

# Accounting, Automotive Technology, Business, Computer Information Systems, Design and Manufacturing Technologies (DMT), Real Estate

De Anza College  
Date: 01-14-2024

| <b>Applied Technologies</b>  |
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| <b>APRN - Auto. Apprenticeship</b>   |
| <b>AAT_Associate in Arts in Communication Studies 2.0 for Transfer</b> <ul style="list-style-type: none"><li>• Design, express, interpret, and relate verbal and nonverbal messages clearly and confidently to diverse audiences</li><li>• Apply a range of speaking, listening, and collaboration skills in interpersonal, professional, and group settings</li><li>• Utilize appropriate resources and technologies to identify, engage, and critically evaluate various forms of information and discourse across various contexts</li><li>• Develop culturally responsive communication skills necessary to participate as an informed member of a global, multicultural society</li></ul> |
| <b>AUTO - Automotive Technology</b>  |
| <b>AS_Advanced Engine Performance Technology</b> <ul style="list-style-type: none"><li>• Identify the basic electrical circuits and diagnose automotive electrical systems</li><li>• Apply the basic principles of physics as they work in the automotive industry</li><li>• Interpret and analyze automotive ignition, fuel and ignition systems</li><li>• Utilize appropriate diagnostic equipment, documentation and troubleshooting principles on various automotive systems</li></ul>   |
| <b>AS_Automotive Chassis and Powertrain</b> <ul style="list-style-type: none"><li>• Perform undercar inspections and repair suspension, steering, hydraulic and active braking systems</li><li>• Demonstrate overall operation of an automotive transmission and differential as it relates to service, diagnosis and repair</li><li>• Identify basic electrical circuits and diagnose automotive electrical circuit systems</li><li>• Apply the basic principles of physics as they work in the automotive industry</li><li>• Use written and oral communication skills to write repair orders and speak with customers</li></ul>   |
| <b>AS_Automotive Chassis Technology</b> <ul style="list-style-type: none"><li>• Perform undercar inspections and repair suspension, hydraulic and active braking systems</li><li>• Diagnose vehicle alignment concerns</li><li>• Identify the basic electrical circuits and diagnose automotive electrical systems</li><li>• Apply the basic principles of physics as they work in the automotive industry</li></ul>   |
| <b>AS_Automotive Engine Performance</b> <ul style="list-style-type: none"><li>• Diagnose basic electrical, engine performance and emissions systems</li><li>• Identify basic electrical circuits and diagnose automotive electrical circuit systems</li><li>• Apply the basic principles of physics as they work in the automotive industry</li></ul>  |
| <b>AS_Automotive Machining and Engine Repair</b> <ul style="list-style-type: none"><li>• Demonstrate an application of four-stroke engine theory, basic safe machining practices, estimates and repair orders and engine assembly</li><li>• Identify basic electrical circuits and diagnose automotive electrical circuit systems</li><li>• Apply the basic principles of physics as they work in the automotive industry</li><li>• Demonstrate knowledge of the job procurement process and hazardous materials handling in the automotive industry</li></ul>   |
| <b>AS_Automotive Machining and Engine Repair Technology</b> <ul style="list-style-type: none"><li>• Demonstrate an understanding of four-stroke engine theory, basic safe machining practices, estimates and repair orders, and engine</li></ul>   |

assembly

- Identify the basic electrical circuits and diagnose automotive electrical systems
- Apply the basic principles of physics as they work in the automotive industry

### **AS\_Automotive Powertrain Technology**

- Demonstrate knowledge of the overall operation of an automotive transmission and differential
- Identify the basic electrical circuits and diagnose automotive electrical systems
- Apply the basic principles of physics as they work in the automotive industry

### **COAA\_Advanced Engine Performance Technology**

- Identify the basic electrical circuits and diagnose automotive electrical systems
- Apply the basic principles of physics as they work in the automotive industry
- Interpret and analyze automotive ignition, fuel and ignition systems
- Utilize appropriate diagnostic equipment, documentation and troubleshooting principles on various automotive systems

### **COAA\_Automotive Chassis and Powertrain**

- Perform undercar inspections and repair suspension, steering, hydraulic and active braking systems
- Demonstrate overall operation of an automotive transmission and differential as it relates to service, diagnosis and repair
- Identify basic electrical circuits and diagnose automotive electrical circuit systems
- Apply the basic principles of physics as they work in the automotive industry
- Use written and oral communication skills to write repair orders and speak with customers

