## 201 CYLINDER HEAD WORK PRACTICES, TOOLS, AND SAFETY (30/0/2.0)

The student will gain a general introduction to the industry work environment including customer relations, work orders, build sheets, and cylinder head parts acquisition. The student will be introduced to the use of precision measurement and the required specialized, as well as basic hand tools. Special emphasis is placed on personal and shop safety due to the nature of potentially hazardous equipment. Outside-the-classroom work is required. This course includes an average of 7.5 hours of outside the classroom work.

## 202 CYLINDER HEAD MACHINIST MATH AND MEASUREMENT (45/15/3.5)

The student will learn procedures of careful inspection and precise measurement technologies, combined with the proper applications, formulas, and machinist math to provide a solid basis for successful production and high performance cylinder head assembly procedures. Outside-the-classroom work is required. This course includes an average of 15 hours of outside the classroom work.

## 203 PRINCIPLES AND THEORIES OF ENGINE CYLINDER HEAD (30/5/2.0)

The student will learn the basic theory and concepts of internal combustion engine operation. The course then moves into more specific and complex areas including torque, airflow, volumetric efficiency, operating cycles, and horsepower. Outside-the-classroom work is required. This course includes an average of 8.75 hours of outside the classroom work.

## 204 DESIGN AND FUNCTION OF CYLINDER HEAD COMPONENTS (30/0/2.0)

The student will learn the how and why of the many components of cylinder head assembly and their relationship to each other. The function and various material compositions of cylinder head castings and components will also be covered. Standard and high performance differences will be discussed. Outside-the-classroom work is required. This course includes an average of 7.5 hours of outside the classroom work.



Flowbench instruction



Student measuring valve depth

## 205 CYLINDER HEAD DISASSEMBLY AND INSPECTION (45/15/3.5)

The student will learn the proper procedure of head disassembly and careful inspection to determine any causes of failure, repair needs, and component replacement. Cleaning methods, crack detection, repair, and associated environmental issues, for both aluminum and iron heads, will also be discussed. Outside-the-classroom work is required. This course includes an average of 15 hours of outside the classroom work.

## 206 OPERATION OF CYLINDER HEAD MACHINING EQUIPMENT (45/15/3.5)

The student learns the set-up and operation procedures of machining equipment. The student will also learn the procedures used to complete the machining of cylinder heads and component parts. A discussion of high performance and production differences will complete this section. Outside-the-classroom work is required. This course includes an average of 15 hours of outside the classroom work.

## 207 CYLINDER HEAD AND COMPONENT MACHINING (90/105/9.5)

Actual hands-on cylinder head and component machining will be accomplished by each student as they become proficient with all machining operations. Machined components will be checked closely for accuracy. These pieces will become part of each student's course project. Outside-the-classroom work is required. This course includes an average of 48.75 hours of outside the classroom work.

## 208 CYLINDER HEAD BLUEPRINTING (30/15/2.5)

The student is exposed to the art of creating maximum efficiency and horsepower through precision component assembly relationships. Combustion chamber sizing and compression ratios will be discussed. The student will also study cylinder head performance secrets. Outside-the-classroom work is required. This course includes an average of 11.25 hours of outside the classroom work.

## 209 CYLINDER HEAD ASSEMBLY (30/60/4.0)

The student will learn how to assemble the precisely machined components into a complete cylinder head. This is covered in detail. Evaluation and testing of complete assemblies will reveal the relationship of changes to performance. Outside-the-classroom work is required. This course includes an average of 22.5 hours of outside the classroom work.

## 210 CYLINDER HEAD PORTING (30/75/4.5)

The student will explore flow characteristics of various head designs and the resultant effects of change. Proper porting technique, when it should be used, and how it should be used, is covered. The actual hands-on experience will illustrate methods and levels of airflow improvement. Outside-the-classroom work is required. This course includes an average of 26.25 hours of outside the classroom work.

## 212 CAREER DEVELOPMENT PLANNING (30/0/2.0)

The student is prepared to enter the work force by learning the importance of personal appearance, conduct, attitude and mechanical aptitude. Job search techniques, the application process, effective resume composition, and interviewing skills are covered. Career goal setting, steps toward self-employment, and job placement assistance is covered. Outside-the-classroom work is required. This course includes an average of 7.5 hours of outside the classroom work.



## PROGRAM OBJECTIVES

The objective of the Motorsports Welding program is to qualify the student as an entry-level welder in a motorsports environment. The students will learn key welding processes including SMAG, MIG, TIG, high frequency TIG, and Flux Core Arc Welding (FCAW). The program is intended for the mechanically inclined student with a desire to work as a welder in the automotive industry or add it to their list of skills. The program will include both classroom and hands-on instruction. The School of Automotive Machinists & Technology measures student progress in semester credit hours. One semester credit hour for each fifteen (15) hours of classroom contact plus appropriate outside preparation; or one semester credit hour for each thirty (30) hours of laboratory work plus outside preparation. This program has an outside work requirement for completion. Please see the course description for additional information. The student will learn how to execute welding processes including gas welding, brazing, soldering, cutting, Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW), and basic metal fabrication. The student will also learn how to operate and maintain welding equipment, proper fixture installation and piece preparation to ensure accuracy and repeatability of welding operations, verify quality and accuracy, and inspect finished parts. The motorsports welding graduate will be able to find employment as automotive welders, cutters, solderers, and brazers working with blocks, cylinder heads, crankshafts, intake manifolds, as well as other engine components. A motorsports welder at the race track will be able to use these skills on racing vehicles including frame, roll cage, rear end, and suspension pieces. Work settings include race tracks, automotive machine shops, and generic welding environments. Single subjects making up this program are not offered individually. See Equipment List Addendum for a complete list of machines used in the Motorsports Welding program.



TIG Welding

COURSE	TITLE	TEXAS WORKFORCE COMMISSION						DEPARTMENT OF EDUCATION	
		THEORY	LAB	SEM HRS	ACCSC THEORY	ACCSC LAB	TOTAL CLOCK HRS	(Used for Title IV Funding) SEMESTER HRS	
401	Work Practices, Tools, Safety, and Introduction	2.0	0.0	2.0	30.0	0.0	30.0	1.0	
402†	Gas Welding, Brazing, Soldering, and Cutting	2.0	1.0	3.0	30.0	30.0	60.0	2.0	
403*	Shielded Metal Arc Welding (SMAW)	1.0	1.5	2.5	20.0	45.0	65.0	2.0	
404*	Gas Metal Arc Welding (GMAW)	1.0	1.5	2.5	15.0	45.0	60.0	2.0	
405*	Gas Tungsten Arc Welding (GTAW)	6.0	4.0	10.0	90.0	120.0	210.0	7.0	
406*	Basic Metal Fabrication	1.0	1.5	2.5	15.0	45.0	60.0	2.0	
407*	Career Preparation	4.0	3.0	7.0	60.0	90.0	150.0	5.0	
<b>Totals</b>		<b>17.0</b>	<b>12.5</b>	<b>29.5</b>	<b>260.0</b>	<b>375.0</b>	<b>635.0**</b>	<b>21.0</b>	

† Requires 401 as prerequisite

\* Requires 401 and 402 as prerequisites

\*\* Outside work is not included

The approximate time to complete this program is thirty-five (35) weeks (day) and thirty-nine (39) weeks (night). The total program weeks do not include school breaks.

## COURSE DESCRIPTIONS/SYNOPSIS

### 401 WORK PRACTICES, TOOLS, SAFETY, AND INTRODUCTION (30/0/2)

This course provides a general introduction to the industry work environment, equipment setup and maintenance, welding symbols and corresponding welds, and welding techniques and procedures. The student will learn about the various welding processes such as Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW) and oxygen-acetylene operations. Special emphasis is placed on both personal and shop safety due to the nature of potentially hazardous equipment. Outside-the-classroom work is required. This course includes 7.5 hours of outside the classroom work.

