

# COURSE LISTINGS

## Accounting

### **ACCT 1A Financial Accounting I 4 Units**

*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 11.*

*Five hours lecture.*

The primary objective of this course is to help students learn how accounting meets the information needs of various users by developing and communicating information that is used in decision-making. Accordingly, the expected student outcome is the demonstration that the student can read, analyze and interpret external financial statements.

(ACCT 1A + ACCT 1B = CAN BUS 2) (ACCT 1A + 1B + 1C = CAN BUS SEQ A)

### **ACCT 1B Financial Accounting II 4 Units**

*Prerequisite: Accounting 1A.*

*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 11.*

*Five hours lecture.*

The primary objective of this course is to help students learn how accounting meets the information needs of various users by developing and communicating information that is used in decision-making. Accordingly, the expected student outcome is the demonstration that the student can read, analyze and interpret external financial statements.

(ACCT 1A + ACCT 1B = CAN BUS 2) (ACCT 1A + 1B + 1C = CAN BUS SEQ A)

### **ACCT 1C Managerial Accounting 4 Units**

*Prerequisite: Accounting 1B.*

*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 11.*

*Five hours lecture.*

Student will study the role of management accounting information in organizations for operational control, product and customer costing, and performance measurement.

(CAN BUS 4) (ACCT 1A + 1B + 1C = CAN BUS SEQ A)

### **ACCT 51A Intermediate Accounting 4 Units**

*Prerequisite: Accounting 1C.*

*Five hours lecture.*

Principles, control, and theory of accounting for assets, financial statements, cash and cash flows, receivables, inventories, plant and equipment, intangible assets.

### **ACCT 51B Intermediate Accounting 4 Units**

*Prerequisite: Accounting 51A.*

*Five hours lecture.*

Principles, control, and theory of accounting for liabilities and equities, corporations, accounting changes, statements from incomplete records, price level and fair-value accounting.

### **ACCT 52 Advanced Accounting 5 Units**

*Advisory: Accounting 51B.*

*Five hours lecture.*

The Advanced Accounting course presents financial accounting theories and practices related to business combinations and consolidated financial reporting. This includes the development of complex business structures and forms of business combinations; consolidated financial reporting for intercorporate acquisitions and operations; and the accounting for transactions of affiliated companies. The course also includes accounting and reporting issues in the multinational business environment. Finally, accounting theory and practice related to the formation, operation and liquidation of partnerships is covered.

### **ACCT 58 Auditing 4 Units**

*Prerequisite: Accounting 1C.*

*Four hours lecture.*

Procedures and practices used in the verification of accounting records and financial statements; preparation of audit working papers.

### **ACCT 64 Payroll and Business Tax Accounting 3 Units**

*Prerequisite: Accounting 1A or 60.*

*Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Mathematics 200 or 210.*

*Three hours lecture.*

Fundamentals of payroll accounting using manual and computerized accounting systems. Theoretical and practical aspects of payroll accounting and reporting. Course includes Federal and California payroll tax rules and forms.

### **ACCT 66 Cost Accounting 5 Units**

*Prerequisite: Accounting 1B.*

*Five hours lecture.*

Procedures, practices, and fundamentals used by accountants when costing products or services, evaluating and measuring performances, and reporting results to users of accounting information.

### **ACCT 67A Federal Income Tax 4 Units**

*(Formerly Accounting 67.)*

*Advisory: Accounting 1A or 60 (may be taken concurrently); English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*

*(Also listed as Business 67A. Student may enroll in either department, but not both, for credit.)*

*Four hours lecture.*

A study of current federal income tax law and procedures for preparing an individual's tax return.

### **ACCT 67B Advanced Individual Income Tax: California Emphasis 4 Units**

*(Formerly Accounting 68A.)*

*Prerequisite: Accounting 67A or Business 67A.*

*Advisory: Accounting 1A or 60; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*

*(Also listed as Business 67B. Student may enroll in either department, but not both, for credit.)*

*Four hours lecture.*

Advanced study of current federal income tax law and California income tax law as it relates to individuals.

### **ACCT 68 Advanced Tax Accounting 4 Units**

*(Formerly Accounting 68B.)*

*Prerequisite: Accounting 67B.*

*Advisory: Accounting 1A or 60; Mathematics 101 or 112; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*

*Four hours lecture.*

A study of current federal and state income tax law as it relates to corporations, partnerships, estates, trusts, and gift taxes. California tax law differences will be highlighted.

### **ACCT 70 Budgeting and Planning 5 Units**

*Prerequisite: Accounting 1C.*

*Five hours lecture.*

The role of budgeting and planning as useful tools for monitoring, managing, and evaluating operational performance of an entity.

### **ACCT 75 Accounting for Government and Nonprofit Entities 5 Units**

*Prerequisite: Accounting 1C.*

*Five hours lecture.*

Presents the characteristics and principles of the financial policies and procedures followed by state, county and municipal governments, as well as public and private universities and hospitals, and certain nonprofit organizations. Emphasizes the importance to governmental agencies of properly discharging their responsibilities to taxpayers. These responsibilities include the proper accounting for and budgeting of tax and related revenues and expenditures. Emphasis will also be placed on the importance to nonprofit entities of meeting the financial reporting and management needs of various stakeholders such as donors, service providers and recipients, community members, and regulatory agencies. Funds, fund accounting, and the newest GASB and FASB pronouncements relating to accounting for governmental and nonprofit entities will also be covered.

<b>ACCT 76</b>	<b>Nonprofit Management Control</b>	<b>5 Units</b>	<b>ACCT 100G</b>	<b>Open Accounting Laboratory for Accounting 1A</b>	<b>1/2 Unit</b>
<i>Advisory: Accounting 1C.</i>			<i>Corequisite: Accounting 100G students must also enroll in Accounting 1A.</i>		
<i>Five hours lecture.</i>			<i>One and one-half hours laboratory.</i>		
Presents theories and practices of fiscal and management control in nonprofit organizations. Includes management control principles as related to nonprofit financial statements as well as the utilization of cost accounting techniques in the nonprofit sector. Covers control system elements such as strategic planning, budgeting, operational control, output measurement, performance reporting, and program evaluation. Relates nonprofit management control to the broader organizational context.			<i>Pass-No Pass (P-NP) course.</i>		
			Use of the facilities of the computer laboratory to solve problems related to the associated accounting course.		
<b>ACCT 86</b>	<b>Computer Accounting Systems</b>	<b>5 Units</b>	<b>ACCT 100H</b>	<b>Open Accounting Laboratory for Accounting 1B</b>	<b>1/2 Unit</b>
<i>Prerequisite: Accounting 1A.</i>			<i>Corequisite: Accounting 100H students must also enroll in Accounting 1B.</i>		
<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.</i>			<i>One and one-half hours laboratory.</i>		
<i>(Also listed as Computer Information Systems 86. Student may enroll in either department, but not both, for credit.)</i>			<i>Pass-No Pass (P-NP) course.</i>		
<i>Five hours lecture, one additional hour to be arranged.</i>			Use of the facilities of the computer laboratory to solve problems related to the associated accounting course.		
Fundamentals of computerized accounting using integrated general ledger software packages and electronic spreadsheet software. Conversion of a manual system to a computer system.			<b>ACCT 100I</b>	<b>Open Accounting Laboratory for Accounting 1C</b>	<b>1/2 Unit</b>
<b>ACCT 87AH</b>	<b>Computerized Accounting Programs (Peachtree - Windows)</b>	<b>2 Units</b>	<i>Corequisite: Accounting 100I students must also enroll in Accounting 1C.</i>		
<i>Prerequisite: Accounting 1A.</i>			<i>One and one-half hours laboratory.</i>		
<i>Four hours lecture-laboratory.</i>			<i>Pass-No Pass (P-NP) course.</i>		
Introduction to computerized accounting for service industry. Applications include general ledger setup, accounts payable, accounts receivable and payroll. Course will take advantage of new accounting software being used in industry.			Use of the facilities of the computer laboratory to solve problems related to the associated accounting course.		
<b>ACCT 87AI</b>	<b>Computerized Accounting Programs (Quickbooks)</b>	<b>2 Units</b>	<b>ACCT 100J</b>	<b>Open Accounting Laboratory for Accounting 86</b>	<b>1/2 Unit</b>
<i>Prerequisite: Accounting 1A.</i>			<i>Corequisite: Accounting 100J students must also enroll in Accounting 86.</i>		
<i>Four hours lecture-laboratory.</i>			<i>One and one-half hours laboratory.</i>		
Introduction to computerized accounting for service industry. Applications include general ledger setup, accounts payable, accounts receivable and payroll. Course will take advantage of new accounting software being used in industry.			<i>Pass-No Pass (P-NP) course.</i>		
			Use of the facilities of the computer laboratory to solve problems related to the associated accounting course.		
<b>ACCT 87AJ</b>	<b>Computerized Accounting Programs (Quickbooks)</b>	<b>2 Units</b>	<b>ACCT 100K</b>	<b>Open Accounting Laboratory for Accounting 51A</b>	<b>1/2 Unit</b>
<i>Prerequisite: Accounting 1A.</i>			<i>Corequisite: Accounting 100K students must also enroll in Accounting 51A.</i>		
<i>Four hours lecture-laboratory.</i>			<i>One and one-half hours laboratory.</i>		
Introduction to computerized accounting for service industry. Applications include general ledger setup, accounts payable, accounts receivable and payroll. Course will take advantage of new accounting software being used in industry.			<i>Pass-No Pass (P-NP) course.</i>		
			Use of the facilities of the computer laboratory to solve problems related to the associated accounting course.		
<b>ACCT 88</b>	<b>Excel Spreadsheets for Accounting</b>	<b>2 Units</b>	<b>ACCT 100M</b>	<b>Open Accounting Laboratory for Accounting 58</b>	<b>1/2 Unit</b>
<i>Advisory: Accounting 1A or 86; Computer Applications and Office Systems 93AH, or 93AK, or 104L; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.</i>			<i>Corequisite: Accounting 100M students must also enroll in Accounting 58.</i>		
<i>Two hours lecture.</i>			<i>One and one-half hours laboratory.</i>		
Fundamentals of electronic spreadsheets using Microsoft Excel software. Concentration on solving accounting problems and completing accounting projects with Excel.			<i>Pass-No Pass (P-NP) course.</i>		
			Use of the facilities of the computer laboratory to solve problems related to the associated accounting course.		
<b>ACCT 97G-V</b>	<b>Topics in Accounting</b>	<b>1/2 Unit</b>	<b>ACCT 100N</b>	<b>Open Accounting Laboratory for Accounting 66</b>	<b>1/2 Unit</b>
<b>ACCT 97WG-WZ</b>		<b>1 Unit</b>	<i>Corequisite: Accounting 100N students must also enroll in Accounting 66.</i>		
<b>ACCT 97XG-XV</b>		<b>2 Units</b>	<i>One and one-half hours laboratory.</i>		
<b>ACCT 97YG-YV</b>		<b>3 Units</b>	<i>Pass-No Pass (P-NP) course.</i>		
<b>ACCT 97ZG-ZV</b>		<b>4 Units</b>	Use of the facilities of the computer laboratory to solve problems related to the associated accounting course.		
<i>Prerequisite: Background or experience in accounting appropriate to topic, or consent of instructor.</i>			<b>ACCT 100P</b>	<b>Open Accounting Laboratory for Accounting 67</b>	<b>1/2 Unit</b>
<i>One hour lecture for each unit of credit.</i>			<i>Corequisite: Accounting 100P students must also enroll in Accounting 67.</i>		
Various topics in accounting that are current and workplace related.			<i>One and one-half hours laboratory.</i>		
<b>ACCT 98U</b>	<b>Internship, Business/Computer Systems Division</b>	<b>1 Unit</b>	<i>Pass-No Pass (P-NP) course.</i>		
<b>ACCT 98V</b>		<b>2 Units</b>	Use of the facilities of the computer laboratory to solve problems related to the associated accounting course.		
<b>ACCT 98W</b>		<b>3 Units</b>	<b>ACCT 100Q</b>	<b>Open Accounting Laboratory for Accounting 68A</b>	<b>1/2 Unit</b>
<b>ACCT 98X</b>		<b>4 Units</b>	<i>Corequisite: Accounting 100Q students must also enroll in Accounting 68A.</i>		
<b>ACCT 98Y</b>		<b>5 Units</b>	<i>One and one-half hours laboratory.</i>		
<b>ACCT 98Z</b>		<b>6 Units</b>	<i>Pass-No Pass (P-NP) course.</i>		
<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.</i>			Use of the facilities of the computer laboratory to solve problems related to the associated accounting course.		
<i>(Also listed as Business 98U-Z, Computer Applications and Office Systems 98U-Z, and Computer Information Systems 98U-Z. Student may enroll in only one department for credit.)</i>			<b>ACCT 100R</b>	<b>Open Accounting Laboratory for Accounting 68B</b>	<b>1/2 Unit</b>
<i>Four hours laboratory per unit of supervised internship in an authorized office or agency.</i>			<i>Corequisite: Accounting 100R students must also enroll in Accounting 68B.</i>		
<i>(Any combination of Accounting 98U-Z, Business 98U-Z, Computer Applications and Office Systems 98U-Z, and Computer Information Systems 98U-Z may be taken up to six times, not to exceed 18 units, for credit. During each internship, students will be placed at different employer locations, different working environments, and/or given different assignments within the same company or department--thus providing the students with various opportunities to learn different skills. Students may repeat the same internship location and working environment if the student, employer, and instructor believe it would provide the student with increased work experience.)</i>			<i>One and one-half hours laboratory.</i>		
Off-campus supervised experiential education/internship for Business/Computer Systems Division students in research or business office environments related to student's major. Practical application of knowledge, skills and abilities acquired in student's major. Opportunity for additional hands-on training. Exposure to varied corporate, state and federal protocols, methodologies and practices in a professional environment.			<i>Pass-No Pass (P-NP) course.</i>		
			Use of the facilities of the computer laboratory to solve problems related to the associated accounting course.		
<b>ACCT 105</b>	<b>Basic Financial Accounting Procedures</b>	<b>1 Unit</b>	<i>Advisory: Mathematics 200 or 210, and Reading 200 or Language Arts 200.</i>		
<i>Corequisite: Accounting 105 students must also enroll in Accounting 1A.</i>			<i>Two hours lecture-laboratory.</i>		
Procedural aspects of accounting including the accounting equation, analysis of business transactions, debit and credit rules, and aspects of the accounting cycle.					

