



## Davis Applied Technology College

A UCAT Campus  
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Phone: 593-2500



## Course Descriptions - Machine Tool Technology Catalog Year: 2012

### **BTEC 1121\_ Operating System Fundamentals Vista - 30 Hours**

This course focuses on basic computer operations, including operating system functions and managing programs, directories, files, and data utilizing the Microsoft Windows Vista operating system. This course includes integrating applications, customizing windows, and managing printing operations.

### **DRFT 1045\_ Blueprint Reading - 30 Hours**

This course is designed to teach the basic blueprint reading skills. Standard industrial practices will be applied on one or more industrial drawings. Principles and applications of the following will be used--lettering, orthographic, oblique, isometric, dimensioning, sectioning, and auxiliary views.

### **DRFT 1055\_ Blueprint Reading for Machinists - 15 Hours**

In this course, students will learn to read and interpret mechanical blueprints. Topics include the alphabet of lines, interpreting title block data, reading dimensions, tolerances, and surface finish, and interpreting multiple-view drawings, with sectional, auxiliary and projected views.

### **FUND 0050 Keyboarding Skills - 90 Hours**

This course covers an introduction to the QWERTY keyboard, correct finger placement, and keyboarding techniques. Students will learn to touch type as they complete drills and timed writings. Through practicepractice, students will increase their typing speed and accuracy on a computer keyboard.

### **FUND 0065 Computer Skills - 30 Hours**

Students will learn beginner computer skills in a Windows XP environment. Topics include starting a computer, using a mouse, launching programs, creating, saving and printing documents, surfing the World Wide Web and sending email.

### **FUND 0070 Spelling Skills - 30 Hours**

Students will improve their spelling skills by learning and using phonics and common spelling rules.

### **FUND 0075 Language Skills - 90 Hours**

In this course students will practice and improve their language and writing skills and will gain an understanding of the English language and its correct use in written communication. Topics include sentence structure, parts of speech, grammar and punctuation rules in addition to extending these rules to sentences and paragraphs.

### **FUND 0080 Reading Skills - 90 Hours**

This course will provide students with a foundation in reading skills, build vocabulary, and will provide practice recalling and interpreting information.

### **FUND 0085 Math Skills - 60 Hours**

In this course students will learn to perform all four basic math operations accurately with whole numbers, fractions and decimals. Students will also be introduced to percentage and converting between fractions, decimals and percents.

### **FUND 0090 Study Skills - 30 Hours**

Students will learn to use effective study habits and strategies for remembering information found in their textbooks and heard in class lectures. Students will also learn to use a strategy for reading and taking notes from textbooks, in class, and learn effective strategies for taking the five types of tests most frequently given by teachers.

### **FUND 0091 Davis School District Technical Tutoring - 250 Hours**

Technical tutoring provides designated high school students with individual tracking to improve student success in Davis Applied Technology College courses. Students are provided assistance in study skills, test preparation as well as review of student progress and attendance.

### **MACH 1010 Lathe Operations I - 90 Hours**

Students will learn essential material cutting concepts by setting up and operating a manual lathe. Topics include chuck type workholding devices, cutting tool selection, efficient tool management, speeds and feeds, angles, threads, part production, and inspection.

### **MACH 1020 Vertical Mill Operations I - 90 Hours**

In this course, students will learn essential material cutting concepts by setting-up and operating a manual milling machine. Topics include principles of clamping and locating work pieces, selection of cutting tools and holders, milling speeds and feeds, application of cutting depth, width, and direction, part production, and inspection.

### **MACH 1025 Machinist Math I - 30 Hours**

This course provides students with a brief introduction to the technical mathematics and measuring tools used in machining.

### **MACH 1040 Machinist Math II - 60 Hours**

This course provides students with a working knowledge of technical mathematics used in machining. Topics include fundamentals of algebra, plane geometry, area and volume, trigonometry and compound angles.

### **MACH 1045 Machining Introduction - 60 Hours**

This is an introductory course to basic procedures and machining operations encountered in the machine shop manufacturing industry. Topics include essential safety practices, MSDS, use of basic measuring tools, performing basic layout techniques and applications of bench grinding sawing, feeds and speeds, and basic hole making.

### **MACH 1060 Geometric Dimensioning and Tolerancing I - 60 Hours**

This course teaches students the basic concepts of Geometric Dimensioning and Tolerancing (GD&T). Topics include terminology, planar datums, size datums, and tolerances of size, form and location.

### **MACH 1070 CNC Operations - 240 Hours**

This course provides an introduction to CNC machining. Topics include safety, CNC terminology, preparatory steps to run a CNC program, setup and operation of CNC machines, and part production with given programs.

### **MACH 1080 CAD/CAM Beginning - 60 Hours**

This course provides the fundamentals of CAD/CAM systems. Topics include software operating systems, drawing commands, editing commands, tool path generation, and posting.

### **MACH 2005 Manual CNC Programming - 60 Hours**

This course introduces programming and operation of CNC machines. Students will create CNC programs manually and use them by setting up and operating CNC machines including verification. Part production and inspection is emphasized.

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### **MACH 2010 Bridgeport EZ-TRAK Mill Programming - 30 Hours**

Students will learn the fundamental usage of the Bridgeport EZ-TRAK milling machine and conversational control.