### 402 GAS WELDING, BRAZING, SOLDERING, AND CUTTING (30/30/3)

This course provides an introduction and machine overview of gas welding, brazing, and soldering. The student will learn how to operate and maintain oxygen-acetylene equipment define the capabilities of this equipment, and explain applications in the racing industry. Outside-the-classroom work is required. This course includes 15 hours of outside the classroom work.

### 403 SHIELDED METAL ARC WELDING (SMAW) (20/45/2.5)

This course provides an introduction and machine overview of Shielded Metal Arc Welding (SMAW). The student will learn the general principles of SMAW, operation and maintenance of SMAW equipment, the capabilities of this equipment, and applications in the racing industry. The student will learn typical stick welding set up for specific components and operations and special purpose fixture fabrication and utilization. Proper fixture installation and piece preparation to ensure accuracy and repeatability of welding operations will be discussed and applied. Outside-the-classroom work is required. This course includes 16.25 hours of outside the classroom work.

### 404 GAS METAL ARC WELDING (GMAW) (15/45/2.5)

This course provides an introduction and machine overview of Gas Metal Arc Welding (GMAW). The student will learn how to operate and maintain GMAW equipment, define the capabilities of this equipment, and explain applications in the racing industry. The student will also learn

the fundamental techniques for welding ferrous metals. Outside-the-classroom work is required. This course includes 15 hours of outside-the-classroom work.

### 405 GAS TUNGSTEN ARC WELDING (GTAW) (90/120/10)

This course provides an introduction and machine overview of Gas Tungsten Arc Welding (GTAW). The student will learn how to operate and maintain GTAW equipment, define the capabilities of this equipment, and explain applications in the racing industry. The student will learn typical GTAW welding set up and utilization. Proper fixture installation and piece preparation to ensure accuracy and repeatability of welding operations will be discussed and applied. Outside-the-classroom work is required. This course includes 52.5 hours of outside-the-classroom work.

### 406 BASIC METAL FABRICATION (15/45/2.5)

The student will learn the general operation and maintenance of metal fabrication tools and equipment and their application in the racing industry. Once optimum component designs have been achieved through conventional techniques, the part will be fabricated using various tools and techniques. The student will learn component improvements and special emphasis will be placed on effectiveness of finished parts. Through inspection of finished work, the student will learn how to verify quality and accuracy and the possibility of further performance improvements will be analyzed. Outside-the-classroom work is required. This course includes 15 hours of outside-the-classroom work.

### 407 CAREER PREPARATION (60/90/7)

The objective of this course is to serve as the student's final phase prior to entering the employment market as an entry-level motorsports welder. The student will build final lab competencies in TIG, MIG, and structural welding. Moreover, the student will learn about the importance of conduct, attitude, and appearance. Methods of job search, resume preparation and the interview process are covered. Additional discussion will focus on future goals and School of Automotive Machinists & Technology placement assistance. Outside-the-classroom work is required. This course includes 37.5 hours of outside-the-classroom work.

# 13 MOTORSPORTS EFI TUNING

## PROGRAM OBJECTIVES:

The program objective for the Motorsports EFI Tuning program is to prepare the student for entry into the tuning industry, to be capable of calibrating and troubleshooting the Engine Management System on the engine dynamometer, chassis dynamometer and at the race track. This program includes instruction in adding performance accessories, modifying power trains, tuning custom engines, suspension, exhaust systems, and using dynamometers and other diagnostic equipment. This program is intended for mechanically inclined students with a solid background in the mechanical system of an automotive engine and desire to extend that knowledge into the electronic control system in the automotive industry. The program will include both classroom and hands-on lab instruction. The School of Automotive Machinists & Technology measures student progress in semester credit hours. One semester credit hour for each fifteen (15) hours of classroom contact plus appropriate outside preparation or the equivalent; or one semester credit hour for each thirty (30) hours of laboratory work plus appropriate outside preparation. This program has an outside work requirement for completion. Please see the course description for additional information. The primary emphasis of this program will be on both the science and the analytical method used to extract the maximum performance out of an engine safely. The student will learn and explore how to utilize various engine control software and dynamometers to alter engine operating parameters while observing the physical changes in real time. Special tuning topics such as High Performance Naturally Aspirated, Turbo Charged, Supercharged, Nitrous, Launch Control, and Traction Control will be covered in detail. The student will learn to analyze and evaluate completed projects to quantify improvements, using racing industry standard equipment and techniques. Graduates will benefit from improved opportunities for employment in all forms of the motorsports industry. Single subjects making up this program are not offered individually. See Equipment List Addendum for a complete list of machines used in the Motorsports EFI Tuning program.



EFI Tuning

## MOTORSPORTS EFI TUNING ADMISSIONS REQUIREMENTS:

Program applicants are required to:

1. Present proof of secondary education (high school diploma or GED certificate) and be at least 18 years of age.
2. Be computer literate and familiar with Microsoft Windows 7 or later.
3. Achieve a passing score on the Bennett Mechanical Comprehensive Test (a passing score of 39 which is the mean score of 12<sup>th</sup> grade students), as an entrance exam.

COURSE	TITLE	THEORY	TEXAS WORKFORCE COMMISSION				TOTAL CLOCK HRS	DEPARTMENT OF EDUCATION
			LAB	SEM HRS	ACCSC THEORY	ACCSC LAB		(Used for Title IV Funding) SEMESTER HRS
EFI 501	Introduction to EFI Tuning, Tools, Systems & Safety	2.0	0.0	2.0	35.0	0.0	35.0	1.0
EFI 502	Engine Tuning Concepts and Theory	2.0	1.0	3.0	30.0	30.0	60.0	2.0
EFI 503	Understanding of Basic Electronics	4.0	1.0	5.0	60.0	30.0	90.0	3.0
EFI 504	Dynamometer Operations	1.0	2.0	3.0	15.0	60.0	75.0	2.5
EFI 505	Stock Computer Training & Engine Diagnostics	4.0	1.0	5.0	60.0	30.0	90.0	3.0
EFI 506	Aftermarket Advanced Electronics	3.0	1.0	4.0	45.0	30.0	75.0	2.5
EFI 507	Data Collection, Analysis, & Track Tuning	2.0	2.0	4.0	30.0	60.0	90.0	3.0
<b>Totals</b>		<b>18.0</b>	<b>8.0</b>	<b>26.0</b>	<b>275.0</b>	<b>240.0</b>	<b>515.0*</b>	<b>17.0</b>

\* Outside work is not included

The approximate time to complete this program is twenty-five (25) weeks. The total program weeks do not include school breaks.

## COURSE DESCRIPTIONS/SYNOPSIS

### EFI 501 INTRODUCTION TO EFI TUNING, TOOLS, SYSTEMS AND SAFETY (35/0/2)

The student will gain working knowledge of the different types of EFI systems, software and other tools used to assist in engine vehicle tuning. Students will learn practices that will influence safety for themselves and others due to the nature of the potentially hazardous environment. Outside-the-classroom work is required. This course includes an average of 7.5 hours of outside-the-classroom work.