**ACCT 105A Basic Financial Accounting Procedures I 1 Unit**  
*Prerequisite: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Mathematics 200 or 210.*  
*Corequisite: Accounting 105A students must also enroll in Accounting 1A or 60.*  
*Two hours lecture-laboratory.*  
 Procedural aspects of accounting including the accounting equation, analysis of business transactions, debit and credit rules, and aspects of the accounting cycle.

**ACCT 105B Basic Financial Accounting Procedures II 1 Unit**  
*Prerequisite: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Mathematics 200 or 210.*  
*Corequisite: Accounting 105B students must also enroll in Accounting 1B.*  
*Two hours lecture-laboratory.*  
 Corporate finance and investment aspects of accounting including both equity and debt financing instruments used in US capital market. Analysis and interpretation of corporate financial statements, assessment of cash flow and analysis of a statement of cash flows, and recording and measuring of operating assets in a business entity.

**ACCT 105C Basic Managerial Accounting Procedures 1 Unit**  
*Prerequisite: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Mathematics 200 or 210.*  
*Corequisite: Accounting 105C students must also enroll in Accounting 1C.*  
*Two hours lecture-laboratory.*  
 Managerial/operational/behavioral aspects of accounting including the basic cost terms and concepts. Product costing systems, cost control systems, cost management techniques, cost behavior patterns and estimation, cost-volume-profit analysis, operational performance measures, standard costing systems, and quality costs.

**ACCT 107 Certified Bookkeeper Review 2 Units**  
*Prerequisite: Accounting 1A.*  
*Two hours lecture.*  
 Provides advanced instruction in bookkeeping and record-keeping functions. Emphasis is placed on mastering adjusting entries, correction of errors, depreciation, payroll, and inventory. Upon completion, students should be able to conduct all key bookkeeping functions for small businesses.

## Administration of Justice

**ADMJ 1 Introduction to Administration of Justice (CP 1) 4 Units**  
*(Also listed as Political Science 10. Student may enroll in either department, but not both for credit.)*  
*Four hours lecture.*

The history and philosophy of administration of justice in America. A study of the overall system from its European antecedents and development within the United States; identification of various subsystems and components, their role expectations and interrelationships; basic premises of crime, punishment and rehabilitation; the role of education in the administration of justice within a democracy. (CAN AJ 2)

**ADMJ 3 Concepts of Criminal Law (CP 2) 5 Units**  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
*(Also listed as Paralegal 3, and Political Science 13. Student may enroll in only one department, for credit.)*  
*Four hours lecture, three hours directed research.*

Historical development, philosophy of law and constitutional provisions, definitions, classification of crime, and their application to the system of administration of justice; legal research, study of case law, methodology and concepts of law as a social force. (CAN AJ 4)

**ADMJ 5 Community Relations (CP 7) 4 Units**  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
*Four hours lecture.*  
 Examination of interrelationships of Administration of Justice practitioners and multicultural, multiethnic communities.

**ADMJ 11 Federal Courts and Constitutional Law 4 Units**  
*Advisory: English Writing 1A or English as a Second Language 5.*  
*(Also listed as Paralegal 11, and Political Science 11. Student may enroll in only one department, for credit.)*  
*Four hours lecture.*

Federal court procedure and the impact of U.S. Constitutional law on federal and state law. Read and analyze the Constitution. Effect of U.S. Supreme Court cases on current constitutional interpretation.

**ADMJ 25 Law and Social Change 4 Units**  
*(Also listed as Sociology 25. Student may enroll in either department, but not both, for credit.)*  
*Four hours lecture.*  
 Exploration of the use of law as an instrument for social change. Examination of the relationship between law and social change in cross-cultural settings. Analysis

of legislation, case law, the process of conflict resolution and legal institutions as they relate to social change.

**ADMJ 29 Cultural Pluralism and American Law and Justice 4 Units**  
*(Formerly Administration of Justice 58.)*

*(See general education pages for the requirement this course meets.)*

*Advisory: English Writing 1A or English as a Second Language 5.*

*(Also listed as Intercultural Studies 29. Student may enroll in either department, but not both, for credit.)*

*Four hours lecture.*

An interdisciplinary study of marginalized peoples and their relationship to the law. Examines the legal perspective on cultural diversity in the United States, including race, ethnicity, culture, gender, class, religious background, disability, and sexual orientation. Analyzes how these groups interact with mainstream society through American law, concentrating on both historical and contemporary congressional acts and court rulings. Analyzes how the courts play a role in determining the status of minority groups.

**ADMJ 50 Crime, Correction and Society 4 Units**  
*(Also listed as Sociology 50. Student may enroll in either department, but not both, for credit.)*  
*Four hours lecture.*

A legal and sociological approach to understanding the fundamental ideas which have shaped correctional theories and practices. An in-depth study of adult sentencing, prisons, and jails subsystems including institutions by type and function, probation, parole and community based programs. A comprehensive examination of current correctional practices, punishment, rehabilitation, and community treatment programs with an emphasis on issues concerning race, ethnicity and gender.

**ADMJ 51 Gender, Culture, and Crime 4 Units**  
*(Also listed as Sociology 51. Student may enroll in either department, but not both, for credit.)*  
*Four hours lecture.*

An examination of the changing role of women and crime with emphasis on gender and cultural based differences related to victims, offenders and criminal justice professionals.

**ADMJ 53 Criminal Law II (CP 3) 5 Units**  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
*Five hours lecture.*

An advanced course in criminal law emphasizing substantive California statutory criminal codes.

**ADMJ 54 Youth and the Law 4 Units**  
*Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.*  
*(Also listed as Sociology 54 and Paralegal 54. Student may enroll in only one department for credit.)*  
*Four hours lecture.*

The organization, functions, and jurisdiction of juvenile agencies; the processing and detention of juveniles; juvenile case disposition; juvenile statutes and court procedure.

**ADMJ 55 Alcohol, Narcotics and Drug Abuse 4 Units**  
*Four hours lecture.*

This course is designed to equip public service workers and the community with knowledge of the issues involved in drug abuse, including the history and classification of drugs and the problems facing society and the governing of illegal drug use.

**ADMJ 56 Practical Writing for Administration of Justice (CP 5) 4 Units**  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
*Four hours lecture.*

Designed to acquaint the student with important developments, techniques and applications in the art and science of report writing for criminal justice professionals.

**ADMJ 60 Patrol Procedures 4 Units**  
*Prerequisite: Administration of Justice 75.*

*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*

*Four hours lecture.*

Responsibilities, techniques, and methods of police patrol. Practical experience in law enforcement techniques.

**ADMJ 61 Criminal Investigation 4 Units**

*Prerequisite: Administration of Justice 3 or 75.*

*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*

*Four hours lecture.*

Fundamentals of crime investigation; techniques of crime scene search and recording; collection and preservation of physical evidence; use of scientific aids; modus operandi processes; sources of information; interviewing techniques. (CAN AJ 8)

**ADMJ 62 Sexual Assault, Police and Community 4 Units**  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
*(Also listed as Psychology 63. Student may enroll in either department, but not both, for credit.)*  
 Four hours lecture.  
 Societal and psychological aspects of sexual assault, the perpetrators and the victims; practical application of the police investigation, the criminal justice process, and the social service intervention.

**ADMJ 64 Administration of Justice Internship 1 Unit**  
**ADMJ 64X 2 Units**  
**ADMJ 64Y 3 Units**  
**ADMJ 64Z 4 Units**  
*Advisory: Administration of Justice 1, 74A, and 75; or consent of the instructor.*  
*Four hours per week per unit of supervised internship in an authorized office or agency.*  
*(Any combination of Administration of Justice 64, 64X, 64Y and 64Z may be taken up to six times, not to exceed 18 units, for credit.)*  
 Program of work experience and study in law enforcement, corrections/probation, private security or human services under the supervision of the instructor and agency personnel.

**ADMJ 69 Administration of Justice Field Trips 3 Units**  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
*Six hours lecture-laboratory.*  
*(May be repeated up to six times, not to exceed 18 units, as long as the topics/projects are different each time.)*  
 A survey of current conditions in the paralegal field or visits to adult or juvenile detention and correctional facilities in Northern California.

**ADMJ 73 Crime and Criminology 4 Units**  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
*(Also listed as Sociology 73. Student may enroll in either department, but not both, for credit.)*  
 Four hours lecture.  
 Introduction to major types of crime and criminal behavior: examining demographics and measurement of crime, theories of causation, and victimology, crime prevention and crime control.

**ADMJ 74A Interviewing, Interrogation and Crisis Intervention 4 Units**  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
*(Also listed as Paralegal 74A and Psychology 74A. Student may enroll in only one department, for credit.)*  
 Four hours lecture.  
 Theories, principles and strategies of tactical and interpersonal communication necessary to interview victims, witnesses, and suspects; crisis intervention strategies for victims and witnesses of crime; communication with individuals from diverse backgrounds with consideration to race, ethnicity, gender, age and special needs.

**ADMJ 75 Principles and Procedures of the Justice System (CP 6) 4 Units**  
*(Formerly Administration of Justice 2.)*  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
*(Also listed as Paralegal 75 and Political Science 75. Student may enroll in only one department, for credit.)*  
 Four hours lecture.  
 Procedures followed by law enforcement and courts in criminal cases; constitutional principles governing those procedures.

**ADMJ 77 Special Projects in Administration of Justice 1/2 Unit**  
**ADMJ 77W 1 Unit**  
**ADMJ 77X 2 Units**  
**ADMJ 77Y 3 Units**  
**ADMJ 77Z 4 Units**  
*(Formerly Administration of Justice 65, 65W-Z.)*  
*Hours to be arranged with a minimum of twelve hours lecture per quarter required for each unit of credit.*  
*(Any combination of Administration of Justice 77, 77W, 77X, 77Y and 77Z may be taken up to six times, not to exceed 18 units, as long as the topics/projects are different each time.)*  
 Individual and/or group projects in the Administration of Justice curriculum dealing with issues related to law enforcement, courts, corrections, private security, and industrial security.

**ADMJ 78 Correctional Investigation 4 Units**  
*Prerequisite: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
 Four hours lecture.

History and development of probation and parole systems, including current practices at the Federal, State and local levels. Investigation techniques needed for preparation of pre-sentence investigation reports, use of these reports in the courts, probation and parole supervision, and correctional institutions.

**ADMJ 90A Legal Aspects of Evidence (CP 4) 4 Units**  
*Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.*  
*(Also listed as Paralegal 90A. Student may enroll in either department, but not both, for credit.)*  
 Four hours lecture.  
 The origin, development, and content of the rules of evidence; kinds and degrees of evidence and rules governing admissibility of evidence.  
 (CAN AJ 6)

**ADMJ 95 Overview of American Law 4 Units**  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
*(Also listed as Paralegal 95 and Political Science 95. Student may enroll in only one department, for credit.)*  
 Four hours lecture.  
 Overview of the major substantive areas of American law: agency, contracts, constitutional law, corporations, criminal law, family law, property, torts, wills and estates.

**ADMJ 120 Supervisory Techniques 5 Units**  
 Five hours lecture.  
 Responsibilities of a police supervisor; duties, human relationships, grievances, rating, promotion, and training.

**ADMJ 231 Jail Procedures 2 Units**  
*(Formerly Administration of Justice 131.)*  
*Credit course - Does not apply to De Anza Associate degree.*  
 Two hours lecture.  
 The laws regulating the procedures and processes concerning incarceration as a result of arrests. The relationships between jailers and patrolmen, detectives, court officers, and other groups involved in the administration of criminal justice.

**ADMJ 251 Laws of Arrest for School Peace Officers (832.2 P.C.) 3 Units**  
*(Formerly Administration of Justice 151.)*  
*Credit course - Does not apply to De Anza Associate degree.*  
 Three hours lecture.  
 Principles, methods and laws of arrest for school peace officers as required by State of California Commission on Peace Officer Standards and Training.

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## Aerospace Studies

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**(Air Force Reserve Officers Training Corps)**  
 For information on Air Force ROTC courses, please see Military Studies in this catalog.

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## Anthropology

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**ANTH 1 Physical Anthropology 4 Units**  
*(See general education pages for the requirement this course meets.)*  
*Advisory: English Writing 1A or English as a Second Language 5.*  
 Four hours lecture.  
 Biological structure and evolution of primates with particular emphasis on Homo sapiens as a culture-bearing animal. Relationships between human and non-human primates; genetic, physical, and cultural variations in living human groups; social organization and gender roles in primate and human societies; and considerations of future human evolution.  
 (CAN ANTH 2)

**ANTH 1L Physical Anthropology Laboratory 1 Unit**  
*(See general education pages for the requirement this course meets.)*  
*Prerequisite: Completion of or concurrent enrollment in Anthropology 1.*  
 Three hours laboratory.  
 Laboratory course in which the students apply and practice the scientific methods, techniques and procedures used by physical anthropologists to understand human evolution, non human primates and human variation. Students gain practical experience and a deeper understanding by participating in lab exercises, activities and experiments that explore human evolution, osteology, forensics, genetics, modern human variation, primate anatomy and behavior.