### **COAA\_Automotive Chassis Technology**

- Perform undercar inspections and repair suspension, hydraulic and active braking systems
- Diagnose vehicle alignment concerns
- Identify the basic electrical circuits and diagnose automotive electrical systems
- Apply the basic principles of physics as they work in the automotive industry

### **COAA\_Automotive Engine Performance**

- Diagnose basic electrical, engine performance and emissions systems
- Identify basic electrical circuits and diagnose automotive electrical circuit systems
- Apply the basic principles of physics as they work in the automotive industry

### **COAA\_Automotive Machining and Engine Repair**

- Demonstrate an application of four-stroke engine theory, basic safe machining practices, estimates and repair orders and engine assembly
- Identify basic electrical circuits and diagnose automotive electrical circuit systems
- Apply the basic principles of physics as they work in the automotive industry
- Demonstrate knowledge of the job procurement process and hazardous materials handling in the automotive industry

### **COAA\_Automotive Machining and Engine Repair Technology**

- Demonstrate an understanding of four-stroke engine theory, basic safe machining practices, estimates and repair orders, and engine assembly
- Identify the basic electrical circuits and diagnose automotive electrical systems
- Apply the basic principles of physics as they work in the automotive industry

### **COAA\_Automotive Powertrain Technology**

- Demonstrate knowledge of the overall operation of an automotive transmission and differential
- Identify the basic electrical circuits and diagnose automotive electrical systems
- Apply the basic principles of physics as they work in the automotive industry

**COA\_Advanced Automotive Technology**

- Demonstrate understanding of general advanced automotive electrical/environmental concepts as they relate to automotive service, diagnosis and repair

**COA\_Advanced Engine Performance Technology**

- Utilize the appropriate diagnostic equipment, documentation and troubleshoot principles on various automotive systems

**COA\_Automotive Chassis Technology**

- Perform undercar inspections and repair suspension, steering, hydraulic and active braking systems

**COA\_Automotive General Service Technician**

- Perform basic engine service, cooling system maintenance and battery testing
- Perform tire service including balancing, disc and drum brake service, and basic front and rear suspension service

**COA\_Automotive Machining and Engine Repair Technology**

- Demonstrate an understanding of four-stroke engine theory, basic safe machining practices and engine assembly

**COA\_Automotive Powertrain Technology**

- Demonstrate knowledge of the overall operation of an automotive transmission and differential

**COA\_Basic Engine Performance Technology**

- Identify the basic electrical circuits and diagnose automotive electrical systems
- Apply the basic principles of physics as they work in the automotive industry

**COA\_Intermediate Engine Performance Technology**

- Interpret and analyze automotive ignition, fuel and ignition systems

**COA\_Smog Technician**

- Perform a complete California state smog inspection

**COCL\_Advanced Engine Performance Technology**

- Utilize the appropriate diagnostic equipment, documentation and troubleshoot principles on various automotive systems

**COCL\_Alternative Fuels Technology**

- Understand and diagnose body-electrical systems, including electrical accessories

**COCL\_Automotive Chassis Technology**

- Perform undercar inspections and repair suspension, steering, hydraulic and active braking systems

**COCL\_Automotive Machining and Engine Repair Technology**

- Demonstrate an understanding of four-stroke engine theory, basic safe machining practices and engine assembly

**COCL\_Automotive Powertrain Technology**

- Demonstrate knowledge of the overall operation of an automotive transmission and differential

**COCL\_Basic Engine Performance Technology**

- Identify the basic electrical circuits and diagnose automotive electrical systems
- Apply the basic principles of physics as they work in the automotive industry

**COCL\_General Service Technician**

- Perform basic engine service, cooling system maintenance and battery testing
- Perform tire service including balancing, disc and drum brake service, and basic front and rear suspension service

**COCL\_Intermediate Engine Performance Technology**

- Interpret and analyze automotive ignition, fuel and ignition systems

**COCL\_Smog Technician**

- Perform a complete California state smog inspection

**DMT - Design and Mfg. Tech.****AS\_CNC Machinist**

- Construct and inspect machined projects using CNC equipment with word address programs
- Apply geometric dimensioning and tolerance standards to inspect drawings and inspect parts using a coordinate measuring machine
- Differentiate and analyze the materials and processes used in manufacturing
- Produce tool paths with constructed and imported geometry using Mastercam
- Apply advanced machining skills by independently contracting projects