### EFI 502 ENGINE TUNING CONCEPTS AND THEORY (30/30/3)

The student will learn how to differentiate between the various types of systems and how they differ in tuning strategies. They also learn what is involved in fuel and ignition tuning, open and closed loop tuning and functions of PID controllers as well as possible secondary systems that may be controlled by the computer. Combustion chemistry, emission control, and fuel difference is also covered. Outside-the-classroom work is required. This course includes an average of 15 hours of outside-the-classroom work. Prerequisite 501

### EFI 503 UNDERSTANDING OF BASIC ELECTRONICS (60/30/5)

This course explains the different types of sensors that are used to provide feedback to the computer accompanied by how they work. Students will learn what sensors are appropriate to use in specific applications. They will also learn how to diagnosis possible issues. Outside-the-classroom work is required. This course includes an average of 22.5 hours of outside-the-classroom work. Prerequisite 501 - 502

### EFI 504 DYNAMOMETER OPERATIONS (15/60/3)

Students will learn to set-up an engine/vehicle on the engine and chassis dynamometer. They will learn the safety requirements to operate these dynamometers and understand how the function of each. Student will practice tuning on the engine and chassis dynamometer. Outside-the-classroom work is required. This course includes an average of 18.75 hours of outside-the-classroom work. Prerequisite 501 - 503

### EFI 505 STOCK COMPUTER TRAINING AND ENGINE DIAGNOSTICS (60/30/5)

Students will learn strategies of tuning factory computer systems using HPTuners. They will learn to improve OEM mapping for better drivability tuning along with transmission tuning and engine diagnostics. Outside-the-classroom work is required. This course includes an average of 22.5 hours of outside-the-classroom work. Prerequisite 501 - 504

### EFI 506 AFTERMARKET ADVANCED ELECTRONICS (45/30/4)

Students will learn how to install aftermarket engine management systems. They will also learn how to diagnose issues and make modifications. Outside-the-classroom work is required. This course includes an average of 18.75 hours of outside-the-classroom work. Prerequisite 501 - 505

### EFI 507 DATA COLLECTION, ANALYSIS, AND TRACK TUNING (30/60/4)

Students learn about the effects that changing track and weather conditions will have on a tune and how making adjustments will best suit the current conditions based on driver feedback, ET/mph and data logs. Outside-the-classroom work is required. This course includes an average of 22.5 hours of outside-the-classroom work. Prerequisite 501 - 506



# ASSOCIATE OF APPLIED SCIENCE DEGREE IN 14 AUTOMOTIVE ENGINE/BLOCK & CYLINDER HEAD MACHINING

## PROGRAM OBJECTIVES

The program objective of the Automotive Engine/Block and Cylinder Head Machining is to qualify the student as an automotive block and cylinder head machinist. Students take five general education courses, in addition to the technical courses, to complete the degree. Although the actual machining processes will be the major emphasis of the program, a thorough education on the theory of operation of the modern automotive engine will be presented along with the role of the cylinder head to the complete assembly. Performance modifications effects on power, longevity, and airflow characteristics will be highlighted in all courses of this program. The program is intended for the mechanically inclined student with a desire to work in the high performance/racing industry. The program will include both classroom and hands-on lab instruction. The School of Automotive Machinists & Technology measures student progress in semester credit hours. One semester credit hour for each fifteen (15) hours of classroom contact plus appropriate outside preparation or the equivalent; or one semester credit hour for each thirty (30) hours of laboratory work plus appropriate outside preparation. Single subjects making up this program are not offered individually. The students will learn performance machining operation skills on industry standard machines, a boring bar, Sunnen cylinder hones, align hone and rod resizer, as well as a SuperFlow dynamometer, DynoJet chassis dynamometer, Sunnen surfacer, seat and guide machine, valve guide workstation, and SuperFlow flow bench. Outside the classroom work is required. See Equipment List Addendum for a complete list of machines used in the Block Machining and Cylinder Head Machining Program.



Students adjusting throttle linkage

COURSE	TITLE	THEORY	LAB	SEM HRS	TEXAS WORKFORCE COMMISSION ACCSC		TOTAL CLOCK HRS	DEPARTMENT OF EDUCATION Title IV Funding Using Accrediting Agency Hours ACCSC/THECB †
					THEORY	LAB		SEM HRS
101	Engine Block Work Practices, Tools, and Safety	2.0	0.0	2.0	30.0	0.0	30.0	2.0
102	Engine Block Machinist Math and Measurement	3.0	0.5	3.5	45.0	15.0	60.0	3.5
103	Principles and Theories of Engine Block	2.0	0.0	2.0	30.0	5.0	35.0	2.5
104	Design and Function of Engine Block Components	2.0	0.0	2.0	30.0	0.0	30.0	2.0
105	Engine Block Disassembly and Inspection	3.0	0.5	3.5	45.0	15.0	60.0	3.5
106	Operation of Engine Block Machining Equipment	3.0	0.5	3.5	45.0	15.0	60.0	3.5
107	Engine Block and Component Machining	7.0	6.0	13.0	105.0	180.0	285.0	13.0
108	Engine Block Blueprinting	2.0	0.5	2.5	30.0	15.0	45.0	2.5
109	Engine Block Assembly and Dynamometer Testing	4.0	1.5	5.5	60.0	45.0	105.0	5.5
201	Cylinder Head Work Practices, Tools, and Safety	2.0	0.0	2.0	30.0	0.0	30.0	2.0
202	Cylinder Head Machinist Math and Measurement	3.0	0.5	3.5	45.0	15.0	60.0	3.5
203	Principles and Theories of Engine Head Machining	2.0	0.0	2.0	30.0	5.0	35.0	2.0
204	Design and Function of Cylinder Head Components	2.0	0.0	2.0	30.0	0.0	30.0	2.0
205	Cylinder Head Disassembly and Inspection	3.0	0.5	3.5	45.0	15.0	60.0	3.5
206	Operation of Cylinder Head Machining Equipment	3.0	0.5	3.5	45.0	15.0	60.0	3.5
207	Cylinder Head and Component Machining	6.0	3.5	9.5	90.0	105.0	195.0	9.5
208	Cylinder Head Blueprinting	2.0	0.5	2.5	30.0	15.0	45.0	2.5
209	Cylinder Head Assembly	2.0	2.0	4.0	30.0	60.0	90.0	4.0
210	Cylinder Head Porting	2.0	2.5	4.5	30.0	75.0	105.0	4.5
212	Career Development Planning	2.0	0.0	2.0	30.0	0.0	30.0	2.0
ENG101 *	English Composition	3.0	0.0	3.0	45.0	0.0	45.0	3.0
COM101 *	Introduction to Communication	3.0	0.0	3.0	45.0	0.0	45.0	3.0
SOC101 *	Introduction to Sociology	3.0	0.0	3.0	45.0	0.0	45.0	3.0
MTH101 *	College Algebra	3.0	0.0	3.0	45.0	0.0	45.0	3.0
PHY101 *	Introduction to Physics	3.0	1.0	4.0	45.0	30.0	75.0	4.0
<b>Totals</b>		<b>72.0</b>	<b>20.5</b>	<b>92.5</b>	<b>1080.0</b>	<b>625.0</b>	<b>1705.0**</b>	<b>92.5 = 92</b>

The U.S. Department of Education does not round

\* Requires 101 through 210 as prerequisites

\*\* Outside work is not included

The approximate time to complete this program is one hundred (100) weeks (day) and one hundred nineteen (119) weeks (night). The total program weeks do not include school breaks.

† Accrediting Commission of Career Schools and Colleges / Texas Higher Education Coordinating Board

## COURSE DESCRIPTIONS/SYNOPSIS

### 101 ENGINE BLOCK WORK PRACTICES, TOOLS, AND SAFETY (30/0/2.0)

The student will gain a general introduction to the industry work environment including customer relations, work orders, build sheets, and parts acquisition. The student will be introduced to the use of precision measurement and specialized, as well as, basic hand tools required will also be covered. Special emphasis is placed on both personal and shop safety due to the nature of potentially hazardous equipment. This course includes an average of 7.5 hours of outside the classroom work.

### 102 ENGINE BLOCK MACHINIST MATH AND MEASUREMENT (45/15/3.5)

The student will learn the procedures of careful inspection and precise measurement technologies with the proper applications, formulas, and machinist math to provide a solid basis for successful production and high performance engine assembly procedures. This course includes an average of 15 hours of outside the classroom work.

# 15 ASSOCIATE OF APPLIED SCIENCE DEGREE IN **AUTOMOTIVE ENGINE/BLOCK & CYLINDER HEAD MACHINING**

## **103 PRINCIPLES AND THEORIES OF ENGINE BLOCK (30/5/2.0)**

The student will explore the basic theory and concepts of internal combustion engine operation, then moves into more specific and complex areas including torque, airflow, volumetric efficiency, operating cycles, and horsepower. This course includes an average of 8.75 hours of outside the classroom work.