**ANTH 2 Cultural Anthropology 4 Units**  
*(See general education pages for the requirement this course meets.)*  
*Advisory: English Writing 1A or English as a Second Language 5.*  
 Four hours lecture, one additional hour to be arranged.  
 The anthropological approach to the study of human behavior from a cross-cultural, comparative perspective. An exploration into the languages, economics, sociopolitical systems, religions, and world views of diverse world cultures. An assessment of the dynamics of culture change and the future prospects for humanity.  
 (CAN ANTH 4)

**ANTH 4 World Prehistory 4 Units**  
 (See general education pages for the requirement this course meets.)  
 Advisory: English Writing 1A or English as a Second Language 5.  
 Four hours lecture, one additional hour to be arranged.  
 Worldwide patterns of cultural transformation, from the earliest foraging societies to the development of agrarian states. The prehistorical interpretation of these changes based upon the comparison of archeological evidence from Africa, Asia, Europe, the Middle East, the Americas, and Oceania.  
 (CAN ANTH 6)

**ANTH 6 Linguistic Anthropology 4 Units**  
 (See general education pages for the requirement this course meets.)  
 Advisory: English Writing 1A or English as a Second Language 5.  
 Four hours lecture.  
 A cross-cultural investigation into the relationship between language and culture: language as a human attribute; language structure, historical origins, diversification, and change; gender and cultural variations in language usage; comparative analysis and classification of world languages; the origins and development of writing; microelectronics and the advent of the Information Age.

**ANTH 55 Introduction to Archeology 4 Units**  
 Advisory: English Writing 1A or English as a Second Language 5.  
 Four hours lecture; field trips required as part of the course.  
 Introduction to the field of archaeology within the discipline of anthropology including discussion of scientific methods, the history of archeology, archaeological theory, and examples of culturally diverse archeological sites. Archaeological ethics and real-world issues concerning looting, collecting, preservation, and the role of indigenous peoples will be examined.

**ANTH 69 Early Childhood Education Principles and Practices (Cross-Cultural Emphasis) 3 Units**  
 Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.  
 (Also listed as Child Development 69. Student may enroll in either department, but not both, for credit.)  
 Three hours lecture.  
 Underlying principles of early education, infancy through middle childhood. National, state, and local practices will be examined in contrast to options presented through ethnographic data from a selection of diverse cultures.

## Arabic Language

**ARBC 1 Elementary Arabic (First Quarter) 5 Units**  
 (Formerly Arabic 91.)  
 Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.  
 Five hours lecture, one hour laboratory.  
 Introduction to the language and cultures of the Arabic-speaking world. Development and practice of elementary speaking, listening, reading, and writing skills in targeted language functions with Arabic as the primary language of instruction. A variety of authentic audio, video, and reading materials are presented early in the course. Students are encouraged to be creative with the language in and out of class. Introduction to basic geographical, historical and cultural aspects of Arabic-speaking world areas.

**ARBC 2 Elementary Arabic (Second Quarter) 5 Units**  
 (Formerly Arabic 92.)  
 Prerequisite: Arabic 1.  
 Five hours lecture, one hour laboratory.  
 Continuation of elementary speaking, listening, reading, and writing skills in targeted language functions, with Arabic as the primary language of instruction. Focus on greater structural accuracy and communicative competence. Study of basic geographical, historical, and cultural features of Arabic-speaking world areas. A variety of authentic audio, video, and reading materials are presented early in the course.

**ARBC 3 Elementary Arabic (Third Quarter) 5 Units**  
 (Formerly Arabic 93.)  
 Prerequisite: Arabic 2.  
 Five hours lecture, one hour laboratory.  
 Continuation of elementary speaking, listening, reading, and writing skills in targeted language functions, with Arabic as the primary language of instruction. Focus on greater structural accuracy and communicative competence. Study of basic geographical, historical, and cultural features of Arabic-speaking areas of the world. A variety of authentic audio, video, as well as reading materials are presented early in the course.

**ARBC 4 Intermediate Arabic (First Quarter) 5 Units**  
 (Formerly Arabic 94.)  
 Prerequisite: Arabic 3.  
 Five hours lecture, one hour laboratory.  
 Reading and discussion of texts dealing with the literature, arts, geography, history, and culture of the Arabic-speaking world. Review of the linguistic functions and grammar structures of first-year Arabic. The teaching/learning process in this level is proficiency-oriented where emphasis is placed on the functional usage of Arabic and communication in context in the four language skills: reading, writing, speaking and listening.

**ARBC 5 Intermediate Arabic (Second Quarter) 5 Units**  
 (Formerly Arabic 95.)  
 Prerequisite: Arabic 4.  
 Five hours lecture, one hour laboratory.

Continuation of Intermediate Arabic. Reading and discussion of texts dealing with the literature, arts, geography, history, and culture of the Arabic-speaking world. Review of the linguistic functions and grammar structures of first-year Arabic. The teaching/learning process in this level is proficiency-oriented where emphasis is placed on the functional usage of Arabic and communication in context in the four language skills: reading, writing, speaking and listening.

**ARBC 6 Intermediate Arabic (Third Quarter) 5 Units**  
 (Formerly Arabic 96.)  
 Prerequisite: Arabic 5.  
 Five hours lecture, one hour laboratory.

Continuation of Intermediate Arabic. Reading and discussion of texts dealing with the literature, arts, geography, history, and culture of the Arabic-speaking world. Review of the linguistic functions and grammar structures of first-year Arabic. The teaching/learning process in this level is proficiency-oriented where emphasis is placed on the functional usage of Arabic and communication in context in the four language skills: reading, writing, speaking and listening.

## Army Reserve Officers Training Corps

### (ROTC)

For information on Army ROTC, please see Military Studies in this catalog.

## Arts

**ARTS 1A Introduction to the Visual Arts 4 Units**  
 (See general education pages for the requirement this course meets.)  
 Advisory: English Writing 1A or English as a Second Language 5.  
 Four hours lecture, one additional hour to be arranged.

An exploration of visual imagery throughout the world, for the purpose of refining visual literacy skills. Works of art will be studied by means of formal analysis and medium, the social experiences of artists, the function of works of art in their original environment, and comparison of works from different cultures. Primary emphasis will be on paintings, graphic works, and sculpture.

**ARTS 1B Architecture Past and Present 4 Units**  
 (See general education pages for the requirement this course meets.)  
 Advisory: English Writing 1A or English as a Second Language 5.  
 Four hours lecture, one additional hour to be arranged.

An exploration of architecture throughout the world, for the purpose of refining visual literacy skills. Works of architecture will be studied comparatively with regard to form and function, and numerous architectural concepts will be examined.

**ARTS 2A History of Art (Europe From Prehistory through Early Christianity) 4 Units**  
 (See general education pages for the requirement this course meets.)  
 Advisory: English Writing 1A or English as a Second Language 5.  
 Four hours lecture, one additional hour to be arranged.

An introduction to the discipline of art history through analysis of images, objects, and works of architecture produced from the prehistoric period of European history through approximately the year 600 C.E., including discussion of Stone Age, Mesopotamian, Egyptian, Greek, Etrurian, Roman, and Byzantine cultures.  
 (ARTS 2A + 2B = CAN ART 2) (ARTS 2A + 2B + 2C = CAN ART SEQ A)

**ARTS 2B History of Art (Europe During the Middle Ages and the Renaissance) 4 Units**  
 (See general education pages for the requirement this course meets.)  
 Advisory: English Writing 1A or English as a Second Language 5.  
 Four hours lecture, one additional hour to be arranged.

An introduction to the discipline of art history through analysis of images, objects and works of architecture produced from approximately 600 through 1600 C.E., including discussion of Islamic and European cultures during the Middle Ages and the art of the Renaissance (including Mannerism) in both northern and southern Europe.  
 (ARTS 2A + 2B = CAN ART 2) (ARTS 2B + 2C = CAN ART 4)  
 (ARTS 2A + 2B + 2C = CAN ART SEQ A)

**ARTS 2C History of Art (Europe From the Baroque Period Through Impressionism) 4 Units**  
 (See general education pages for the requirement this course meets.)  
 Advisory: English Writing 1A or English as a Second Language 5.  
 Four hours lecture, one additional hour to be arranged.

An introduction to the discipline of art history through analysis of images, objects, and works of architecture produced in Europe from c. 1600 through the 1880s, including discussion of both northern and southern European cultures.  
 (ARTS 2B + 2C = CAN ART 4) (ARTS 2A + 2B + 2C = CAN ART SEQ A)

**ARTS 2D History of Art (Europe and the United States From Post-Impressionism to the Present) 4 Units**

(See general education pages for the requirement this course meets.)

Advisory: English Writing 1A or English as a Second Language 5.

Four hours lecture, one additional hour to be arranged.

An introduction to the discipline of art history through analysis of images, objects, and works of architecture produced from the 1880s to the present, including discussion of numerous European and American cultural groups.

**ARTS 2F History of Art (Multicultural Arts in the United States) 4 Units**

(See general education pages for the requirement this course meets.)

Advisory: English Writing 1A or English as a Second Language 5.

(Also listed as Intercultural Studies 5. Student may enroll in either department, but not both, for credit.)

Four hours lecture, one additional hour to be arranged.

A cross-cultural history of American art history which includes interdisciplinary analysis of diverse art forms generated by artists of color, including African Americans, Asian Americans, Native Americans, Latina(o)s/Chicana(o)s, and Americans of non-European heritage. Significant attention will be given to issues related to race, gender, and social class as the traditions, values, and cultural expressions of diverse societies and their contributions to American visual culture are explored.

**ARTS 2G Arts of Asia 4 Units**

(See general education pages for the requirement this course meets.)

Advisory: English Writing 1A or English as a Second Language 5.

(Also listed as International Studies 10. Student may enroll in either department, but not both, for credit.)

Four hours lecture, one additional hour to be arranged.

A general introduction to art through major Asian artistic traditions. Focuses upon paintings, sculptures, ceramics, and architecture and their religious, cultural, historical, and social contexts. Examines arts from China, Japan, India, Central Asia, Himalayas, and Southeast Asia and assesses the contributions of Asian art in a global context.

**ARTS 2H History of Art: Native Arts of Mesoamerica and South America 4 Units**

(Formerly Arts 67.)

(See general education pages for the requirement this course meets.)

Advisory: English Writing 1A or English as a Second Language 5.

(Also listed as International Studies 21. Student may enroll in either department, but not both, for credit.)

Four hours lecture.

A general introduction to the visual arts of the indigenous cultures of Mesoamerica, an area extending from northern Mexico through Central America, and the Andean region of South America. This course covers diverse art forms, including architecture, ceramics, weaving, painting and sculpture from antiquity to the present. Topics addressing the religious, cultural, social, economic and political contexts of the art will be explored. Compares indigenous arts of the Americas to other world art traditions and assesses the contributions of indigenous cultures in a global context.

**ARTS 2J History of Art: Indigenous Arts of the World 4 Units**

(See general education pages for the requirement this course meets.)

Advisory: English Writing 1A or English as a Second Language 5.

(Also listed as International Studies 22. Student may enroll in either department, but not both, for credit.)

Four hours lecture.

A general introduction to some of the many indigenous art traditions around the world, with emphasis placed upon traditional arts created for use in small-scale communities from the Americas, South Pacific region and Africa. Diverse art forms covered will include sculpture, painting, performance, ceramics, textiles and architecture from antiquity through the colonial period to the present. Topics addressing the religious, cultural, social, economic and political contexts of the art will be explored. Compares arts from indigenous peoples to other world art traditions and assesses the contributions of indigenous arts in a global context.

**ARTS 2K History of Art: Visual Arts of Islam 4 Units**

(See general education pages for the requirement this course meets.)

Advisory: English Writing 1A or English as a Second Language 5.

(Also listed as International Studies 23. Student may enroll in either department, but not both, for credit.)

Four hours lecture.

An exploration of the visual arts of Islam in a global context, including comparative analysis of the arts from diverse regions of the Islamic world. Examines artistic traditions of calligraphy, miniature painting, textiles, decorative arts and architecture from the beginnings of the Islamic faith to the present, and Islamic contributions to world art history. Includes interdisciplinary analysis of Islamic visual arts, emphasizing the cultural and religious contexts, as well as issues related to gender and social class.

**ARTS 2L History of Art: Visual Arts of Africa 4 Units**

(See general education pages for the requirement this course meets.)

Advisory: English Writing 1A or English as a Second Language 5.

(Also listed as International Studies 24. Student may enroll in either department, but not both, for credit.)

Four hours lecture.

A general introduction to the visual arts of Africa, covering diverse art forms, including sculpture, painting, performance, ceramics, textiles and architecture from antiquity through the colonial period to the present. Topics addressing the religious, cultural, social, economic and political contexts of the art will be explored. Compares arts from Africa to other world art traditions and assesses the contributions of African arts in a global context.

**ARTS 3TC Women, Society, and the Visual Arts 4 Units**

(Formerly Arts 62, and Arts 3C.)

(See general education pages for the requirement this course meets.)

Advisory: English Writing 1A or English as a Second Language 5.

(Also listed as Women's Studies 3C. Student may enroll in either department, but not both, for credit.)

Four hours lecture, one additional hour to be arranged.

A history of women in relation to society and the visual arts from prehistory to the present. Social perceptions and obstacles relevant to women artists will be discussed, and students will engage in cross-cultural comparison of works produced in western and nonwestern cultures made by women, and in which women serve as subject matter.

**ARTS 3TD American Art: Public and Private 4 Units**

(Formerly Arts 7.)

(See general education pages for the requirement this course meets.)

Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.

Four hours lecture.

An introduction to the discipline of art history through analysis of art in the United States which emphasizes discussion of paintings, sculpture, and works of architecture produced for both public and private purposes, from the seventeenth century to the present day.

**ARTS 3TE Today's Working Artist 4 Units**

(See general education pages for the requirement this course meets.)

Advisory: English Writing 1A or English as a Second Language 5.

Corequisite: Arts 3TE students must also enroll in Arts 3TEL.

Four hours lecture, one additional hour to be arranged.

Focuses on the issues and challenges facing today's working artists. Topics include: the roots of international contemporary art, technological influences on current art practices, and the essential components for assembling a dynamic portfolio presentation. Students will participate in assigned projects requiring both theoretical analysis and hands-on studio work.

**ARTS 3TEL Art History Laboratory 1 Unit**

(Formerly Arts 3BL and Arts 93L.)