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### **MACH 2015 Introduction to Manual CNC Programming - 30 Hours**

Manual programming teaches a tight discipline and organization in program preparation. The programmer is required to understand programming techniques to the very last detail. In fact, many useful skills acquired from manual programming are directly applied to CAD/CAM programming. This course will train students to visualize tool motions and recognize restricting factors that may be involved for part program creation of a machined part. The student will learn to collect, analyze, process and logically integrate all data collected into a single, cohesive and safe part program. The course will teach part program structure for the creation of machined parts by using G and M code programming, based on the Electronics Industries Alliance and International Standards Organization standard (EIA/ISO).

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### **MACH 2020 Bridgeport EZ-PATH Lathe Programming - 30 Hours**

Students will learn the fundamental usage of the Bridgeport EZ-PATH lathe and conversational control.

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### **MACH 2025 Lathe Operations II - 60 Hours**

This course provides advanced skills to students familiar with CAD/CAM. Topics include design and programming complex 3 dimensional (3D) shapes of molds and components, and surface modeling using tool containment boundaries, plunge points, and runoff surfaces.

### **MACH 2030 Precision Machining - Surface Grinder - 60 Hours**

Students will learn the fundamental concepts of material removal and surface finishes by setting up and operating a surface grinder. Topics include planning, work holding, wheel selection and forming, grinding, maintaining efficient grinding conditions, and inspection.

### **MACH 2035 Vertical Mill Operations II - 60 Hours**

Students will learn advanced skills using the Vertical Mill. These skills are necessary for students interested in working with manual Milling Machines and working in maintenance shops or Job shops.

### **MACH 2040 Electrical Discharge Machine - 60 Hours**

Students will learn the fundamental concepts of material removal and surface finishes by setting up and operating an Electric Discharge Machine. Topics include planning, work holding, electrode manufacturing, machining, maintaining efficient burn conditions, and inspection.

### **MACH 2050 Precision Machining Projects - 90 Hours**

This is an advanced course to allow students to participate in complex projects related to conventional machining as assigned by an Advisor. Course work will vary with the work available and may involve regional industry.

### **MACH 2055 Shop Floor Inspector - 60 Hours**

This course will teach students the skills necessary to inspect parts to industrial standards using optical comparators, coordinate measuring machines, surface plates and accessories, and general measuring tools.

### **MACH 2060 Optical Comparator - 30 Hours**

This course will introduce students to the Optical comparator. Students will learn the purpose and procedure for using the optical comparator in a Machine shop. Students will measure points, lines, circles, and distance for standardized parts provided by the instructor.

### **MACH 2080 Surface Plate Inspection Techniques - 30 Hours**

This course is designed to teach students the basics of inspection using a surface plate. Students will learn how to inspect provided machined parts using the surface plate and surface plate accessories.

### **MACH 2100 Geometric Dimensioning and Tolerancing II (GD&TII) - 60 Hours**

This course applies the concepts learned in GD&T I as well as more complex concepts to projects in the shop. Topics include terminology, planar datums, size datums, and tolerances of size, form and location.

### **MACH 2100 Geometric Dimensioning and Tolerancing II (GD&TII) - 60 Hours**

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### **MACH 2420 CNC Program Applications - 60 Hours**

Students will be given the opportunity to apply the programming skills learned in MACH2015. Students will program a variety of detailed parts to demonstrate they have mastered the ability to create a CNC program.

### **MACH 2520 CAD/CAM Intermediate - 60 Hours**

This course is a continuance of CAD/CAM Beginning, designed to teach intermediate skills of CAD/CAM systems. Topics include 2 ½ D operations, simple indexing, 4th axis machining, and CNC lathe programming.

### **MACH 2540 CAD/CAM Advanced - 60 Hours**

This course provides advanced skills to students familiar with CAD/CAM. Topics include design and programming complex 3 dimensional (3D) shapes of molds and components, and surface modeling using tool containment boundaries, plunge points, and runoff surfaces.

### **MACH 2600 Mazatrol Programming - 30 Hours**

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**MACH 2640 Coordinate Measuring Machine I - 30 Hours**

This course is designed to teach basic skills necessary for using the coordinate measuring machine (CMM) as applicable to dimensional part inspection.

**MACH 2840 Statistical Process Control (SPC) - 30 Hours**

This course is designed to teach the basics of Statistical Process Control (SPC) and how to use it. Topics covered include an introduction to SPC terms, techniques and tools used in the machining industry.

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**MACH 2880 CNC Machining Projects - 120 Hours**

This is an advanced course designed to allow students to participate in complex projects related to CNC machining and programming as assigned by an Advisor. Course work will vary with the work available and may involve regional industry.

**MACH 2905 Practical Applications - 120 Hours**

This course tests the student on the basic knowledge required of a machine tool technician and requires the student to perform live work on the systems and components they have been learning about. The course allows students to become more familiar with working on vehicles, and exposes them to a variety of problems that may not be in the other course materials.

**WKSK 1400\_ Workplace Relations (Program Based) - 60 Hours**

This course will help students develop essential human-relation skills needed to maintain gainful and satisfying employment. This course includes familiarization with problematic areas found in the workforce including, solving problems; understanding relationships and diversity; increasing personal ethics; and developing strong personal, interpersonal, and human relation skills.

**WKSK 1500\_ Job Seeking Skills (Program Based) - 30 Hours**

This course helps prepare students to successfully apply for a job. This course will present essential job-seeking skills needed to find gainful employment including: developing resumes, applications, networking and interview skills.

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