## **104 DESIGN AND FUNCTION OF ENGINE BLOCK COMPONENTS (30/0/2.0)**

The student will learn the individual components, their function, design, and material composition, and the differences will be covered, to include the relationship of the individual pieces to each other and the assembly as a whole. Production and performance variations will also be discussed. This course includes an average of 7.5 hours of outside the classroom work.

## **105 ENGINE BLOCK DISASSEMBLY AND INSPECTION (45/15/3.5)**

The student learns the techniques of thorough examination and evaluation during disassembly to correctly diagnose engine failure, potential problems, and component replacement. Cleaning methods for both cast iron and aluminum are covered, including the impact of current environmental concerns. Additionally, crack detection methods and casting repairs are also covered. This course includes an average of 15 hours of outside the classroom work.

## **106 OPERATION OF ENGINE BLOCK MACHINING EQUIPMENT (45/15/3.5)**

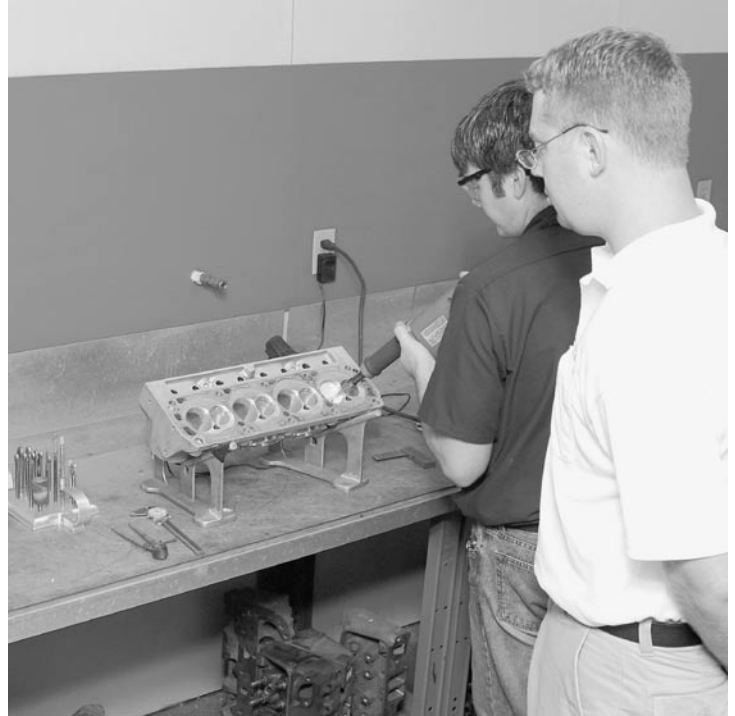
The student learns the set-up and operation procedures of the machining equipment. He will also learn the procedures used to complete the machining of block and component parts. The differences between standard and high performance applications will be highlighted. This course includes an average of 15 hours of outside the classroom work.

## **107 ENGINE BLOCK AND COMPONENT MACHINING (105/180/13.0)**

Actual hands-on block and component machining will be accomplished by each student as they become proficient with all machining operations. Machined components will be carefully checked for accuracy. These pieces will become part of each student's course project. This course includes an average of 71.25 hours of outside the classroom work.



Student measuring valve depth



Cylinder head porting

## **108 ENGINE BLOCK BLUEPRINTING (30/15/2.5)**

The student will learn blueprinting; the art of producing maximum capable horsepower, torque, volumetric efficiency, and RPM through precise component assembly relationships will be taught. The effects of camshaft selection, degreasing, and valve timing in relation to cylinder pressure will be studied. The student will learn the real mystery of high performance. This course includes an average of 11.25 hours of outside the classroom work.

## **109 ENGINE BLOCK ASSEMBLY AND DYNAMOMETER TESTING (60/45/5.5)**

The primary focus of this course is mastering the art of assembling precisely machined components into a complete, operating engine block. Upon completion, the student will run his engine project on a Superflow Dynamometer for evaluation. Changes and adjustments will be made to demonstrate their effects on power output. This course includes an average of 26.25 hours of outside the classroom work.

## **201 CYLINDER HEAD WORK PRACTICES, TOOLS, AND SAFETY (30/0/2.0)**

The student will gain a general introduction to the industry work environment including customer relations, work orders, build sheets, and parts acquisition. The student will be introduced to the use of precision measurement and specialized, as well as, basic hand tools required will also be covered. Special emphasis is placed on both personal and shop safety due to the nature of potentially hazardous equipment. This course includes an average of 7.5 hours of outside the classroom work.

## **202 CYLINDER HEAD MACHINIST MATH AND MEASUREMENT (45/15/3.5)**

The student will learn the procedures of careful inspection and precise measurement technologies, combined with the proper applications, formulas, and machinist math to provide a solid basis for successful production and high performance engine assembly procedures. This course includes an average of 15 hours of outside the classroom work.

## **203 PRINCIPLES AND THEORIES OF ENGINE CYLINDER HEAD (30/5/2.0)**

The student will learn the basic theory and concepts of internal combustion engine operation. The course then moves into more specific and complex areas including torque, airflow, volumetric efficiency, operating cycles, and horsepower. This course includes an average of 8.75 hours of outside the classroom work.



# ASSOCIATE OF APPLIED SCIENCE DEGREE IN 16 AUTOMOTIVE ENGINE/BLOCK & CYLINDER HEAD MACHINING

## **204 DESIGN AND FUNCTION OF CYLINDER HEAD COMPONENTS (30/0/2.0)**

The student will learn the how and why of the many components of the cylinder head assembly and their relationship to each other. The function and various material compositions of cylinder head castings and components will also be covered. Standard and high performance differences will be discussed. This course includes an average of 7.5 hours of outside the classroom work.

## **205 CYLINDER HEAD DISASSEMBLY AND INSPECTION (45/15/3.5)**

The student will learn the proper procedure of head disassembly and careful inspection to determine any causes of failure, repairs needed, and component replacement. Cleaning methods, crack detection, repair, and associated environmental issues, for both aluminum and iron heads will also be discussed. This course includes an average of 15 hours of outside the classroom work.

## **206 OPERATION OF CYLINDER HEAD MACHINING EQUIPMENT (45/15/3.5)**

The student learns the set-up and operation procedures of machining equipment. The student will also learn the procedures used to complete the machining of cylinder heads and component parts. A discussion of high performance and production differences will complete this section. This course includes an average of 15 hours of outside the classroom work.

## **207 CYLINDER HEAD AND COMPONENT MACHINING (90/105/9.5)**

Actual hands-on cylinder head and component machining will be accomplished by each student as they become proficient with all machining operations. Machined components will be checked closely for accuracy. These pieces will become part of each student's course project. This course includes an average of 48.75 hours of outside the classroom work.

## **208 CYLINDER HEAD BLUEPRINTING (30/15/2.5)**

The student is exposed to the art of creating maximum efficiency and horsepower through precision component assembly relationships. Combustion chamber sizing and compression ratios will be discussed. The student will also study cylinder head performance secrets. This course includes an average of 11.25 hours of outside the classroom work.

## **209 CYLINDER HEAD ASSEMBLY (30/60/4.0)**

The student will learn correct assembly procedures of precisely machined components into a complete cylinder head. Evaluation and testing of complete assemblies will reveal the relationship of changes to performance. This course includes an average of 22.5 hours of outside the classroom work.

## **210 CYLINDER HEAD PORTING (30/75/4.5)**

The student will explore flow characteristics of various head designs and the resultant effects of change. Proper techniques of porting, when it should be used, and actual hands-on experience will illustrate methods and levels of airflow improvement. This course includes an average of 26.25 hours of outside the classroom work.

## **212 CAREER DEVELOPMENT PLANNING (30/0/2.0)**

The student is prepared to enter the job market by learning the importance of personal appearance, conduct, and attitude, in addition to mechanical aptitude. Subjects covered include job search, application process, effective resume composition, and interviews with potential employers. Career goal setting, including steps toward self-employment, along with job placement assistance are also covered. This course includes an average of 7.5 hours of outside the classroom work.