Corequisite: Arts 3TEL students must also enroll in Arts 3TE.

Three hours laboratory.

Pass-No Pass (P-NP) course.

Utilization of studio equipment and materials related to projects assigned in Arts3TE.

**ARTS 4A Beginning Drawing 3 Units**

Prerequisite: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.

Advisory: Arts 8.

Six hours lecture-laboratory.

(Any combination of Arts 4A, 4B, and 4C may be taken up to six times, not to exceed 18 units for the family of courses.)

A survey course exploring the basic elements and principles of drawing, using traditional and experimental media.

(ARTS 4A + ARTS 4B = CAN ART 8)

**ARTS 4B Intermediate Drawing 3 Units**

Prerequisite: Arts 4A; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.

Advisory: Arts 8.

Six hours lecture-laboratory.

(Any combination of Arts 4A, 4B, and 4C may be taken up to six times, not to exceed 18 units for the family of courses.)

A beginning drawing course focusing on the creative interpretation of subject matter utilizing a variety of experimental, as well as traditional, techniques and media.

(ARTS 4A + ARTS 4B = CAN ART 8)

**ARTS 4C Life Drawing 3 Units**

Prerequisite: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.

Advisory: Arts 4A and 4B.

Six hours lecture-laboratory.

(Any combination of Arts 4A, 4B, and 4C may be taken up to six times, not to exceed 18 units for the family of courses.)

A beginning drawing course focusing on the representation and interpretation of the human figure, including drawing from life.

(CAN ART 24)

A	<b>ARTS 8 Design</b>	<b>3 Units</b>	<b>ARTS 15B Acrylic Painting II</b>	<b>3 Units</b>
	<p><i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.</i>  <i>Six hours lecture-laboratory.</i>            A beginning experience in the use of fundamental design elements and principles. (CAN ART 14)</p>		<p><i>Prerequisite: Arts 15A.</i>  <i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 172.</i>  <i>Six hours lecture-laboratory.</i>  <i>(Any combination of Arts 15A, 15B, and 15C may be taken up to six times, not to exceed 18 units for the family of courses.)</i>            A continuation of Arts 15A with further emphasis on basic techniques that relate to the unusual characteristics of the medium. Surfaces other than canvas will be introduced allowing for more varied results.</p>	
	<b>ARTS 10A Three-Dimensional Design</b>	<b>3 Units</b>	<b>ARTS 15C Acrylic Painting III</b>	<b>3 Units</b>
	<p><i>Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.</i>  <i>Six hours lecture-laboratory.</i>  <i>(May be taken twice for credit; the topics will change every quarter.)</i>            Introduction to design elements and principles as they apply to three-dimensional space and form. Idea exploration in various media including clay, plaster, paper, wood and metals. Assignments will vary according to the quarter. (ARTS 10A + 10AL = CAN ART 16)</p>		<p><i>Prerequisite: Arts 15B.</i>  <i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 172.</i>  <i>Six hours lecture-laboratory.</i>  <i>(Any combination of Arts 15A, 15B, and 15C may be taken up to six times, not to exceed 18 units for the family of courses.)</i>            A continuation of Arts 15B with emphasis on process rather than techniques. Problems in class will relate to aesthetic concerns of idea, content and expression within the acrylic medium.</p>	
	<b>ARTS 10B Intermediate Three-Dimensional Design</b>	<b>3 Units</b>	<b>ARTS 16A Oil Painting I</b>	<b>3 Units</b>
	<p><i>Prerequisite: Arts 10A.</i>  <i>Six hours lecture-laboratory.</i>  <i>(May be taken twice for credit; the topics will change every quarter.)</i>            Further exploration and continuation of three-dimensional design focusing on individual projects. Use of various materials including wood, metals, plastic sheet and resin. Introduction of mold making and casting. Assignments will vary according to the quarter.</p>		<p><i>Prerequisite: Arts 4A and 12.</i>  <i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.</i>  <i>Six hours lecture-laboratory.</i>  <i>(Any combination of Arts 16A, 16B, and 16C may be taken up to six times, not to exceed 18 units for the family of courses.)</i>            An introductory oil painting course exploring the application of the media as it relates to the production of artwork through the translation of visual information. Preparation, concept and craft are fundamental as applied to aesthetic concerns.</p>	
	<b>ARTS 12 Design and Color</b>	<b>3 Units</b>	<b>ARTS 16B Oil Painting II</b>	<b>3 Units</b>
	<p><i>Prerequisite: Arts 4A and 8.</i>  <i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.</i>  <i>Six hours lecture-laboratory.</i>            A fundamental course in theory and color in the visual arts. (CAN ART 22)</p>		<p><i>Prerequisite: Arts 16A.</i>  <i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 172.</i>  <i>Six hours lecture-laboratory.</i>  <i>(Any combination of Arts 16A, 16B, and 16C may be taken up to six times, not to exceed 18 units for the family of courses.)</i>            An introductory oil painting course exploring the application of the media as it relates to the production of artwork through the translation of visual information. Conceptual studies, color theory and aesthetics are primary concerns.</p>	
	<b>ARTS 14A Watercolor Painting I</b>	<b>3 Units</b>	<b>ARTS 16C Oil Painting III</b>	<b>3 Units</b>
	<p><i>(Formerly Arts 14.)</i>  <i>Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Arts 4A or Arts 8.</i>  <i>Six hours lecture-laboratory.</i>  <i>(Any combination of Arts 14A, 14B and 14C may be taken up to six times, not to exceed 18 units for the family of courses, as long as the topics/projects are different each time.)</i>            A comprehensive introduction to transparent watercolor painting with emphasis on basic techniques.</p>		<p><i>Prerequisite: Arts 16B.</i>  <i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 172.</i>  <i>Six hours lecture-laboratory.</i>  <i>(Any combination of Arts 16A, 16B, and 16C may be taken up to six times, not to exceed 18 units for the family of courses.)</i>            A beginning oil painting course exploring the production of artwork through translation of visual information. Primary concerns include shaped canvasses, glazing techniques and aesthetic.</p>	
	<b>ARTS 14B Watercolor Painting II</b>	<b>3 Units</b>	<b>ARTS 16C Oil Painting III</b>	<b>3 Units</b>
	<p><i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.</i>  <i>Six hours lecture-laboratory.</i>  <i>(Any combination of Arts 14A, 14B and 14C may be taken up to six times, not to exceed 18 units for the family of courses, as long as the topics/projects are different each time.)</i>            A continuation of Arts 14A with further emphasis on basic transparent watercolor techniques that relate to the unusual characteristics of the medium, including the use of watercolor pencils and aquarelle crayons in monotype.</p>		<p><i>Prerequisite: Arts 16B.</i>  <i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 172.</i>  <i>Six hours lecture-laboratory.</i>  <i>(Any combination of Arts 16A, 16B, and 16C may be taken up to six times, not to exceed 18 units for the family of courses.)</i>            A beginning oil painting course exploring the production of artwork through translation of visual information. Primary concerns include shaped canvasses, glazing techniques and aesthetic.</p>	
	<b>ARTS 14C Watercolor Painting III</b>	<b>3 Units</b>	<b>ARTS 17 Introduction to Muralism: Democracy in Action</b>	<b>3 Units</b>
	<p><i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.</i>  <i>Six hours lecture-laboratory.</i>  <i>(Any combination of Arts 14A, 14B and 14C may be taken up to six times, not to exceed 18 units for the family of courses, as long as the topics/projects are different each time.)</i>            A continuation of Arts 14B with emphasis on transparent and opaque watercolor techniques. Assignments in class will explore the aesthetic concerns of developing styles, ideas, content and self expression within the watercolor medium.</p>		<p><i>(Formerly Arts 64.)</i>  <i>Advisory: English Writing 1A or English as a Second Language 5.</i>  <i>Six hours lecture-laboratory.</i>            This course explores the application of traditional mural making processes and techniques in combination with the practices of building community through civic engagement. The course will examine the connection between the arts and community and the role they can play in building bridges and strengthening democratic practices.</p>	
	<b>ARTS 15A Acrylic Painting I</b>	<b>3 Units</b>	<b>ARTS 18A Ceramics</b>	<b>3 Units</b>
	<p><i>Prerequisite: Arts 4A, 8, or 12.</i>  <i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.</i>  <i>Six hours lecture-laboratory.</i>  <i>(Any combination of Arts 15A, 15B, and 15C may be taken up to six times, not to exceed 18 units for the family of courses.)</i>            An introductory course in acrylic painting with emphasis on basic techniques in both traditional and contemporary techniques that relate to the unusual characteristics of the medium. (CAN ART 10)</p>		<p><i>Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.</i>  <i>Corequisite: Arts 18A students must also enroll in Arts 20.</i>  <i>Six hours lecture-laboratory.</i>  <i>(May be taken twice for credit.)</i>            Introductory survey of ceramic construction techniques. Use of surface decoration, glazes, and ceramic kiln firing. (CAN ART 6)</p>	
	<b>ARTS 18B Ceramics (Wheel Throwing)</b>	<b>3 Units</b>		
	<p><i>Prerequisite: Arts 18A.</i>  <i>Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.</i>  <i>Corequisite: Arts 18B students must also enroll in Arts 20.</i>  <i>Six hours lecture-laboratory.</i>  <i>(May be taken twice for credit.)</i>            Beginning techniques of throwing on the potter's wheel. Ceramic color, glaze composition, and kiln firing processes.</p>			

<b>ARTS 18C</b>	<b>Ceramics (Advanced Wheel)</b>	<b>3 Units</b>	<b>ARTS 19N</b>	<b>Porcelain Ceramics</b>	<b>3 Units</b>
<i>Prerequisite: Arts 18B.</i>			<i>(Formerly Arts 64N.)</i>		
<i>Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.</i>			<i>Advisory: Arts 18A; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.</i>		
<i>Corequisite: Arts 18C students must also enroll in Arts 20.</i>			<i>Corequisite: Arts 19N students must also enroll in Arts 20.</i>		
<i>Six hours lecture-laboratory.</i>			<i>Six hours lecture-laboratory.</i>		
<i>(May be taken twice for credit.)</i>			<i>(May be taken twice for credit.)</i>		
Advanced techniques of throwing on the potter's wheel. Introduction to combined forms and developing the vessel as an aesthetic object. Development of surface and individual expression with clay.			Survey of porcelain as a ceramic material. Use of surface decoration, glazes, and ceramic kiln firing.		
<b>ARTS 18D</b>	<b>Ceramics Hand Building</b>	<b>3 Units</b>	<b>ARTS 20</b>	<b>Ceramics Laboratory</b>	<b>1/2 Unit</b>
<i>(Formerly Arts 66D.)</i>			<b>ARTS 20X</b>		<b>1 Unit</b>
<i>Advisory: Arts 18A; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.</i>			<b>ARTS 20Y</b>		<b>2 Units</b>
<i>Corequisite: Arts 18D students must also enroll in Arts 20.</i>			<b>ARTS 20Z</b>		<b>3 Units</b>
<i>Six hours lecture-laboratory.</i>			<i>Corequisite: Arts 20 students must also enroll in Arts 18A, 18B, 18C, 18D, 19G, 19H, 19I, 19J, 19K, 19L, 19M, 19N, 40, 40X, 40Y, or 50.</i>		
<i>(May be taken twice for credit.)</i>			<i>Three hours laboratory for each unit of credit.</i>		
Ceramic construction techniques. Use of pinch, coil and slab processes.			<i>(Any combination of Arts 20, 20X, 20Y, and 20Z may be taken up to six times, not to exceed 18 units for the family of courses.)</i>		
<b>ARTS 19G</b>	<b>Ceramic Glaze Calculation</b>	<b>3 Units</b>	<i>Pass-No Pass (P-NP) course.</i>		
<i>Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Mathematics 200 or 210.</i>			Supervised use of art studio equipment for projects assigned in ceramics courses.		
<i>Corequisite: Arts 19G students must also enroll in Arts 20.</i>			<b>ARTS 37A</b>	<b>Sculpture</b>	<b>3 Units</b>
<i>Six hours lecture-laboratory.</i>			<i>Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Mathematics 200 or 210; Arts 10A.</i>		
<i>(May be taken twice for credit.)</i>			<i>Six hours lecture-laboratory.</i>		
Glaze calculation, application, study of ceramic materials, kiln firing techniques of student developed glazes.			<i>(Any combination of Arts 37A, 37B, and 37C may be taken up to six times, not to exceed 18 units for the family of courses as long as the topics are different each time.)</i>		
<b>ARTS 19H</b>	<b>Raku (Ceramics)</b>	<b>3 Units</b>	Beginning sculpture, with an emphasis on idea development, visual investigation and the sculpture making process, including construction, carving, casting and mixed media. Assignments will vary according to the quarter.		
<i>Advisory: Arts 18A; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.</i>			<i>(ARTS 37A + ARTS 37AL = CAN ART 12)</i>		
<i>Six hours lecture-laboratory.</i>			<b>ARTS 37B</b>	<b>Intermediate Sculpture</b>	<b>3 Units</b>
<i>(May be taken twice for credit.)</i>			<i>Prerequisite: Arts 37A.</i>		
Historical development, firing techniques, glazes, kilns, and clay bodies of Raku pottery.			<i>Six hours lecture-laboratory.</i>		
<b>ARTS 19I</b>	<b>Ceramic Sculpture</b>	<b>3 Units</b>	<i>(Any combination of Arts 37A, 37B, and 37C may be taken up to six times, not to exceed 18 units for the family of courses as long as the topics are different each time.)</i>		
<i>Advisory: Arts 18A; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.</i>			Intermediate sculpture with further emphasis on further formulation of idea development, visual investigation and its making process. Additional materials and processes will be examined. Assignments will vary according to the quarter.		
<i>Corequisite: Arts 19I students must also enroll in Arts 20.</i>			<b>ARTS 37C</b>	<b>Advanced Sculpture</b>	<b>3 Units</b>
<i>Six hours lecture-laboratory.</i>			<i>Prerequisite: Arts 37B.</i>		
<i>(May be taken twice for credit.)</i>			<i>Six hours lecture-laboratory.</i>		
Use of clay as a sculptural and expressive medium: texture, surface, dimensionality, and form.			<i>(Any combination of Arts 37A, 37B, and 37C may be taken up to six times, not to exceed 18 units for the family of courses as long as the topics are different each time.)</i>		
<b>ARTS 19J</b>	<b>Ceramic Techniques</b>	<b>3 Units</b>	Advanced sculpture with an emphasis on idea development, visual investigation and the sculpture making process. Additional materials and processes will be examined and demonstrated. Assignments will vary according to the quarter.		
<i>Advisory: Arts 18A; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.</i>			<b>ARTS 50</b>	<b>Primitive Firing of Ceramics</b>	<b>3 Units</b>
<i>Corequisite: Arts 19J students must also enroll in Arts 20.</i>			<i>Advisory: Arts 18A; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.</i>		
<i>Six hours lecture-laboratory.</i>			<i>Corequisite: Arts 50 students must also enroll in Arts 20.</i>		
<i>(May be taken twice for credit.)</i>			<i>Six hours lecture-laboratory.</i>		
Techniques of hand building and wheel construction combined: experimental glazing, and texturing treatments.			<i>(May be taken twice for credit.)</i>		
<b>ARTS 19K</b>	<b>Ceramic Decoration</b>	<b>3 Units</b>	Construction and utilization of primitive fire kilns, including pit, sawdust, raku, and dung. Practical experience in firing technique.		
<i>Advisory: Arts 18A; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.</i>			<b>ARTS 53A</b>	<b>Introduction to Visual Technology</b>	<b>3 Units</b>
<i>Corequisite: Arts 19K students must also enroll in Arts 20.</i>			<i>Advisory: Arts 8; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.</i>		
<i>Six hours lecture-laboratory.</i>			<i>Six hours lecture-laboratory.</i>		
<i>(May be taken twice for credit.)</i>			A survey of the computer based electronic technology used by visual artists and designers. Student projects explore the creative potential of basic program options and experience how each relates to the new electronic media environment.		
Surface treatments used in the production of stoneware, earthenware, and porcelain.			<b>ARTS 53B</b>	<b>Introduction to Visual Technology</b>	<b>3 Units</b>
<b>ARTS 19L</b>	<b>Kiln Construction</b>	<b>3 Units</b>	<i>(Formerly Arts 53.)</i>		
<i>Advisory: Arts 18A; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.</i>			<i>Prerequisite: Arts 53A.</i>		
<i>Corequisite: Arts 19L students must also enroll in Arts 20.</i>			<i>Six hours lecture-laboratory.</i>		
<i>Six hours lecture-laboratory.</i>			Introductory use of art and design software for the computer. Emphasis on the creative process and the computer as a tool used by artists and designers today. Software used includes Adobe Photoshop.		
<i>(May be taken twice for credit.)</i>			<b>ARTS 55A</b>	<b>Graphic Design-Communication</b>	<b>3 Units</b>
Design, construction and utilization of kilns, including raku, high fire, gas and electric. Practical experience in firing technique.			<i>Prerequisite: Arts 53A.</i>		
<b>ARTS 19M</b>	<b>Low Fire Ceramics</b>	<b>3 Units</b>	<i>Six hours lecture-laboratory.</i>		
<i>Advisory: Arts 18A; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.</i>			The analysis and interpretation of the elements and principles of design as applied to the practice of graphic design and visual communication. Emphasis on the design process from visualization to production. Software used includes Adobe Photoshop and Adobe Illustrator.		
<i>Corequisite: Arts 19M students must also enroll in Arts 20.</i>					
<i>Six hours lecture-laboratory.</i>					
<i>(May be taken twice for credit.)</i>					
Survey of earthenware as a ceramic material. Use of surface decoration, glazes, and ceramic kiln firing.					