**AS\_CNC Research and Development Machinist**

- Construct and inspect machined projects using conventional and CNC equipment using word address programs
- Apply geometric dimensioning and tolerance standards to inspect drawings and inspect parts using a coordinate measuring machine
- Differentiate and analyze the materials and processes used in manufacturing
- Analyze, construct and inspect diagrams to repair physical and electrical components
- Produce tool paths with constructed and imported geometry using Mastercam

**AS\_Product Model Making**

- Construct and inspect machined projects using conventional and CNC equipment that uses word address programs
- Design and construct three-dimensional objects
- Create part geometry using SolidWorks or Creo/Pro Engineer CAD software
- Differentiate and analyze the materials and processes used in manufacturing
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**COA\_Additive Manufacturing Technology: 3D Design and Production**

- Apply knowledge of additive manufacturing (AM)/3D printing to analyze, compare, and utilize multiple 3D printing processes and materials to design, prototype, and fabricate components and products for industry
- Analyze AM/3D printing design and production considerations to evaluate and determine the optimal processes and materials to meet industry standards and client specifications

- Demonstrate the skills required for each of the different roles within an AM product development and production facility: CAD designer, AM technician, applications engineer, and quality control
- Produce prototypes and components for fabrication utilizing Design for Additive Manufacturing (DfAM) concepts based on current industry standards and practices

### **COA\_CNC Machinist**

- Setup and operate conventional and CNC machines safely
- Construct and inspect machined projects using conventional and CNC equipment
- Construct word address programs to machine projects

### **COA\_CNC Programming - CAD/CAM**

- Design and construct 2D, 3D, lathe, horizontal and multi-axis part geometry
- Select tools and produce tool paths with constructed and imported geometry
- Verify tool paths and create word address programs for CNC machines

### **COA\_Computer Aided Design - Mechanical**

- Solve basic and complex drafting and design application problems using industry standard two-dimensional and three-dimensional software and feature-based parametric design software
- Apply the fundamentals of computer-aided drafting and design to disciplines such as architectural, mechanical and industrial design and engineering
- Utilize industry standard microcomputer CAD software and the hardware, operating systems and peripherals used to facilitate it
- Create engineering notes and scaled drawings using ASME or International Standards Organization (ISO) specifications
- Satisfy a prospective employer with quality technical expertise in the use of two CAD tools (SolidWorks and Creo) at a level commensurate with entry- to mid-level usage in industry design and engineering

### **COA\_Quality Control Technician**

- Analyze, construct and inspect assigned machined projects using the introductory principles of machining
- Demonstrate the ability to interpret multi-view drawings and prints
- Demonstrate the ability to utilize common gauges, measurement instruments and calibration tools
- Apply geometric dimensioning and tolerancing standards to interpret drawings and inspect manufactured parts
- Demonstrate basic operation of the coordinate measuring machine (CMM) to inspect manufactured parts
- Demonstrate a working knowledge of calibration systems, inspection methodology, statistical process control indices and quality sampling techniques

## **Business/Computer Science**

### **ACCT - Accounting**

#### **AA\_Accounting**

- Demonstrate knowledge of double-entry accounting within financial and cost accounting systems for various business organizations
- Prepare financial statements and reports and analyze these statements to evaluate the financial structure of a firm and describe fundamental business concepts, while identifying ethical issues in accounting
- Identify and assess the theory and reporting differences between International Reporting Standards and U.S. Generally Accepted Accounting Principles
- Evaluate events which require research in the professional literature and formulate an organized, concise approach to a solution

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## BUS - Business

### AA\_Business Administration

- Explain the interactions among the primary functions within business (such as marketing, management, operations, human resources, accounting, finance and business law) to achieve organizational goals

### AA\_Management

- Analyze management issues, develop solutions and compare leadership styles for a given organizational environment

### AA\_Marketing Management

- Develop an appropriate marketing plan for an organization in a given business environment

### AST\_Associate in Science in Business Administration for Transfer 2.0

- Explain the interactions among the primary functions within business (such as marketing, management, operations, human resources, accounting, finance and business law) to achieve organizational goals

### COA\_Business Administration

- Distinguish and explain the primary functions within business such as management, human resources, business law, operations, marketing, accounting and finance