## **ENG 101 ENGLISH COMPOSITION (45/0/3.0)**

Students develop an understanding of the writing process, learn how to analyze readings, and write for personal and professional application. Academic writing is emphasized including proper use of grammar, punctuation, and sentence structure. This course includes an average of 90 hours of outside the classroom work.

## **COM 101 INTRODUCTION TO COMMUNICATION (45/0/3.0)**

This course introduces basic communication. Students learn how to analyze verbal and nonverbal cues, resolve conflicts, and execute effective business and interpersonal communication. Students demonstrate effective communication skills through written correspondence and oral presentations. Current writings on the subject broaden students' exposure to communication. This course includes an average of 90 hours of outside the classroom work.

## **SOC 101 INTRODUCTION TO SOCIOLOGY (45/0/3.0)**

This course explores sociological processes that underlie everyday life. Topics include globalization, cultural diversity, family, poverty, critical thinking, new technologies, and the growing influence of mass media. This course includes an average of 90 hours of outside the classroom work.

## **MTH 101 COLLEGE ALGEBRA (45/0/3.0)**

This course is an introduction to algebra. Students learn how to solve problems using signed numbers, polynomials, algebraic expressions, factoring, exponents, rational and radical expressions, linear and quadratic equations and inequalities, and graphs. This course includes an average of 90 hours of outside the classroom work.

## **PHY 101 INTRODUCTION TO PHYSICS (45/30/4.0)**

Students learn the basic principles of motion, matter, heat, sound, electricity, light, and modern physics. It includes appropriate laboratories. This course includes an average of 90 hours of outside the classroom work.

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*SAM Tech reserves the right to change start dates, fees, and course work subject to appropriate procedures and approval by its regulatory bodies.*

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NOTES:

SCHOOL OF AUTOMOTIVE  
MACHINISTS & TECHNOLOGY

# **SAM TECH**

SAMTECH.EDU

1911 Antoine • Houston, Texas 77055

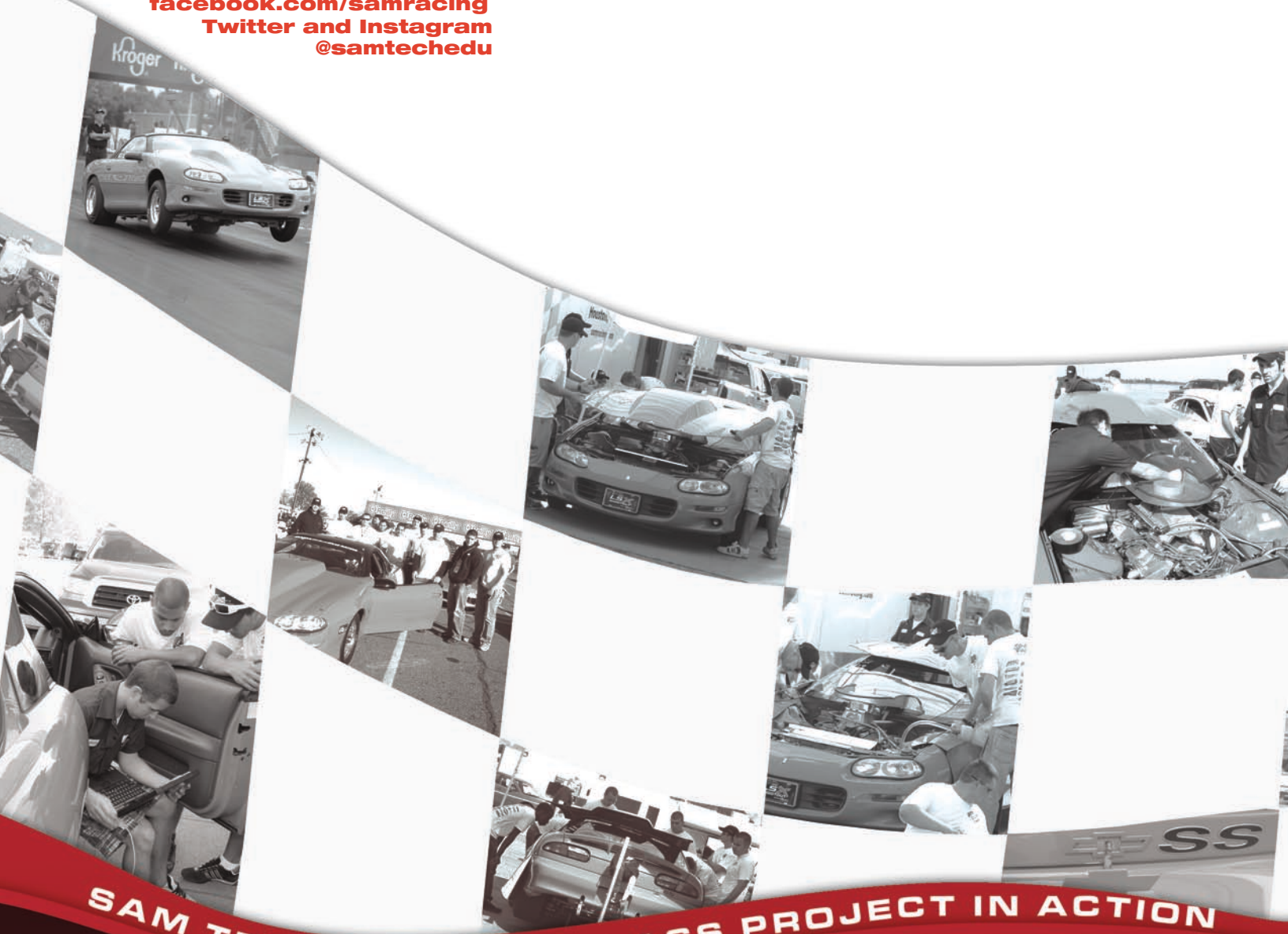
713-683-3817 • Fax 713-683-7077

[samtech.edu](http://samtech.edu)

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Twitter and Instagram

@samtechedu



**SAM TECH STUDENT CLASS PROJECT IN ACTION**

APPROVED AND REGULATED BY THE TEXAS WORKFORCE COMMISSION  
CAREER SCHOOLS AND COLLEGES, AUSTIN, TEXAS  
APPROVED FOR TRAINING OF VA ELIGIBLE PERSONS



**SCHOOL OF AUTOMOTIVE MACHINISTS & TECHNOLOGY**

Addendum A to CATALOG Vol. 18

No. 64

October 16, 2017

**SCHEDULE OF PROGRAMS**

- Block Program – Automotive Engine/Block Machining
- Cylinder Head Program – Automotive Engine/Cylinder Head Machining
- Combo Program – Automotive Engine/Block & Cylinder Head Machining (This is a combination of the Block and Head Programs listed above)
- Associate of Applied Science Degree in Automotive Engine/Block & Cylinder Head Machining (This is a combination of the Block and Head Programs listed above along with five general education courses)
- CNC Program – Automotive Engine/CNC Machining
- Motorsports Welding Program
- Motorsports EFI Tuning

**IN SERVICE DAYS (No Classes) – 2017**

February 20                      October 9  
 May 26  
 September 1

**SCHOOL HOLIDAYS AND BREAKS – 2017**

January 1-2                      New Year's/Winter Break  
 March 13-17                      Spring Break  
 April 14                          Good Friday  
 May 29                              Memorial Day  
 July 3-18                          Independence Day/Summer Break  
 September 4                      Labor Day  
 November 20-24                      Thanksgiving  
 December 18-31                      Winter Break  
 January 1-2, 2018

**SCHEDULE OF TUITION**

	<b>Motorsports Welding Program</b>
Registration Fee	100.00
Tuition (per program)	11,100.00
Textbooks & Manuals (call for pricing)*	
Lab Fees	780.00
	<b>Total 12,180.00</b>

\*Textbooks & Manuals not included in total cost of program(s)

(Tuition does not include educational field trip expense)

**SCHEDULE OF TUITION**

	<b>Block Program</b>
Registration Fee	100.00
Tuition (per program)	16,275.00
Textbooks & Manuals (call for pricing)*	
	<b>Total 16,375.00</b>