**A** **ARTS 55B**      **Graphic Design-Communication**      **3 Units**  
*Prerequisite: Arts 55A.*  
*Six hours lecture-laboratory.*  
Continuation of the analysis and interpretation of the elements and principles of design as applied to the practice of graphic design and visual communication. Emphasis on the design process from visualization to production techniques. Software used includes Adobe Photoshop, Adobe Illustrator, and Macromedia Flash.

**ARTS 55C**      **Graphic Design/Communication: Production Techniques**      **3 Units**  
*Prerequisite: Arts 55A and 55B; or demonstration of appropriate technical abilities suitable to course level.*  
*Six hours lecture-laboratory.*

Introductory course in the preparation of art for reproduction on the printed page, interactive media, and the World Wide Web. Emphasis is placed on specific studio procedures as well as computer production alternatives used by professionals in the field of graphic design. Software used includes Adobe Photoshop, Adobe Illustrator and Macromedia Flash.

**ARTS 56**      **Computer-Aided Graphic Design/ Electronic Publishing**      **3 Units**  
*Prerequisite: Arts 53A.*  
*Advisory: Arts 55A.*  
*Six hours lecture-laboratory.*

Analysis and interpretation of the elements and principles of design as applied to the practice of publication design. Emphasis on the design process as it relates to the use of the computer to create type and image in electronic publishing. Software used includes Adobe Photoshop, Adobe Illustrator, Adobe PageMaker and QuarkXPress.

**ARTS 57**      **Graphic Design-Typography**      **3 Units**  
*Prerequisite: Arts 53A and 55A.*  
*Six hours lecture-laboratory.*

Interpretation of the elements and principles of design as applied to the use of typography in graphic design. Emphasis on the integration and selection of letter forms and type styles as they relate to the production for the printed page, multimedia design and the World Wide Web. Software used includes Adobe Photoshop, Adobe Illustrator, and Adobe InDesign.

**ARTS 58A**      **Furniture Design**      **3 Units**  
*Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Mathematics 200 or 210; Arts 10A.*  
*Six hours lecture-laboratory.*

(Any combination of Arts 58A, 58B, and 58C may be taken up to six times, not to exceed 18 units for the family of courses as long as the topics are different each time.)  
Beginning furniture design with emphasis on developing basic skills in design, construction and craftsmanship. Assignments will vary according to the quarter.

**ARTS 58B**      **Intermediate Furniture Design**      **3 Units**  
*Prerequisite: Arts 58A.*  
*Six hours lecture-laboratory.*

(Any combination of Arts 58A, 58B, and 58C may be taken up to six times, not to exceed 18 units for the family of courses as long as the topics are different each time.)  
Intermediate furniture design, with an emphasis on a broader range of skills in design, construction and craftsmanship. Assignments will vary according to the quarter.

**ARTS 58C**      **Advanced Furniture Design**      **3 Units**  
*Prerequisite: Arts 58B.*  
*Six hours lecture-laboratory.*

(Any combination of Arts 58A, 58B, and 58C may be taken up to six times, not to exceed 18 units for the family of courses as long as the topics are different each time.)  
Advanced furniture design, with an emphasis on individual projects and further development on skills design, construction and craftsmanship. Assignments will vary according to the quarter.

**ARTS 59**      **History of Graphic Design**      **4 Units**  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
*Four hours lecture.*

A history of word and image from the invention of writing and the origins of typography in Europe, Asia and the United States from antiquity through the Industrial Revolution, the Modernist Era and the Information Age. Emphasis is placed on the impact of industrial technology in the first half of the twentieth century and the importance of graphic design in the global village. Topics will include the origins of printing and typography in the industrial age and post modern design.

**ARTS 63**      **Business Practices for Graphic Designers**      **3 Units**  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
*Three hours lecture.*

Introduction to the range of business practices used by artists and designers in the visual communications industry. Emphasis will be placed on legal rights and

issues as they relate to the professional artist/client relationship. Topics will include pricing and marketing, salaries and trade customs, standard contracts and new technology issues.

**ARTS 65**      **Graphic Design for the World Wide Web**      **3 Units**  
*Prerequisite: Arts 53A and 53B.*  
*Advisory: Computer Information Systems 89.*  
*Six hours lecture-laboratory.*

Hands-on web page design fundamentals. Emphasis is on the creative integration of type and image as related to the World Wide Web. Topics will include: navigation software, site content and organization, site layout, scanning and importing imagery, file formats, and typography issues.

**ARTS 70**      **Art Exhibition Analysis**      **1 Unit**  
*Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.*  
*Three hours laboratory.*

(May be taken three times for credit.)  
A class designed to develop skills in art gallery/museum viewing and critical analysis of content of exhibits, collection and/or lectures.

**ARTS 71**      **Gallery and Exhibition Design**      **3 Units**  
*Advisory: Arts 4A or Arts 8; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.*  
*Six hours lecture-laboratory.*

Practical experience in all aspects of exhibition design and installation of art exhibits in galleries and museums. Emphasis on design theory and the evaluation and analysis of the communicative, cultural, aesthetic, technical factors involved in the production of exhibits.

**ARTS 72**      **Internship in Art**      **1 Unit**  
*Advisory: Arts 1A, Arts 4A, Arts 8, Arts 10A, and Arts 71; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.*  
*Three hours laboratory.*

(May be taken three times for credit.)  
Directed professional experience in art museums/galleries, art businesses, art in schools programs in the Bay Area that emphasizes the application of skills and knowledge obtained in Gallery and Exhibition Design course Arts 71, Arts 4A Beginning Drawing, Arts 8 Basic Design, Arts 10A three-dimensional Design.

**ARTS 77**      **Special Projects**      **1 Unit**  
**ARTS 77X**      **2 Units**  
**ARTS 77Y**      **3 Units**  
(Formerly Arts 40, 40X, and 40Y.)  
*Prerequisite: Consent of instructor.*  
*Advisory: Successful completion of any art course.*

*Three hours laboratory per week for each unit of credit.*  
(Any combination of Arts 77, 77X, and 77Y may be taken up to six times, not to exceed 18 units, as long as the topics/projects are different each time.)  
Individual advanced projects in painting, drawing, ceramics, sculpture, art history, furniture design and museum studies.

**ARTS 85**      **Motion Graphics**      **3 Units**  
*Prerequisite: Arts 55B.*  
(Also listed as Film/Television 85. Student may enroll in either department, but not both, for credit.)  
*Six hours lecture-laboratory.*

The analysis and interpretation of the art and design involved in the production of "on-the-air" graphic design. The creative integration of "type" and "image" in motion is stressed through the use of directed laboratory exercises. Software used includes Adobe Photoshop, Adobe Premier, Macromedia FreeHand, Macromedia Director, Macromedia Flash.

**ARTS 86**      **Electronic Illustration Techniques**      **3 Units**  
*Prerequisite: Arts 53A and 53B.*  
*Three hours lecture, three hours laboratory.*

Introduction to industry standard software related to the creation and implementation of computer generated illustration. Emphasis is on verbal-visual relationships and the integration of type and image in contemporary illustration. Topics will include: illustration software options; concept and problem solving; style and personal expression; story board and broadcast illustration; and 3D illustration dynamics.

**ARTS 112A**      **Digital Imaging Software (Photoshop)**      **4 Units**  
(Student may receive credit for either CAD and Digital Imaging/Computer Applications and Office Systems/Arts 112A-H; or 112I-P and 112Q-Z.)  
*Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Computer Applications and Office Systems 94 or Computer Information Systems 94; Computer Applications and Office Systems 102T.*

(Also listed as CAD and Digital Imaging 112A and Computer Applications and Office Systems 112A. Student may enroll in only one department for credit.)  
*Eight hours lecture-laboratory.*  
*Pass-No Pass (P-NP) course.*

Basic and intermediate principles using digital imaging software to produce graphics for Web sites. Introduction to digital imaging terminology and software. This course is for the content person to produce Web pages using digital images.

**ARTS 112I Digital Imaging Software I (Photoshop) 2 Units**

(Student may receive credit for either CAD and Digital Imaging/Computer Applications and Office Systems/Arts 112 A-H; or 112 I-P and 112 Q-Z.)  
 Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Computer Applications and Office Systems 94 or Computer Information Systems 94; Computer Applications and Office Systems 102T.

(Also listed as CAD and Digital Imaging 112I and Computer Applications and Office Systems 112I. Student may enroll in only one department for credit.)

Four hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Basic principles of using digital imaging software to produce graphics for Web sites. Introduction to digital imaging terminology and software. This course is for the content person to produce Web pages using digital images.

**ARTS 112Q Digital Imaging Software II (Photoshop) 2 Units**

(Student may receive credit for either CAD and Digital Imaging/Computer Applications and Office Systems/Arts 112 A-H; or 112 I-P and 112 Q-Z.)

Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Computer Applications and Office Systems 112 I-P, or equivalent.

(Also listed as CAD and Digital Imaging 112Q and Computer Applications and Office Systems 112Q. Student may enroll in only one department for credit.)

Four hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Basic and intermediate principles of using digital imaging software to produce graphics for Web sites. Introduction to digital imaging terminology and software. This course is for the content person to produce Web pages using digital images.

**ARTS 113A Web Authoring Software (Dreamweaver) 4 Units**

(Student may receive credit for either Computer Applications and Office Systems/Arts 113A-H or 113I-P and 113Q-Z.)

Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Computer Applications and Office Systems 94 or Computer Information Systems 94; Computer Applications and Office Systems 102T.

(Also listed as Computer Applications and Office Systems 113A. Student may enroll in either department, but not both, for credit.)

Eight hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Basic and intermediate principles of building Web pages/sites using Web authoring software. Introduction to Web authoring terminology and software. This course is for the content person to develop and maintain an effective Web site.

**ARTS 113E Web Authoring Software (Frontpage 2000) 4 Units**

(Student may receive credit for either Computer Applications and Office Systems/Arts 113A-H or 113I-P and 113Q-Z.)

Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Computer Applications and Office Systems 94 or Computer Information Systems 94; Computer Applications and Office Systems 102T.

(Also listed as Computer Applications and Office Systems 113E. Student may enroll in either department, but not both, for credit.)

Eight hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Basic and intermediate principles of building Web pages/sites using Web authoring software. Introduction to Web authoring terminology and software. This course is for the content person to develop and maintain an effective Web site.