### COA\_Business Information Worker

- Use computer input devices to properly and efficiently create and edit documents in word processing and spreadsheet programs, and in electronic communications systems such as email
- Work effectively, respectfully, ethically and professionally with people of diverse ethnic and cultural backgrounds, and diverse social affiliations and personalities, filling a variety of organizational roles
- Communicate effectively and professionally in business situations through writing, speaking and electronic media

### COA\_Entrepreneurship

- Critically evaluate business plans and describe the processes required to start, operate and measure the results of a small business

### COA\_Management

- Identify management issues and apply solutions and leadership styles

### COA\_Management Information Systems Support

- Communicate effectively with business professionals, understand fundamental programming concepts, and track computer systems problems related to a variety of technical areas, such as software applications, database management systems, web sites and comput

### COA\_Marketing Management

- Identify and distinguish the elements of the marketing mix for an organization in a given business environment

## CIS - Computer Info. Systems

### AA\_Business Programming

- Analyze business requirements and architect, design and develop distributed business applications that meet these requirements to the level of user interfaces, algorithms, design patterns, security and storage strategies

### AA\_Cybersecurity

- Describe network components, protocols, architectures and the application of current communication and networking technologies
- Define properties of all modern network types
- Determine, at a more advanced level, how to detect and stop security breaches in network and application layer
- Help organizations increase awareness of security policies and procedures

### AA\_Database Development Practitioner

- Demonstrate requirement analysis, design and coding skills in languages commonly used in data management with large scale databases
- Apply skills for business analysis to convert data into information in real time, allowing business owners to make effective just-in-time decisions

### AA\_Network Administration

- Use UNIX/LINUX utilities and shell features for file manipulation and communication
- Create algorithms and code, document, debug and test shell scripts that interact with the UNIX/LINUX OS
- Create algorithms to solve introductory-level problems using C programming and shell scripting or Perl languages
- Identify networking components and protocols in the context of architectures and technologies for LAN, WAN and Internet networks

**AA\_Network Programming**

- Design solutions for advanced network problems creating distributed programs using Transmission Control Protocol and Internet Protocol
- Create algorithms and code, document, debug and test advanced-level C programs using multiple source and header files
- Use UNIX/LINUX utilities and shell features for file manipulation and communication

**AA\_Project Management Practitioner**

- Demonstrate skills in initiating, planning, execution and control of a project with mindfulness to scope, quality, budget and resources
- Demonstrate skills with technical tools for effective project management
- Apply skills for business analysis, program management or portfolio management in real-world projects

**AA\_Systems Programming**

- Create a design, implement and debug solutions for computing systems of different levels of complexity using C and C++
- Create, design, implement and debug solutions for embedded systems such as 8086/ IA32 processor using Assembly Language
- Use UNIX/LINUX utilities and shell features for file manipulation and communication

**AST\_Associate in Science in Computer Science for Transfer**

- Create, design, implement and debug solutions for computing systems of different levels of complexity using an object orientated language
- Create, design, implement and debug solutions for low-level systems using assembly language

**COAA\_Business Programming**

- Analyze business requirements and architect, design and develop distributed business applications that meet these requirements to the level of user interfaces, algorithms, design patterns, security and storage strategies

**COAA\_Cybersecurity**

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- Define properties of all modern network types
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- Detect and stop security breaches in network and application layers
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### **COA\_Database Development Practitioner**

- Prepare and review a database design that includes logical and system representations
- Design, code and debug SQL and PL/SQL programs
- Apply performance tuning techniques to large-scale database applications
- Create, design and debug intermediate level programs with basic C programming language
- Create a database that is optimized to meet defined technical requirements

### **COA\_Information Technology Technical Support**

- Perform IT support tasks including computer assembly, setting up wireless networking, installing programs
- Configure permissions and file systems, and provide for security on systems using Linux system, Windows system and Domain Name Systems
- Interact with users to diagnose and debug and where needed develop appropriate documentation to support the user

### **COA\_Network Administration**

- Identify computer hardware and networking components in the context of micro computers and various types of network operating systems, architectures and protocols
- Develop and present a business improvement plan using the business decision making model and utilizing software applications in word processing, spreadsheets or databases

### **COA\_Network Basics**

- Create algorithms to solve introductory-level problems using C programming language through the stages of coding, documenting, debugging, reading and testing with various tools
- Identify networking components and protocols in the context of architectures and technologies for LAN, WAN and Internet networks