**SCHEDULE OF TUITION**

	<b>Cylinder Head Program</b>
Registration Fee	100.00
Tuition (per program)	16,500.00
Textbooks & Manuals (call for pricing)*	
Lab Fees	275.00
	<b>Total 16,875.00</b>

**SCHEDULE OF TUITION**

	<b>Combo Program (Block &amp; Head)</b>
Registration Fee	200.00
Tuition (subject to change if not taken in same calendar year)	32,775.00
Textbooks & Manuals (call for pricing)*	
Lab Fees	275.00
	<b>Total 33,250.00</b>

**SCHEDULE OF TUITION**

	<b>Associate of Applied Science Degree</b>
Registration Fee – General Education	200.00
Registration and Tuition – Technical Component	33,250.00
<small>(Block Program &amp; Head Program or Combo Program)</small>	
<small>(subject to change if not taken in same calendar year)</small>	
Tuition – General Education	5,800.00
Textbooks & Manuals – General Education (call for pricing)*	
	<b>Total 39,250.00</b>

**SCHEDULE OF TUITION**

	<b>CNC Program</b>
Registration Fee	100.00
Tuition (per program)	13,914.00
Textbooks & Manuals (call for pricing)*	
Lab Fees	200.00
	<b>Total 14,214.00</b>

**SCHEDULE OF TUITION**

	<b>Motorsports EFI Tuning</b>
Registration Fee	100.00
Tuition (per program)	13,735.00
Textbooks & Manuals (call for pricing)*	
Lab Fees	998.00
	<b>Total 14,833.00</b>

Please visit <http://samtech.edu/information/financial-aid/> for gainful employment disclosures.

SAM Tech reserves the right to change start dates, fees, and course work subject to appropriate procedures and approval by its regulatory bodies.

**2017 ENROLLMENT DATES**

**BLOCK, HEAD, & COMBO PROGRAMS**

ENTRANCE DATE	ENDING DATE	ENTRANCE DATE	ENDING DATE	
January 4, 2017	October 3, 2017	July 25, 2017	April 27, 2018	<b>Block Class Only</b>
February 7, 2017	November 7, 2017	August 1, 2017	May 4, 2018	<b>Head Class Only</b>
March 23, 2017	January 5, 2018	September 6, 2017	June 12, 2018	
April 25, 2017	February 6, 2018	October 10, 2017	July 31, 2018	
June 5, 2017	March 26, 2018	November 9, 2017	August 29, 2018	
June 12, 2017	April 2, 2018			

*The above entrance and ending dates are for the Block, Head, & Combo Programs only*

**CNC PROGRAM**

ENTRANCE DATE	ENDING DATE
January 12, 2017	August 21, 2017 PM
May 1, 2017	December 5, 2017 AM
September 7, 2017	April 23, 2018 PM

*The above entrance and ending dates are for the CNC Program only*

**MOTORSPORTS EFI TUNING PROGRAM**

ENTRANCE DATE	ENDING DATE
March 27, 2017	October 5, 2017 AM
November 8, 2017	June 7, 2018 AM

*The above entrance and ending dates are for the Motorsports EFI Tuning only*

**ASSOCIATE OF APPLIED SCIENCE DEGREE PROGRAM\*\***

ENTRANCE DATE	ENDING DATE	
January 30, 2017	September 8, 2017	<small>**All ending dates subject to change due to entering credits</small>
March 6, 2017	October 19, 2017	
April 3, 2017	November 10, 2017	
May 22, 2017	January 18, 2018	
August 7, 2017	March 22, 2018	
September 11, 2017	April 27, 2018	
October 23, 2017	June 1, 2018	
November 13, 2017	June 22, 2018	

*The above entrance and ending dates are for the General Education Section of the AAS Degree Program only*

**2017 MOTORSPORTS WELDING & SEMINAR DATES\*\*\***

\*\*\*To be determined: Please contact SAM Tech for More Information

## ADMINISTRATION

Josephine Bautista	Financial Aid Coordinator
Harry Dixon	Admissions Representative
Susie Faerman	Financial Aid Director
John Guyton, Ed.D	General Education Coordinator/Compliance Coordinator
Kelly Hamilton	Bursar/Accounting Manager/School Certifying Official
Austin Hayward	Student Services Assistant
Travis Hilger	Student Services Assistant
Kimberly Klevenhagen	Student Services Coordinator/Director of Development & Job Placement/Learning Resource Manager/Alumni Association
Brian Massingill	Admissions Representative/Student Services Assistant/Job Placement Assistant/Alumni Association/Website/Media Tech
Judson Massingill	President/Director of Education
Linda Massingill	CEO/School Executive Director/Administrator
Isamar Monrroy	Administrative Assistant/Learning Resource Assistant/Orientation
Scott Morris	Director of Admissions/Student Services Assistant
Bart Parramore	Admissions Representative
Roxanne Phipps	Administrative Assistant/Accounting Assistant
Esther Quintanilla	Administrative Assistant/Learning Resource Assistant/Orientation
Krystle Salas	Registrar/Orientation

## FACULTY

Judson Massingill	Instructor – Certified, Specialized Training - ITS, 45 years experience ASE Master Engine Machinist, BS, Social Science
Chris Bennett	Instructor – Certified, Specialized Training, 13 years experience ASE Master Engine Machinist, AAS in Automotive Engine/Block & Cylinder Head Machining
Jason Haynes	Instructor – Certified, Specialized Training, 12 years experience Multiplatform Advanced Certification in EFI Tuning
Shawn Hooper	Instructor – Certified, Specialized Training, 13 years experience ASE Master Engine Machinist, AAS in Automotive Engine/Block & Cylinder Head Machining
Jonathan Waitt	Instructor – Certified, Specialized Training, 10 years experience ASE Master Engine Repair (applied for), Mastercam Instructor Certified, AAS in Automotive Engine/Block & Cylinder Head Machining
Marshall Collins	Instructor – Certified, Specialized Training, 10 years experience ASE Master Engine Repair (applied for), AAS in Automotive Engine/Block & Cylinder Head Machining

## DRESS CODE

The goal of the School of Automotive Machinists & Technology is to prepare its students to accept a responsible and professional position in the automotive industry. In addition to technical competence, the potential employer will be highly concerned with finding positive attitudes in regards to appearance, dependability, attendance, a good work ethic, and, of course, safety. To this end, the School of Automotive Machinists & Technology has adopted the following dress code for safety and appearance reasons. Failure to abide by this standard may result in a student being asked to leave. The time missed will be considered an unexcused absence.

**SHIRTS:** SAM Tech uniform shirts must be worn at all times while at school. Shirts must be tucked in.

**PANTS:** All students must wear either blue jeans, cords, or dress slacks. Shorts, military pants or athletic apparel are not acceptable.

**SHOES:** Hard leather shoes or boots must be worn at all times while in school.

Baseball caps are the only hats that can be worn at school. Caps other than those issued by School of Automotive Machinists & Technology must be approved by the administration. Caps must be worn with bill facing forward.

## HAIR

**LENGTH:** Hair must be cut in such a manner as not to touch the collar of a standard SAM Tech uniform shirt. Hairstyles are at the discretion of the administration.

## MUSTACHES

**& BEARDS:** Acceptable if neatly trimmed.

**JEWELRY:** Jewelry of any type is not permitted (earrings, body rings, necklaces, etc.)

## SAFETY

**GLASSES:** Safety glasses required to be worn at all times in all shop/lab areas.

## STUDENT COMPLAINT/GRIEVANCE PROCEDURE:

Please see School Catalog regarding the School of Automotive Machinists & Technology Student Complaint/Grievance Procedure.