**ARTS 113I Web Authoring Software I (Dreamweaver) 2 Units**

(Student may receive credit for either Computer Applications and Office Systems/Arts 113 A-H; or 113 I-P and 113 Q-Z.)

Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Computer Applications and Office Systems 94 or Computer Information Systems 94; Computer Applications and Office Systems 102T.

(Also listed as Computer Applications and Office Systems 113I. Student may enroll in either department, but not both, for credit.)

Four hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Basic principles of building Web pages/sites using Web authoring software. Introduction to Web authoring terminology and software. This course is for the content person to develop and maintain an effective Web site.

**ARTS 113M Web Authoring Software I (Frontpage 2000) 2 Units**

(Student may receive credit for either Computer Applications and Office Systems/Arts 113 A-H; or 113 I-P and 113 Q-Z.)

Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Computer Applications and Office Systems 94 or Computer Information Systems 94; Computer Applications and Office Systems 102T.

(Also listed as Computer Applications and Office Systems 113M. Student may enroll in either department, but not both, for credit.)

Four hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Basic principles of building Web pages/sites using Web authoring software. Introduction to Web authoring terminology and software. This course is for the content person to develop and maintain an effective Web site.

**ARTS 113Q Web Authoring Software II (Dreamweaver) 2 Units**

(Student may receive credit for either Computer Applications and Office Systems/Arts 113 A-H; or 113 I-P and 113 Q-Z.)

Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Computer Applications and Office Systems 113I-P or Arts 113I-P.

(Also listed as Computer Applications and Office Systems 113Q. Student may enroll in either department, but not both, for credit.)

Four hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Intermediate principles of building Web pages/sites using Web authoring software. Expansion of Web authoring terminology and use of more advanced software features. This course is for the content person to develop and maintain an effective Web site.

**ARTS 113U Web Authoring Software II (Frontpage 2000) 2 Units**

(Student may receive credit for either Computer Applications and Office Systems/Arts 113 A-H; or 113 I-P and 113 Q-Z.)

Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Computer Applications and Office Systems 113I-P or Arts 113I-P.

(Also listed as Computer Applications and Office Systems 113U. Student may enroll in either department, but not both, for credit.)

Four hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Intermediate principles of building Web pages/sites using Web authoring software. Expansion of Web authoring terminology and use of more advanced software features. This course is for the content person to develop and maintain an effective Web site.

**ARTS 114A Web Graphics/Animation Software (Flash) 3 Units**

(Student may receive credit for either CAD and Digital Imaging/Computer Applications and Office Systems/Arts 114 A-H; or 114 I-P and 114 Q-Z.)

Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Computer Applications and Office Systems 112 A-H or Computer Applications and Office Systems 112 I-P; and 112 Q-Z or equivalent.

(Also listed as CAD and Digital Imaging 114A and Computer Applications and Office Systems 114A. Student may enroll in only one department for credit.)

Six hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Basic and intermediate principles of graphics/animation for the Web. Web graphics/animation terminology and software. This course is for the content person to build a Web site.

**ARTS 114I Web Graphics/Animation Software I (Flash) 1 1/2 Units**

(Student may receive credit for either Computer Applications and Office Systems/Arts 114 A-H or 114 I-P; and 114 Q-Z.)

Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Computer Applications and Office Systems 112 A-H or Computer Applications and Office Systems 112 I-P; and 112 Q-Z or equivalent.

(Also listed as Computer Applications and Office Systems 114I. Student may enroll in either department, but not both, for credit.)

Three hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Basic principles of graphics/animation for the Web. Introduction to Web graphics/animation terminology and software. This course is for the content person to build a Web site.

**ARTS 114Q Web Graphics/Animation Software II (Flash) 1 1/2 Units**

(Student may receive credit for either Computer Applications and Office Systems/Arts 114A-H or 114I-P and 114Q-Z.)

Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Computer Applications and Office Systems 114I-P or Arts 114I-P.

(Also listed as Computer Applications and Office Systems 114Q. Student may enroll in either department, but not both, for credit.)

Three hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Intermediate principles of graphics/animation for the Web. Expansion of Web graphics/animation terminology and software. This course is for the content person to build a Web site.

## **A** ARTS 116A Web Development Graphics Software (Illustrator) 4 Units

(Student may receive credit for either CAD and Digital Imaging/Computer Applications and Office Systems/Arts 116A-H, or 116I-P and 116Q-X.)  
Prerequisite: CAD and Digital Imaging/Computer Applications and Office System/Arts 112A-H; or CAD and Digital Imaging/Computer Applications and Office Systems/Arts 112I-P and 112Q-X.

Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.

(Also listed as CAD and Digital Imaging 116A and Computer Applications and Office Systems 116A. Student may enroll in only one department for credit.)  
Eight hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Basic and intermediate principles of using vector-based graphics software to produce graphics for Web sites. Introduction to vector-based graphics terminology and software. This course is for the content person to produce vector graphic images.

## **ARTS 116I Web Development Graphics Software I (Illustrator) 2 Units**

(Student may receive credit for either Computer Applications and Office Systems/Arts 116A-H, or 116I-P and 116Q-X.) Prerequisite: Computer Applications and Office Systems/Arts 112A-H, or Computer Applications and Office Systems/Arts 112I-P, and 112Q-X.

Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.

(Also listed as Computer Applications and Office Systems 116I. Student may enroll in either department, but not both, for credit.)

Four hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Basic principles of using vector-based graphics software to produce graphics for Web sites. Introduction to vector-based graphics terminology and software. This course is for the content person to reproduce vector graphic images.

## **ARTS 116Q Web Development Graphics Software II 2 Units**

(Student may receive credit for either Computer Applications and Office Systems/Arts 116A-H, or 116I-P, and 116Q-X.) Prerequisite: Computer Applications and Office Systems/Arts 116I-P.

Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.

(Also listed as Computer Applications and Office Systems 116Q. Student may enroll in either department, but not both, for credit.)

Four hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Basic and intermediate principles of using vector-based graphics software to produce graphics for Web sites. Introduction to vector-based graphics terminology and software. This course is for the content person to produce vector graphic images.

## **ARTS 117A Advanced Digital Imaging Software (Photoshop) 3 Units**

Prerequisite: Arts/CAD and Digital Imaging/Computer Applications and Office Systems 112A-H.

Advisory: Computer Applications and Office Systems 90G; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.

(Also listed as CAD and Digital Imaging 117A and Computer Applications and Office Systems 117A. Student may enroll in only one department for credit.)

Six hours lecture-laboratory.

Pass-No Pass (P-NP) course.

Advanced principles and techniques of using digital imaging software to produce graphics for Web sites and printed media. Integration of digital imaging software with Web authoring software. This course is for the content person to produce digital images for Web pages and print media.

## **ARTS 118A Advanced Web Graphics/Animation Software (Flash) 3 Units**

Prerequisite: Arts/CAD and Digital Imaging/Computer Applications and Office Systems 114A-H.

Advisory: Computer Applications and Office Systems 90G; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.

(Also listed as CAD and Digital Imaging 118A and Computer Applications and Office Systems 118A. Student may enroll in only one department for credit.)

Six hours lecture-laboratory.

Pass-No Pass (P-NP) course.

An advanced Flash course that is projects and portfolio based and taught from a designer perspective. Students will be taught how to build a portfolio and animated multimedia presentation. Basic programming skills will be taught along with developing interactive web-based multimedia presentations using ActionScripts, sound, and graphics.

## **Astronomy**

### **ASTR 4 Solar System Astronomy 5 Units**

(See general education pages for the requirement this course meets.)

Advisory: English Writing 1A or English as a Second Language 5.

Five hours lecture.

Analyze the physical principles, logic, and development of solar system astronomy from ancient times through the space age. Examine earth and sky relationships, exploration of the solar system by spacecraft and earth-based methods, similarities and differences between Earth and other planets, theories of the origin of the planetary system, and properties of other stars' planetary systems. Includes multimedia planetarium demonstrations.

### **ASTR 10 Stellar Astronomy 5 Units**

(See general education pages for the requirement this course meets.)

Advisory: English Writing 1A or English as a Second Language 5.

Five hours lecture.

Analyze the physical principles, logic, and development of stellar astronomy from ancient times to the present, with emphasis on recent developments. Examine the relationship of earth to its deep-space environment and contrast the Sun to other types of stars. Synthesize the organization in space and time of the hierarchy of the cosmos from stellar systems through the universe on its largest observable scale, and investigate the observational strategies and equipment that are used to investigate it.

### **ASTR 77 Special Projects in Astronomy 1 Unit**

#### **ASTR 77X**

#### **ASTR 77Y**

(Formerly Astronomy 40, 40X, and 40Y.)

Prerequisite: Consent of instructor and division dean.

Three hours laboratory per week for each unit of credit.

(Any combination of Astronomy 77, 77X, and 77Y may be taken up to six times, not to exceed 18 units, as long as the topics/projects are different each time.)

Pass-No Pass (P-NP) course.

Individual special reading, writing, or study projects in astronomy as determined in consultation with the instructor.

## **Automotive Technology**

### **AUTO 50A Introduction to Automotive Principles 4 Units**

Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.

Four hours lecture per week. Forty-eight hours lecture per quarter.

A selective study of the automobile's engine systems. Knowledge and skills necessary for basic repair, maintenance, and troubleshooting today's engine systems. May be used to fulfill the prerequisite to the Automotive Technology Program.

### **AUTO 50B Applied Automotive Principles 2 Units**

Prerequisite: Automotive Technology 50A (may be taken concurrently).

Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.

Four hours lecture-laboratory per week. Forty-eight hours lecture-laboratory per quarter.

Basic lecture-laboratory experiences in automotive repair and maintenance as related to the engine and its supporting systems.

### **AUTO 51A Introduction to Automotive Principles (Chassis Systems) 4 Units**

Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.

Four hours lecture per week. Forty-eight hours lecture per quarter.

A selective study of the automobile's chassis and drive line systems. Knowledge and skills necessary for basic repair, maintenance, and troubleshooting of today's chassis and drive line systems. Can be used to fulfill the prerequisite to the Automotive Technology Program.

### **AUTO 51B Applications of Automotive Principles (Chassis Systems) 2 Units**

Prerequisite: Automotive Technology 51A (may be taken concurrently).

Four hours lecture-laboratory per week. Forty-eight hours lecture-laboratory per quarter.

Basic lecture-laboratory experiences in automotive repair and maintenance as related to: suspension, steering, braking and drive line components.

### **AUTO 53A Automotive Mechanisms 3 Units**

Prerequisite: Approved Automotive Technology Course Sequence Contract.

Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.

(Also listed as Manufacturing and CNC 63A. Student may enroll in either course, but not both, for credit.)

Six hours lecture-laboratory per week. Seventy two hours lecture-laboratory per quarter.

The application of physical principles to the operation of mechanical, hydraulic, and hydromechanical systems, using an applied physics technique.