### **COA\_Programming in C/C++**

- Read, analyze and explain advanced C/C++ programs
- Design solutions for advanced problems using appropriate design methodology incorporating advanced programming constructs
- Create algorithms and code, document, debug and test advanced level C/C++ programs using multiple source and header files

### **COA\_Programming in Java**

- Read, analyze and debug code using Core Java
- Design solutions using object-oriented programming constructs and advanced concepts in the Java Development Kit
- Design web applications using a three-tier architecture and applying advanced concepts for Java Enterprise Edition
- Design Java programs for the Android platform
- Create, design and debug advanced-level programs with Java language

### **COA\_Programming in Perl**



- Read, analyze and explain intermediate-level C programs
- Design solutions for intermediate-level problems using appropriate design methodology incorporating intermediate programming constructs
- Create algorithms and code, document, debug and test intermediate-level C programs
- Use the UNIX/LINUX Operating System utilities and shell features for basic file manipulation, networking and communication
- Design, code, document, analyze, debug and test advanced-level Perl programs that include object-oriented Perl modules and access to database, TCP/IP and system processes

### **COA\_Programming in Python**

- Create algorithms, code, document, debug and test Python programs that include Python modules for database, networking, graphics and extensions
- Read and analyze Python programs

### **COA\_Project Management Practitioner**

- Manage projects by applying project management theory as defined by the Project Management Institute's (PMI) Project Management Book of Knowledge (PMBOK)
- Lead the creation of a project plan for an organization's large-scale project with a large budget
- Apply risk management techniques to a project to balance scope, quality, budget, scheduling and team morale
- Write a vendor solicitation plan and use a collaborative approach for selecting vendors
- Successfully manage a vendor through a project's completion while providing all project participants with a clear picture of scope, quality, budget and schedule

### **COA\_UNIX/LINUX Operating System**

- Use UNIX/LINUX utilities and shell features for file manipulation, job control and communication
- Create algorithms and code, document, debug and test shell scripts that interact with the UNIX/LINUX Operating System

### **COA\_Visual Basic Programming**

- Develop and present a plan for improving a business using the business decision making model utilizing hardware and software applications such as word processing, spreadsheets or databases
- Design, create and debug an application incorporating class modules, bas modules, multiple forms and database updating
- Design, create and debug a Web application using ASP.NET 3.5

### **COA\_Web Development**

- Create algorithms and code, document, debug and test introductory-level programs in a high-level programming language
- Create web pages using Extensible Hypertext Markup Language (XHTML), Cascading Style Sheets (CSS), JavaScript and the Document Object Model (DOM), and demonstrate how they interact together within a web document

### **COCL\_Business Software Applications**

- Create complex business documents using word processing, spreadsheets and database
- Design brochures and graphics with Photoshop
- Microsoft Windows setup and file management
- Optimize workflow with cloud file sharing
- Protect computers for malware, scams and exploitation
- Identify and stop security vulnerabilities

### **COCL\_Information Technology Technical Support**

- Perform IT support tasks including computer assembly, setting up wireless networking, installing programs
- Configure permissions and file systems, and provide for security on systems using Linux system, Windows system and Domain Name Systems
- Interact with users to diagnose and debug and where needed develop appropriate documentation to support the user

### **COCL\_Introduction to Computer Science**

- Use the Unix/Linux Operating System utilities and shell features for basic file manipulation, networking, and communication

- Design, code, document, analyze, debug, and test introductory level Python programs

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**REST - Real Estate**

**AA\_ Real Estate**

- Demonstrate knowledge of how real property is described, acquired, appraised, financed, encumbered and leased and how title to real property is held in California
- Demonstrate knowledge of the risks, returns, legal issues and ethical issues involved in the purchase, holding and sale of California real estate
- Qualify to take the California Department of Real Estate salesperson examination

**COA\_ Real Estate**

- Demonstrate knowledge of how real property is described, acquired, appraised, financed, encumbered and leased and how title to real property is held in California
- Demonstrate knowledge of the risks, returns, legal issues and ethical issues involved in the purchase, holding and sale of California real estate
- Qualify to take the California Department of Real Estate salesperson examination

**COCL\_ Real Estate Salesperson**

- Demonstrate knowledge of how real property is described, acquired, appraised, financed, leased and how title to real property is held in California
- Demonstrate knowledge of the risks, returns, legal issues and ethical issues involved in the purchase, holding and sale of California real estate
- Be prepared and qualified to sit for the California Department of Real Estate salesperson examination