Schools accredited by the Accrediting Commission of Career Schools and Colleges must have a procedure and operational plan for handling student complaints. If a student does not feel that the school has adequately addressed a complaint or concern, the student may consider contacting the Accrediting Commission. All complaints reviewed by the Commission must be in written form and should grant permission for the Commission to forward a copy of the complaint to the school for a response. This can be accomplished by filing the ACCSC Complaint Form. The complainant(s) will be kept informed as to the status of the complaint as well as the final resolution by the Commission. Please direct all inquiries to:

Accrediting Commission of Career Schools & Colleges  
2101 Wilson Blvd., Suite 302  
Arlington, VA 22201  
(703) 247-4212  
www.accsc.org

A copy of the ACCSC Complaint Form is available at the school and may be obtained by contacting Linda Massingill, Executive Director, or online at [www.accsc.org](http://www.accsc.org).

The information in this supplement is true and correct to the best of my knowledge.



Executive Director



**SCHOOL OF AUTOMOTIVE MACHINISTS & TECHNOLOGY**

Addendum A to CATALOG

No. 67

January 4, 2018

**SCHEDULE OF PROGRAMS**

- Block Program – Automotive Engine/Block Machining
- Cylinder Head Program – Automotive Engine/Cylinder Head Machining
- Combo Program – Automotive Engine/Block & Cylinder Head Machining (This is a combination of the Block and Head Programs listed above)
- Associate of Applied Science Degree in Automotive Engine/Block & Cylinder Head Machining (This is a combination of the Block and Head Programs listed above along with five general education courses)
- CNC Program – Automotive Engine/CNC Machining
- Motorsports Welding Program
- Motorsports EFI Tuning

**IN SERVICE DAYS (No Classes) – 2018**

February 19            October 8  
 May 25  
 August 31

**SCHOOL HOLIDAYS AND BREAKS – 2018**

January 1-2            New Year's/Winter Break  
 March 12-16           Spring Break  
 March 30              Good Friday  
 May 28                Memorial Day  
 July 2-17              Independence Day/Summer Break  
 September 3           Labor Day  
 November 19-23      Thanksgiving  
 December 19-31      Winter Break  
 January 1-2, 2019

**SCHEDULE OF TUITION**

	<b>Motorsports Welding Program</b>
Registration Fee	100.00
Tuition (per program)	11,100.00
Textbooks & Manuals (call for pricing)*	
Lab Fees	780.00
	<b>Total 12,180.00</b>

\*Textbooks & Manuals not included in total cost of program(s)

(Tuition does not include educational field trip expense)

**SCHEDULE OF TUITION**

	<b>Block Program</b>
Registration Fee	100.00
Tuition (per program)	16,575.00
Textbooks & Manuals (call for pricing)*	
	<b>Total 16,675.00</b>

**SCHEDULE OF TUITION**

	<b>Cylinder Head Program</b>
Registration Fee	100.00
Tuition (per program)	16,500.00
Textbooks & Manuals (call for pricing)*	
Lab Fees	475.00
	<b>Total 17,075.00</b>

**SCHEDULE OF TUITION**

	<b>Combo Program (Block &amp; Head)</b>
Registration Fee	200.00
Tuition (price subject to change if not taken in same calendar year)	33,075.00
Textbooks & Manuals (call for pricing)*	
Lab Fees	475.00
	<b>Total 33,750.00</b>

**SCHEDULE OF TUITION**

	<b>Associate of Applied Science Degree</b>
Registration Fee – General Education	200.00
Registration Fee, Tuition, & Lab Fees – Technical Component	33,750.00
<small>(Block Program &amp; Head Program or Combo Program)</small>	
<small>(price subject to change if not taken in same calendar year)</small>	
Tuition – General Education	5,800.00
Textbooks & Manuals – General Education (call for pricing)*	
	<b>Total 39,750.00</b>

**SCHEDULE OF TUITION**

	<b>CNC Program</b>
Registration Fee	100.00
Tuition (per program)	14,150.00
Textbooks & Manuals (call for pricing)*	
Lab Fees	200.00
	<b>Total 14,450.00</b>

**SCHEDULE OF TUITION**

	<b>Motorsports EFI Tuning</b>
Registration Fee	100.00
Tuition (per program)	13,835.00
Textbooks & Manuals (call for pricing)*	
Lab Fees	998.00
	<b>Total 14,933.00</b>

Please visit <http://samtech.edu/information/financial-aid/> for gainful employment disclosures.

SAM Tech reserves the right to change start dates, fees, and course work subject to appropriate procedures and approval by its regulatory bodies.

**2018 ENROLLMENT DATES**

**BLOCK, HEAD, & COMBO PROGRAMS**

ENTRANCE DATE	ENDING DATE		ENTRANCE DATE	ENDING DATE	
January 4, 2018	October 2, 2018	Block Class Only	June 13, 2018	April 2, 2019	Head Class Only
January 8, 2018	October 5, 2018	Head Class Only	July 19, 2018	April 18, 2019	Block Class Only
February 7, 2018	November 8, 2018		August 1, 2018	May 3, 2019	Head Class Only
March 20, 2018	December 18, 2018	Block Class Only	September 5, 2018	June 11, 2019	
March 27, 2018	January 9, 2019	Head Class Only	October 9, 2018	July 29, 2019	
April 30, 2018	February 11, 2019		November 8, 2018	August 27, 2019	
June 4, 2018	March 22, 2019	Block Class Only			

*The above entrance and ending dates are for the Block, Head, & Combo Programs only*

**CNC PROGRAM**

ENTRANCE DATE	ENDING DATE
January 10, 2018	August 20, 2018 AM
May 7, 2018	December 17, 2018 PM
September 6, 2018	April 18, 2019 AM

*The above entrance and ending dates are for the CNC Program only*

**MOTORSPORTS EFI TUNING PROGRAM**

ENTRANCE DATE	ENDING DATE
February 7, 2018	August 28, 2018 PM
June 20, 2018	January 28, 2019 AM
October 10, 2018	May 7, 2019 PM

*The above entrance and ending dates are for the Motorsports EFI Tuning only*

**ASSOCIATE OF APPLIED SCIENCE DEGREE PROGRAM\*\***

ENTRANCE DATE	ENDING DATE	
January 22, 2018	August 23, 2018	**All ending dates subject to change due to entering credits
March 26, 2018	October 18, 2018	
April 30, 2018	November 30, 2018	
June 4, 2018	January 24, 2019	
June 25, 2018	February 15, 2019	
August 27, 2018	April 11, 2019	
October 22, 2018	June 6, 2019	
December 3, 2018	August 2, 2019	

*The above entrance and ending dates are for the General Education Section of the AAS Degree Program only*

**2018 MOTORSPORTS WELDING & SEMINAR DATES\*\*\***

\*\*\*To be determined: Please contact SAM Tech for More Information

**ADMINISTRATION**

Josephine Bautista	Financial Aid Coordinator
Harry Dixon	Admissions Representative
Susie Faerman	Financial Aid Director
John Guyton, Ed.D	General Education Coordinator/Compliance Coordinator
Kelly Hamilton	Bursar/Accounting Manager/VA School Certifying Official
Austin Hayward	Student Services Assistant
Travis Hilger	Student Services Assistant
Kimberly Klevenhagen	Student Services Coordinator/Director of Development & Job Placement/Learning Resource Manager/Alumni Association
Brian Massingill	Admissions Representative/Student Services Assistant/Job Placement Assistant/Alumni Association/Website/Media Tech
Judson Massingill	President/Director of Education
Linda Massingill	CEO/School Executive Director/Administrator
Isamar Monrroy	Administrative Assistant/Learning Resource Assistant/Orientation
Scott Morris	Director of Admissions/Student Services Assistant
Bart Parramore	Admissions Representative
Roxanne Phipps	Administrative Assistant/Accounting Assistant
Esther Quintanilla	Administrative Assistant/Learning Resource Assistant/Orientation
Krystle Salas	Registrar/Orientation