- AUTO 53B Automotive Electromechanical Systems 2 Units**  
*Prerequisite: Approved Automotive Technology Course Sequence Contract.*  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*(Also listed as Manufacturing and CNC 63B. Student may enroll in either course, but not both, for credit.)*  
*Four hours lecture-laboratory per week. Forty-eight hours lecture-laboratory per quarter.*  
*(Any combination of Automotive Technology 53B and Manufacturing and CNC 63B may be taken three times for credit.)*  
 Electrical theories, testing and measuring procedures, circuit construction and schematic interpretation. Application of the principles of magnetism. Fundamentals of operation of semiconductors used as electronic devices and controls.
- AUTO 57A Career Research and Employment in the Automotive Industry 2 Units**  
*Advisory: Automotive Technology 50A and 50B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Two hours lecture per week. Twenty-four hours lecture per quarter.*  
 Career research in the automotive industry: job search, applications and resumes, employer-employee relationships, job interviews.
- AUTO 57B Automotive Shop Operations 2 Units**  
*Advisory: Automotive Technology 50A and 50B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Two hours lecture per week. Twenty-four hours lecture per quarter.*  
 Selection of automotive operations, organization, required equipment, customer relations, personnel, tax liability permits and record keeping.
- AUTO 58 Hazardous Materials 1/2 Unit**  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173.*  
*One-half hour lecture per week. Six hours lecture per quarter.*  
 Proper handling of hazardous materials in the automotive trade.
- AUTO 60 Automotive Electrical Systems 9 Units**  
*Advisory: Automotive Technology 50B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Nine hours lecture per week. One hundred eight hours lecture per quarter.*  
 Principles of electricity, electronics, cranking, and charging systems. Testing, diagnosis and repair of these systems.
- AUTO 60A Electrical Schematic Diagnosis 4 1/2 Units**  
*(Formerly Automotive Technology 67.)*  
*Advisory: Automotive Technology 60; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Four and one-half hours lecture per week. Fifty-four hours lecture per quarter.*  
 Theory of operation for electrical, electronic, and electromechanical accessory systems. Understanding and using wiring diagrams, schematics, and other diagnostic information to troubleshoot electrical, electronic, and electromechanical systems. Preparation for Automotive Service Excellence (ASE) examination in areas A6, A8, and L1.
- AUTO 60B Automotive Electronics 4 1/2 Units**  
*(Formerly Automotive Technology 65M.)*  
*Advisory: Automotive Technology 50A, 50B, 60, 60A, and 60A; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Four and one-half hours lecture per week. Fifty-four hours lecture per quarter.*  
 Application of computer control principles to automotive systems. Operation of automotive electronic control systems, including commonly used sensors, actuators, and displays. Introduction to diagnostic methods and test equipment for automotive electronic control systems. Preparation for Automotive Service Excellence (ASE) examination in Areas A6, A8, and L1.
- AUTO 60C Automotive Ignition, Fuel, and Emission Systems 9 Units**  
*(Formerly Automotive Technology 65A and 65D.)*  
*Advisory: Automotive Technology 50A, 50B, 60, 60A, and 60B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Nine hours lecture per week. One hundred eight hours lecture per quarter.*  
 Introduction to components, subsystems, and functions of ignition, fuel delivery, carburetor and fuel injection systems (engine management). Introduction to automotive emission controls. Basic diagnosis, service, and repair procedures. Preparation for Automotive Service Excellence (ASE) examination in areas A6, A8, and L1.
- AUTO 60D Ignition Analysis and Oscilloscope Diagnosis 4 1/2 Units**  
*Advisory: Automotive Technology 50A, 50B, 60, 60A, 60B, 60C; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Four and one-half hours lecture per week. Fifty-four hours lecture per quarter.*  
 Ignition system principles of operation and diagnosis. Use of electronic test equipment in ignition system diagnosis. Preparation for Automotive Service Excellence (ASE) certification examinations in areas A6, A8, and L1.
- AUTO 60E Automotive Fuel Injection 4 1/2 Units**  
*(Formerly Automotive Technology 65I and 65N.)*  
*Advisory: Automotive Technology 50A, 50B, 60, 60C, and 60D; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Four and one-half hours lecture per week. Fifty-four hours lecture per quarter.*  
 Theory of operation and service of electronic fuel injection systems. Component parts and their functions and overall system theory. Diagnostic and repair methods using standard test and repair equipment. Preparation for Automotive Service Excellence (ASE) examination in areas A8, and L1.
- AUTO 60F No-Start Diagnosis 4 1/2 Units**  
*(Formerly Automotive Technology 65G.)*  
*Advisory: Automotive Technology 50A, 50B, 60, 60A, 60B, 60C, and 60D; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Four and one-half hours lecture per week. Fifty-four hours lecture per quarter.*  
 Principles of troubleshooting procedures and techniques to analyze and repair "no-start" problems in the fuel, ignition, and electrical systems of an automobile. Preparation for Automotive Service Excellence (ASE) examination in areas A6, A8, and L1.
- AUTO 60G Advanced Scan Tool Diagnosis 4 1/2 Units**  
*(Formerly Automotive Technology 65T.)*  
*Advisory: Automotive Technology 50A, 50B, 60, 60A, 60B, 60C, 60D, and 60E; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Four and one-half hours lecture per week. Fifty-four hours lecture per quarter.*  
 Advanced drivability diagnosis using a scan tool. Using the onboard diagnostic capabilities of vehicles built since 1980. Advanced scan data analysis. Using PC capabilities to store and analyze diagnostic information. Preparation for Automotive Service Excellence (ASE) examination in areas A6, A8, and L1.
- AUTO 60H Advanced Drivability and Onboard Diagnostics 4 1/2 Units**  
*(Formerly Automotive Technology 65F.)*  
*Advisory: Automotive Technology 50A, 50B, 60, 60A, 60B, 60C, 60D, and 60E; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Four and one-half hours lecture per week. Fifty-four hours lecture per quarter.*  
 Survey of onboard diagnostic systems from 1980 to the present. Advanced electronic diagnostic procedures using an automotive scan tool. Preparation for Automotive Service Excellence (ASE) examination in areas A6, A8, and L1.
- AUTO 60J Advanced Lab Scope and Waveform Diagnosis 4 1/2 Units**  
*(Formerly Automotive Technology 65U.)*  
*Advisory: Automotive Technology 50A, 50B, 60, 60C, 60D, 60E, 60F, and 60G; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Four and one-half hours lecture per week. Fifty-four hours lecture per quarter.*  
 Diagnosis of automotive electronic systems using a laboratory oscilloscope and a power graphing meter. Related use of other basic test equipment, including a digital multi meter and scan tool. Advanced waveform analysis. Preparation for Automotive Service Excellence (ASE) examination in areas A6, A8, and L1.
- AUTO 60K Advanced Body Electrical 4 1/2 Units**  
*Advisory: Automotive Technology 60A, 60B, and 60G; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Four and one-half hours lecture.*  
 Theory of operation for body electrical, electronic, and electromechanical systems. Understanding the functions of automotive body electrical systems. Utilization of special diagnostic equipment for body electrical systems and subsystems. Appropriate repair protocol for applied body electrical systems. Symptoms to system diagnosis. Preparation for Automotive Service Excellence (ASE) examination in area A6.

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<p><b>A</b> <b>AUTO 60M</b>      <b>Hybrid Electric Vehicles</b>      <b>4 1/2 Units</b>  <i>Advisory: Automotive Technology 60A, 60B, and 60G; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Four and one-half hours lecture.</i>            Understanding the functions of automotive hybrid propulsion systems. Operating characteristics of hybrid drive systems. Integration of high voltage power supplies and energy storage systems. Operating fundamentals of DC to DC converters. Relationship of internal combustion engines and motor generators. Function and design of regenerative braking systems. Operation of hybrid transmission systems and power splitting devices. Application of the high expansion ratio cycle. Understanding safety aspects of service hybrid electric vehicles. Utilization of special diagnostic equipment for hybrid electrical systems and related subsystems. Appropriate repair protocol for hybrid electrical systems. Maintenance and servicing of Hybrid vehicles.</p>	<p><b>AUTO 63C</b>      <b>Automotive Transaxles</b>      <b>4 1/2 Units</b>  <i>Advisory: Automotive Technology 50A and 50B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Four and one-half hours lecture per week. Fifty four hours lecture per quarter.</i>            Automotive transaxle operation. Theory of operation, service and repair techniques as related to automatic transaxles. Power flow and component repair techniques. Preparation for Automotive Service Excellence (ASE) certification examination A2.</p>
<p><b>AUTO 61A</b>      <b>Automotive Brake Systems</b>      <b>4 1/2 Units</b>  <i>(Formerly Automotive Technology 61.)</i>  <i>Advisory: Automotive Technology 50A and 50B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Four and one-half hours lecture per week. Fifty four hours lecture per quarter.</i>            Operation of automotive brake systems. Repair, maintenance and troubleshooting.</p>	<p><b>AUTO 63D</b>      <b>Transmission Diagnostic and Repair Techniques</b>      <b>4 1/2 Units</b>  <i>Advisory: Automotive Technology 50A and 50B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Four and one-half hours lecture per week. Fifty four hours lecture per quarter.</i>            Diagnostic and repair techniques for automatic transmissions and transaxles. Emphasis on development of diagnostic procedures and repair techniques. Preparation for Automotive Service Excellence (ASE) certification examination A2 and A3.</p>
<p><b>AUTO 61B</b>      <b>Electronically Controlled Brake Systems</b>      <b>4 1/2 Units</b>  <i>Advisory: Automotive Technology 62A; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Four and one-half hours lecture per week. Fifty-four hours lecture per quarter.</i>            Advanced study of wheel alignment systems. Emphasis is placed on diagnostic inspection and repair procedures.</p>	<p><b>AUTO 64</b>      <b>Automotive Machining and Engine Repair</b>      <b>9 Units</b>  <i>(Formerly Automotive Technology 64A and 64B.)</i>  <i>Advisory: Automotive Technology 50A and 50B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Nine hours lecture per week. One hundred eight hours lecture per quarter.</i>            Repair and rebuilding of engine cylinder heads and block components, engine assembly and testing. Includes theory, diagnosis, disassembly, cleaning, inspection and failure analysis. Preparation for Automotive Service Excellence (ASE) examinations for areas A1; and M1, M2, and M3.</p>
<p><b>AUTO 62A</b>      <b>Automotive Suspension, Steering, and Alignment</b>      <b>9 Units</b>  <i>(Formerly Automotive Technology 62E, 62F, and 62G.)</i>  <i>Advisory: Automotive Technology 50A and 50B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Nine hours lecture per week. One hundred eight hours lecture per quarter.</i>            Operation of automotive suspension, steering and alignment systems. Overview of repair, maintenance, and troubleshooting procedures.</p>	<p><b>AUTO 64HP</b>      <b>High Performance Engine Preparation</b>      <b>9 Units</b>  <i>(Formerly Automotive Technology 64C.)</i>  <i>Prerequisite: Automotive Technology 64.</i>  <i>Nine hours lecture per week. One hundred eight hours lecture per quarter.</i>            Precision and performance engine preparation. Includes selection and matching of engine and valve train components for maximum efficiency and output.</p>
<p><b>AUTO 62B</b>      <b>Advanced Wheel Alignment</b>      <b>9 Units</b>  <i>Advisory: Automotive Technology 62A and 50B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Four and one-half hours lecture per week. Fifty-four hours lecture per quarter.</i>            Advanced study of wheel alignment systems. Emphasis is placed on diagnostic inspection and repair procedures.</p>	<p><b>AUTO 65P</b>      <b>Clean Air Car Course</b>      <b>7 Units</b>  <i>(Automotive Technology 65P plus 65PP were formerly Automotive Technology 65LA, 65LB, and 65LC.)</i>  <i>Prerequisite: Automotive Technology 60, 60B, and one year of related automotive experience.</i>  <i>Seven hours lecture per week. Eighty-four hours lecture per quarter.</i>            Automotive technician training program for California's Inspection and Maintenance Program (I &amp; M Program). ASE certification in Electrical Systems and Engine Performance meets BAR verification requirement.</p>
<p><b>AUTO 63</b>      <b>Automatic Transmissions and Transaxles</b>      <b>9 Units</b>  <i>(Formerly Automotive Technology 63B and 63C.)</i>  <i>Advisory: Automotive Technology 50A and 50B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Nine hours lecture per week. One hundred eight hours lecture per quarter.</i>            Principles of operation, service and repair procedures for automatic transmissions and transaxles. Hydraulic and mechanical system operation. Power flow and component repair techniques. Preparation for Automotive Service Excellence (ASE) certification examination A2.</p>	<p><b>AUTO 65R</b>      <b>California ASE Alternative Training A6</b>      <b>2 Units</b>  <i>Advisory: Automotive Technology 60, 60A, and 60B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Two hour lecture per week. Twenty four hours lecture per quarter.</i>            This course is approved by the Bureau of Automotive Repair (BAR) as an alternative to meet the ASE A6 certification prerequisites for obtaining a smog technician license.</p>
<p><b>AUTO 63A</b>      <b>Automotive Drive Train</b>      <b>4 1/2 Units</b>  <i>Advisory: Automotive Technology 50A and 50B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Four and one-half hours lecture per week. Fifty four hours lecture per quarter.</i>            Principles of operation of automotive drive train components. Service and repair procedures, product problem discussions and demonstrations. Preparation for Automotive Service Excellence (ASE) certification examination A3.</p>	<p><b>AUTO 65S</b>      <b>California ASE Alternative Training A8</b>      <b>2 Units</b>  <i>Advisory: Automotive Technology 60, 60A, 60B and 60C; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Two hours lecture per week. Twenty four hours lecture per week.</i>            This course is approved by the Bureau of Automotive Repair (BAR) as an alternative to meet the ASE A8 certification prerequisites for obtaining a smog technician license.</p>
<p><b>AUTO 63B</b>      <b>Automatic Transmission</b>      <b>4 1/2 Units</b>  <i>Advisory: Automotive Technology 50A and 50B; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Four and one-half hours lecture per week. Fifty four hours lecture per quarter.</i>            Principles of operation, service and repair procedures of automatic transmissions. Hydraulic and mechanical system operation. Preparation for Automotive Service Excellence (ASE) certification examination A2.</p>	<p><b>AUTO 65V</b>      <b>California ASE Alternative Training L1</b>      <b>2 1/2 Units</b>  <i>Advisory: Automotive Service Excellence (ASE) Certification A6 and A8; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Two and one-half hours lecture per week. Thirty hours lecture per quarter.</i>            This course is approved by the Bureau of Automotive Repair (BAR) as an alternative to meet the ASE L1 certification prerequisites for obtaining a smog technician license.</p>
<p><b>AUTO 65W</b>      <b>Advanced Clean Air Car Course</b>      <b>2 1/2 Units</b>  <i>Advisory: Automotive Service Excellence (ASE) Certification A6, A8, and L1; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>  <i>Two and one-half hours lecture per week. Thirty hours lecture per quarter.</i>            Automotive technician training program for California's Inspection and Maintenance Program (I &amp; M Program). This course meets the Bureau of Automotive Repair (BAR) requirement for obtaining an Advanced Emissions Specialist (EA) Smog Check License.</p>	