**FACULTY**

Judson Massingill	Instructor – Certified, Specialized Training - ITS, 46 years experience BS, Social Science
Chris Bennett	Instructor – Certified, Specialized Training, 14 years experience AAS in Automotive Engine/Block & Cylinder Head Machining
Shawn Hooper	Instructor – Certified, Specialized Training, 14 years experience AAS in Automotive Engine/Block & Cylinder Head Machining
Jason Haynes	Instructor – Certified, Specialized Training, 13 years experience Multiplatform Advanced Certification in EFI Tuning
Marshall Collins	Instructor – Certified, Specialized Training, 11 years experience AAS in Automotive Engine/Block & Cylinder Head Machining
James Stray	Instructor – Certified, Specialized Training, 11 years experience AAS in Automotive Engine/Block & Cylinder Head Machining, AERA Cylinder Head & Engine Machinist Certified
Jonathan Waitt	Instructor – Certified, Specialized Training, 11 years experience AAS in Automotive Engine/Block & Cylinder Head Machining, Mastercam Instructor Certified
Zack Nelson	Instructor – Certified, Specialized Training, 8 years experience Mastercam Certified

**DRESS CODE**

The goal of the School of Automotive Machinists & Technology is to prepare its students to accept a responsible and professional position in the automotive industry. In addition to technical competence, the potential employer will be highly concerned with finding positive attitudes in regards to appearance, dependability, attendance, a good work ethic, and, of course, safety. To this end, the School of Automotive Machinists & Technology has adopted the following dress code for safety and appearance reasons. Failure to abide by this standard may result in a student being asked to leave. The time missed will be considered an unexcused absence.

**SHIRTS:** SAM Tech uniform shirts must be worn at all times while at school. Shirts must be tucked in.

**PANTS:** All students must wear either blue jeans, cords, or dress slacks. Shorts, military pants or athletic apparel are not acceptable.

**SHOES:** Hard leather shoes or boots must be worn at all times while in school.

Baseball caps are the only hats that can be worn at school. Caps other than those issued by School of Automotive Machinists & Technology must be approved by the administration. Caps must be worn with bill facing forward.

**HAIR**

**LENGTH:** Hair must be cut in such a manner as not to touch the collar of a standard SAM Tech uniform shirt. Hairstyles are at the discretion of the administration.

**MUSTACHES**

**& BEARDS:** Acceptable if neatly trimmed.

**JEWELRY:** Jewelry of any type is not permitted (earrings, body rings, necklaces, etc.)

**SAFETY**

**GLASSES:** Safety glasses required to be worn at all times in all shop/lab areas.

**STUDENT COMPLAINT/GRIEVANCE PROCEDURE:**

Please see School Catalog regarding the School of Automotive Machinists & Technology Student Complaint/Grievance Procedure.

Schools accredited by the Accrediting Commission of Career Schools and Colleges must have a procedure and operational plan for handling student complaints. If a student does not feel that the school has adequately addressed a complaint or concern, the student may consider contacting the Accrediting Commission. All complaints reviewed by the Commission must be in written form and should grant permission for the Commission to forward a copy of the complaint to the school for a response. This can be accomplished by filing the ACCSC Complaint Form. The complainant(s) will be kept informed as to the status of the complaint as well as the final resolution by the Commission. Please direct all inquiries to:

Accrediting Commission of Career Schools & Colleges  
2101 Wilson Blvd., Suite 302  
Arlington, VA 22201  
(703) 247-4212  
www.accsc.org

A copy of the ACCSC Complaint Form is available at the school and may be obtained by contacting Linda Massingill, Executive Director, or online at [www.accsc.org](http://www.accsc.org).

The information in this supplement is true and correct to the best of my knowledge.



Executive Director



# SCHOOL OF AUTOMOTIVE MACHINISTS & TECHNOLOGY

## Supplement B to CATALOG

Number 10

July 1, 2016

### RETURN OF TITLE IV FUNDS POLICY

Students who receive financial assistance from Title IV programs (Federal Pell Grant, Campus-based Programs, Stafford loans, PLUS loans) and withdraw from School prior to completing more than 60% of the payment period are subject to the Return of Title IV Funds requirements of the U.S. Department of Education. The Return of Title IV Funds procedure is as follows:

1. Determine the percentage of the payment period the student completed. For credit hour programs, the law defines this percentage based on calendar days up to and including the student's last date of attendance is divided by the number of days in the payment period.
  - A payment period is 19 semester credit hours for Automotive Engine/Block Machining, Automotive Engine/Cylinder Head Machining and Automotive Engine/Block & Cylinder Head Machining programs.
  - A payment period is 8 semester credit hours for Associate of Applied Science Degree in Automotive Engine/Block & Cylinder Head Machining.
  - A payment period is 9 semester credit hours for Automotive Engine/CNC Machining.
  - A payment period is 10.5 semester credit hours for Motorsports Welding.
  - A payment period is 8.5 semester credit hours for Motorsports EFI Tuning.

The total number of calendar days in the payment period does not include any days in which the student was on an approved leave of absence. In addition, the period does not include breaks of 5 or more days

2. Determine the amount of aid earned by the student. The amount of aid the student earned for the payment period is determined by multiplying the percentage derived from Step 1 by the total amount of Title IV aid that was disbursed or that could have been disbursed as of the student's withdrawal date.
3. Compare the amount earned to the amount disbursed. If the student has a current balance of tuition and/or fees the School would receive the refund before the student. If less aid was disbursed than was earned, the student may receive a post withdrawal disbursement for the difference. If more aid was disbursed than was earned, the difference is refunded back to Title IV programs.
4. Allocate responsibility for returning unearned aid between the School and the student. Students who receive living expenses would be responsible for repayment of any unearned aid. If the student's share of the unearned funds that must be returned are attributed to a Title IV Loan program, then repayment will still be based under the terms and conditions of the promissory note. If the student's share of the unearned funds that must be returned are attributed to a Title IV Grant program, the initial amount to return will be reduced by 50%.
5. Distribute the unearned aid back to the Title IV programs.
6. If a post withdrawal disbursement is due (Box J of the Return to Title IV calculation) the School will notify the student, or parent in case of a PLUS loan, within 30 days. The student or parent will have 14 days to either accept the disbursement in full or a partial portion of the funds. If the student or parent does not respond to the notice in a timely manner, Title IV funds will be returned to the appropriate program. If authorization is received from the student or parent, funds will be disbursed within 120 days.

If grant funds are in the post-withdrawal disbursement, the School will retain the funds without the student's permission for current tuition and fees. If no current tuition and fees are due, the School will send the student the post withdrawal disbursement of grant funds. If the student has other outstanding charges, the School will notify the student of the charges before sending the student any grant funds. Any excess Grant funds will be disbursed to the student within 45 days.

If loan funds are in the post-withdrawal disbursement the School will notify the student, or parent in case of a PLUS loan, of the amount of current tuition and fees and/or outstanding charges due the School and the amount, if any that can be returned to the student or parent. A post withdrawal disbursement of loan funds will not be released to the student or parent unless they authorize current tuition and fees be paid first. If the student or parent declines the loan funds, no loan funds will be applied to current tuition and fees.

### REFUND TIME LINE AND REFUND ALLOCATION-TITLE IV

Any monies due the applicant or student shall be refunded within 45 days of the date that the School determines the student has withdrawn. The date of School determinations shall be the date of formal cancellation by the student or no more than 14 days from the last date of physical attendance. In the case of a student who does not return from an approved leave of absence, the School determination date shall be the earlier of the date of expiration of the leave of absence or the date the student notifies the institution that the student will not be returning.

Refunds will be returned in the following order:

1. Unsubsidized Federal Direct Loans
2. Subsidized Federal Direct Loans
3. Federal PLUS Loans/Direct PLUS Loans
4. Federal Pell Grant Program
5. Federal SEOG Program
6. Other Title IV Programs
7. Other Federal, State, Private or Institutional Assistance
8. The Student

By signing the enrollment agreement, the student authorizes the institution to retain any amount of the refund that would be allocated to Title IV, HEA loan programs. Please be advised that this is only the Return to Title IV refund. Once the school determines the amount of Title IV aid that the school may retain the institution will then calculate the institutional/state/accreditation agencies refund policy.

The information in this supplement is true and correct to the best of my knowledge.



Executive Director