<b>AUTO 66</b>	<b>Automotive Air Conditioning</b>	<b>4 1/2 Units</b>	<b>AUTO 93A</b>	<b>Automotive Final Drive Train</b>	<b>5 Units</b>
<i>Advisory: Automotive Technology 60; English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112.</i>			<i>Prerequisite: Approved Automotive Technology Course Sequence Contract.</i>		
<i>Four and one-half hours lecture per week. Fifty four hours lecture per quarter.</i>			<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.</i>		
Operation and service of automotive air conditioning refrigeration and electrical control systems. Emphasis on diagnosis and repair of systems. Preparation for Automotive Service Excellence (ASE) certification examination in area A7.			Ten hours lecture-laboratory per week. One hundred twenty hours lecture-laboratory per quarter.		
<b>AUTO 68G</b>	<b>Drivability (General Motors)</b>	<b>1 1/2 Units</b>	<b>AUTO 93B</b>	<b>Standard Transaxles</b>	<b>1 1/2 Units</b>
<b>AUTO 68H</b>	<b>Drivability (Honda/Acura)</b>	<b>1 1/2 Units</b>	<i>Prerequisite: Approved Automotive Technology Course Sequence Contract.</i>		
<b>AUTO 68J</b>	<b>Drivability (Chrysler)</b>	<b>1 1/2 Units</b>	<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.</i>		
<b>AUTO 68K</b>	<b>Drivability (Datsun/Nissan/ Infiniti)</b>	<b>1 1/2 Units</b>	Three hours lecture-laboratory per week. Thirty six hours lecture-laboratory per quarter.		
<b>AUTO 68L</b>	<b>Drivability (Toyota/Lexus)</b>	<b>1 1/2 Units</b>	Standard transaxles: power flow, service requirements and repair procedures.		
<b>AUTO 68M</b>	<b>Drivability (Mitsubishi, Chrysler Import, Hyundai)</b>	<b>1 1/2 Units</b>	<b>AUTO 93C</b>	<b>Automatic Transmissions</b>	<b>5 Units</b>
<b>AUTO 68N</b>	<b>Drivability (Mazda)</b>	<b>1 1/2 Units</b>	<i>Prerequisite: Approved Automotive Technology Course Sequence Contract.</i>		
<b>AUTO 68P</b>	<b>Drivability (Subaru)</b>	<b>1 1/2 Units</b>	<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.</i>		
<b>AUTO 68Q</b>	<b>Drivability (Isuzu)</b>	<b>1 1/2 Units</b>	Ten hours lecture-laboratory per week. One hundred twenty hours lecture-laboratory per quarter.		
<b>AUTO 68R</b>	<b>Drivability (Ford)</b>	<b>1 1/2 Units</b>	Operation of automatic transmissions including torque converters, hydraulic control, planetary gear train, clutch and band operation. Inspection and repair procedures for automatic transmissions.		
<b>AUTO 68S</b>	<b>Drivability (BMW)</b>	<b>1 1/2 Units</b>	<b>AUTO 93D</b>	<b>Automatic Transaxles</b>	<b>1 1/2 Units</b>
<i>Advisory: Automotive Technology 60B.</i>			<i>Prerequisite: Approved Automotive Technology Course Sequence Contract.</i>		
<i>One and one-half hours lecture per week each course. Eighteen hours lecture per quarter each course.</i>			<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.</i>		
<i>Pass-No Pass (P-NP) course.</i>			Three hours lecture-laboratory per week. Thirty six hours lecture-laboratory per quarter.		
Causes, repairs, and manufacturers' modifications to correct engine drivability problems of specific vehicles.			A detailed study of automatic transaxles. Power flow, service requirements and repair procedures will be covered.		
<b>AUTO 69X</b>	<b>Smog Check Update</b>	<b>1 Unit</b>	<b>AUTO 93E</b>	<b>Diagnostic Techniques</b>	<b>1 Unit</b>
<b>AUTO 69Y</b>		<b>1 1/2 Units</b>	<i>Prerequisite: Approved Automotive Technology Course Sequence Contract.</i>		
<b>AUTO 69Z</b>		<b>2 Units</b>	<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.</i>		
<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173; Mathematics 101 or 112. Current CA Smog Check License.</i>			Two hours lecture-laboratory per week. Twenty four hours lecture-laboratory per quarter.		
<i>One hour lecture for each unit of credit.</i>			Diagnostic techniques for problem solving in the automotive and light duty truck power train.		
<i>(Any combination of Automotive Technology 69X, 69Y, or 69Z may be taken up to six times for credit.)</i>			<b>AUTO 93F</b>	<b>Automotive Transmission Service</b>	<b>5 Units</b>
This course is legally mandated by the California Bureau of Automotive Repair (BAR) to obtain a renewal Smog Check License every two years. This applies to all State Licensed Smog Check Technicians. The latest Smog Check Program changes and updates will be covered. The State Smog Check License renewal examination will be given at the end of the course. The unit value of the course will depend on the curriculum and hours of instruction specified by BAR for the current two year cycle.			<i>Prerequisite: Approved Automotive Technology Course Sequence Contract.</i>		
<b>AUTO 91A</b>	<b>Automotive Brake Systems</b>	<b>5 Units</b>	<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.</i>		
<i>Prerequisite: Approved Automotive Technology Course Sequence Contract.</i>			Ten hours lecture-laboratory per week. One hundred twenty hours lecture-laboratory per quarter.		
<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.</i>			Operation of rear axles, transfer cases, clutches, automatic and standard transmissions and transaxles. Diagnostic, inspection and repair procedures for these power train components.		
Ten hours lecture-laboratory per week.			<b>AUTO 94A</b>	<b>Principles of Four Stroke Cycle Gas and Diesel Engines</b>	<b>5 Units</b>
Repair, maintenance and troubleshooting of automotive braking systems.			<i>Prerequisite: Automotive Technology 50B; approved Automotive Technology Course Sequence Contract.</i>		
<b>AUTO 91B</b>	<b>Active Brake Systems</b>	<b>1 1/2 Units</b>	<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.</i>		
<i>Prerequisite: Automotive Technology 91A.</i>			Ten hours lecture-laboratory per week. One hundred twenty hours lecture-laboratory per quarter.		
<i>Three hours lecture-laboratory per week.</i>			Shop operations specific to engine repair and rebuilding including safety and hazardous waste management. Emphasis on theory, diagnosis, disassembly, cleaning, inspection and failure analysis.		
Repair, maintenance and troubleshooting of automotive active/antilock brake systems.			<b>AUTO 94B</b>	<b>Automotive Machining and Engine Service</b>	<b>5 Units</b>
<b>AUTO 92A</b>	<b>Automotive Steering and Suspension</b>	<b>5 Units</b>	<i>Prerequisite: Automotive Technology 94A; approved Automotive Technology Course Sequence Contract.</i>		
<i>Prerequisite: Approved Automotive Technology Course Sequence Contract.</i>			<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.</i>		
<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.</i>			Ten hours lecture-laboratory per week. One hundred twenty hours lecture-laboratory per quarter.		
Ten hours lecture-laboratory per week.			Reconditioning cylinder heads and related valve train components including crack detection, repair, testing and assembly. Resurfacing cylinder heads.		
Repair, maintenance and troubleshooting of suspension and steering systems.			<b>AUTO 94C</b>	<b>Automotive Machining and Engine Service</b>	<b>5 Units</b>
<b>AUTO 92B</b>	<b>Automotive Alignment</b>	<b>5 Units</b>	<i>Prerequisite: Automotive Technology 94B; approved Automotive Technology Course Sequence Contract.</i>		
<i>Prerequisite: Automotive Technology 92A. Approved Automotive Technology Course Sequence Contract.</i>			<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.</i>		
<i>Ten hours lecture-laboratory per week.</i>			Ten hours lecture-laboratory per week. One hundred twenty hours lecture-laboratory per quarter.		
Automotive alignment systems, including repair, maintenance and troubleshooting. Service and repair procedures.			Reconditioning engine short block assemblies and components including balancing, assembly and testing.		
<b>AUTO 92C</b>	<b>Automotive Electronic Chassis Controls</b>	<b>1 1/2 Units</b>	<b>AUTO 94D</b>	<b>Automotive Machining and Engine Service</b>	<b>5 Units</b>
<i>Prerequisite: Automotive Technology 92B.</i>			<i>Prerequisite: Automotive Technology 94B; approved Automotive Technology Course Sequence Contract.</i>		
<i>Three hours lecture-laboratory per week. Thirty six hours lecture-laboratory per quarter.</i>			<i>Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.</i>		
Computer controlled automotive suspension and steering systems, including repair, maintenance, troubleshooting, and service procedures.			Ten hours lecture-laboratory per week. One hundred twenty hours lecture-laboratory per quarter.		
<b>AUTO 92D</b>	<b>Uni-Body Alignment</b>	<b>1 1/2 Units</b>	Reconditioning engine short block assemblies and components including balancing, assembly and testing.		
<i>Prerequisite: Automotive Technology 92C.</i>					
<i>Three hours lecture-laboratory per week.</i>					
Gauging, analyzing, repairing and alignment of uni-body systems.					

**AUTO 94D Automotive Machining and Engine Service 5 Units**  
*Prerequisite: Automotive Technology 94C; approved Automotive Technology Course Sequence Contract.*  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Ten hours lecture-laboratory per week. One hundred twenty hours lecture-laboratory per quarter.*  
Precision and performance engine preparation with emphasis on improvements in volumetric efficiency. Includes selection and matching of components for maximum efficiency within mandated emissions requirements.

**AUTO 94E Automotive Machining and Engine Service 5 Units**  
*(Formerly Automotive Technology 94EA.)*  
*Prerequisite: Automotive Technology 94D.*  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Ten hours lecture-laboratory per week. One hundred twenty hours lecture-laboratory per quarter.*  
*(May be taken three times for credit.)*  
Complete automotive machine shop practice including engine repair, assembly, testing, and installation. Researching service and installation procedures and parts and labor estimating.

**AUTO 94F Automotive Machining and Engine Service 5 Units**  
*(Formerly Automotive Technology 94EB.)*  
*Prerequisite: Automotive Technology 94E.*  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Ten hours lecture-laboratory per week. One hundred twenty hours lecture-laboratory per quarter.*  
*(May be taken three times for credit.)*  
Practice and skill development with emphasis on precision and productivity in rebuilding, servicing, and installing engines. Research and prepare equipment operation and maintenance instructions.

**AUTO 99A Automotive Electricity, Battery, and Cranking Systems 6 1/4 Units**  
*Prerequisite: Automotive Technology 50B; approved Automotive Technology Course Sequence Contract.*  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Twelve and one-half hours lecture-laboratory per week. One hundred fifty hours lecture-laboratory per quarter.*  
*(May be taken three times for credit.)*  
Automotive electricity including the electron theory, fundamentals of circuit construction and interpretation, principles of magnetism as applied to electric motors, relays and coils. Diagnosis, troubleshooting and servicing of automotive battery and cranking systems including system repair procedures. Developing skills in the use of test equipment including the DVOM and electrical load testing tools for the analysis and diagnosis of these types of electrical systems.

**AUTO 99B Automotive Charging, Ignition, and Accessory Systems 6 1/4 Units**  
*Prerequisite: Automotive Technology 99A; approved Automotive Technology Course Sequence Contract.*  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Twelve and one-half hours lecture-laboratory per week. One hundred fifty hours lecture-laboratory per quarter.*  
*(May be taken three times for credit.)*  
The fundamentals of automotive electronic devices as they apply to the automotive charging and ignition systems. Emphasis on diagnosis of these systems using test instruments including the oscilloscope. Introduction to automotive accessory systems including wiring and repair techniques. Skill development in the understanding of the electrical wiring diagram networks as provided by manufacturers.

**AUTO 99C Introduction to Engine Performance Systems 6 1/4 Units**  
*Prerequisite: Automotive Technology 99B; approved Automotive Technology Course Sequence Contract.*  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Twelve and one-half hours lecture-laboratory per week. One hundred fifty hours lecture-laboratory per quarter.*  
*(May be taken three times for credit.)*  
Electronically controlled automotive systems. Fundamentals of automotive microprocessors and automotive onboard computers. Testing techniques for system input and output devices. Diagnosis, troubleshooting, and repairing the automotive fuel supply system including carburetion and feedback carburetion. Diagnosis, troubleshooting, and repair techniques for no-start conditions. Procedure development for analyzing and repairing common problems of fuel, ignition, electrical and basic engine mechanical systems which effect engine performance of the automobile.

**AUTO 99D Intermediate Engine Performance Systems 6 1/4 Units**  
*Prerequisite: Automotive Technology 99C; approve Automotive Technology Course Sequence Contract.*  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Twelve and one-half hours lecture-laboratory per week. One hundred fifty hours lecture-laboratory per quarter.*  
*(May be taken three times for credit.)*  
Electronically controlled engine performance systems. Diagnosing, troubleshooting, and repairing the automotive fuel-injection systems of domestic automobiles. Testing techniques for system input and output devices using automotive scanners and oscilloscopes.

**AUTO 99E Basic Engine Performance Diagnostic Procedures 6 1/4 Units**  
*Prerequisite: Automotive Technology 99D; approved Automotive Technology Course Sequence Contract.*  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Twelve and one-half hours lecture-laboratory per week. One hundred fifty hours lecture-laboratory per quarter.*  
*(May be taken three times for credit.)*  
Automotive technician training program to include each system which aids in increasing fuel economy and in the reduction of emissions and pollutants from the automobile. Diagnosing and troubleshooting the systems controlling automotive performance and drivability.

**AUTO 99F Intermediate Engine Performance Diagnostic Procedures 6 1/4 Units**  
*Prerequisite: Automotive Technology 99E; approved Automotive Technology Course Sequence Contract.*  
*Advisory: English Writing 100 and Reading 100 (or Language Arts 100), or English as a Second Language 172 and 173 ; Mathematics 101 or 112.*  
*Twelve and one-half hours lecture-laboratory per week. One hundred fifty hours lecture-laboratory per quarter.*  
*(May be taken three times for credit.)*  
Performance tuning of automotive gasoline engines. Emphasis on reference material dealing with repair procedures, specifications, and efficient tune-up procedures. Intermediate level for usage of computer scanners and oscilloscopes. Diagnosing, troubleshooting, and repairing the systems designed for the control of engine temperature.

## Biology

**BIOL 5 Biology of Birds 5 Units**  
*(Formerly Biology 57.)*  
*(See general education pages for the requirement this course meets.)*  
*Advisory: English Writing 1A or English as a Second Language 5.*  
*Four hours lecture, three hours laboratory, one additional hour to be arranged in the Science Center Resource Center (including Saturday field trips).*  
A general introduction to the biology of birds, including anatomy, physiology, ecology, evolution, behavior, diversity, identification, conservation, and relationships between birds and people around the world.

**BIOL 6A Form and Function in the Biological World 6 Units**  
*(See general education pages for the requirement this course meets.)*  
*Prerequisite: Satisfactory score on the Chemistry Placement Exam, or grade of C or better in either Chemistry 1A or 50.*  
*Advisory: English Writing 1A or English as a Second Language 5.*  
*Four hours lecture, six hours laboratory, one additional hour to be arranged in the Science Center Resource Center.*  
Introduction to biology and the scientific method for students beginning the biology majors' series. Study of the structure and physiological processes of living organisms, with an emphasis on plants and animals.

**BIOL 6B Cell and Molecular Biology 6 Units**  
*Prerequisite: Biology 6A.*  
*Advisory: English Writing 1A or English as a Second Language 5; Mathematics 105 or 114.*  
*Four hours lecture, six hours laboratory, one additional hour to be arranged in the Science Center Resource Center.*  
Introduction to cellular structure and function, biological molecules, bioenergetics, and molecular genetics, and cell proliferation. The laboratory includes extensive hands-on experimentation in molecular biology.