Accounting

ACCT 1A Financial Accounting I 5 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Five hours lecture (60 hours total per quarter).
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 1B Financial Accounting II 5 Units
Prerequisite: Accounting 1A.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Five hours lecture (60 hours total per quarter).
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 1C Managerial Accounting 5 Units
Prerequisite: Accounting 1B.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Five hours lecture (60 hours total per quarter).
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 51A Intermediate Accounting 5 Units
Prerequisite: Accounting 1B.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Five hours lecture (60 hours total per quarter).
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 51B Intermediate Accounting 5 Units
Prerequisite: Accounting 1B.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Five hours lecture (60 hours total per quarter).
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 52 Advanced Accounting 5 Units
Prerequisite: Accounting 1B.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Five hours lecture (60 hours total per quarter).
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 58 Auditing 5 Units
Prerequisite: Accounting 1B.
Advisory: Accounting 51A.
Five hours lecture (60 hours total per quarter).
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 64 Payroll and Business Tax Accounting 3 Units
Prerequisite: Accounting 1A.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Mathematics 212 or equivalent.
Three hours lecture (56 hours total per quarter).

All courses are for unit credit and apply to a De Anza associate degree unless otherwise noted.
ACCT 87 AJ Computerized Accounting
Programs I (Microsoft Dynamics GP) 2 Units
Prerequisite: Accounting 1A.
Four hours lecture-laboratory (48 hours total per quarter).
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.

ACCT 88 Excel Spreadsheets for
Accounting 2 Units
Prerequisite: Accounting 1A.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200),
or English as a Second Language 261, 262 and 263; Mathematics 212 or
equivalent; Computer Applications and Office Systems 93AG-AN.
Two hours lecture (24 hours total per quarter).
Fundamentals of electronic spreadsheets using Microsoft Excel software.
Concentration on solving accounting problems and completing accounting
projects with Excel.

ACCT 105 Basic Financial Accounting
Procedures 1 Unit
Advisory: English Writing 200 and Reading 200 (or Language Arts 200),
or English as a Second Language 261, 262 and 263; Accounting 1A.
One hour lecture (12 hours total per quarter).
Procedural aspects of accounting; including the accounting equation, analysis
of business transactions, debit and credit rules, and aspects of the accounting cycle.

Administration of Justice

ADMJ 1 Introduction to Administration
of Justice 4 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211),
or English as a Second Language 272 and 273.
(Also listed as Political Science 10. Students may enroll in either department, but
not both, for credit.)
Four hours lecture (48 hours total per quarter).
The history and philosophy of the 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 premise of crime, punishment and rehabilitation; the
role of education in the administration of justice within a democracy.

ADMJ 3 Concepts of Criminal Law (CP 2) 4 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211),
or English as a Second Language 272 and 273.
(Also listed as Paralegal 3 and Political Science 13. Students may enroll in only
one department for credit.)
Four hours lecture (48 hours total per quarter).
Historical development, philosophy of law and constitutional provisions; definitions,
classification of crime, and their application to the system of administration of
justice. An advanced course in criminal law emphasizing substantive California statutory
criminal code.

ADMJ 5 Community Relations 4 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211),
or English as a Second Language 272 and 273.
Four hours lecture (48 hours total per quarter).
Examination of the roles of community relations and public relations in the
administration of justice. An interdisciplinary study of societal, institutional,
and institutional relations.

ADMJ 11 Federal Courts and
Constitutional Law 4 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211),
or English as a Second Language 272 and 273.
(Also listed as Paralegal 11 and Political Science 11. Students may enroll in only
one department for credit.)
Four hours lecture (48 hours total per quarter).
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
Advisory: English Writing 211 and Reading 211 (or Language Arts 211),
or English as a Second Language 272 and 273.
(Also listed as Paralegal 25 and Sociology 25. Students may enroll in only one
department for credit.)
Four hours lecture (48 hours total per quarter).
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.

All courses are for unit credit and apply to a
De Anza associate degree unless otherwise noted.
ADMJ 61  Criminal Investigation  4 Units
Prerequisite: Administration of Justice 3 or 75.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
Four hours lecture (48 hours total per quarter),
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.

ADMJ 62  Sexual Assault, Police and Community Response  4 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
(Also listed as Psychology 65. Students may enroll in either department, but not both, for credit.)
Four hours lecture (48 hours total per quarter),
Societal and psychological aspects of sexual assault, the perpetrators and the victims; practical application of the police investigation, the criminal justice process, and social service intervention.

ADMJ 64  Administration of Justice Internship  1 Unit
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
Three hours lecture—lab (54 hours total per quarter),
A survey of current conditions in law enforcement, probation, and corrections and social service agencies.

ADMJ 64X  2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
Four hours laboratory per unit of supervised internship in an authorized office or agency (48 hours total for each unit of credit per quarter).
Any combination of Administration of Justice 64X, 64Y, 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 64Y  3 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
(Also listed as Sociology 63. Students may enroll in either department, but not both, for credit.)
Four hours lecture (48 hours total per quarter),
Introduction to major types of crime and criminal behavior, examining demographics and measurement of crime, theories of causation and victimization, crime prevention and crime control.

ADMJ 64Z  4 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
(Also listed as Sociology 63. Students may enroll in either department, but not both, for credit.)
Four hours lecture (48 hours total per quarter),
Introduction to major types of crime and criminal behavior, examining demographics and measurement of crime, theories of causation and victimization, crime prevention and crime control.

ADMJ 69  Administration of Justice Field Trips  1 1/2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
Three hours lecture—lab (54 hours total per quarter),
A survey of current conditions in law enforcement, probation, and corrections and social service facilities in Northern California.

ADMJ 73  Crime and Criminology  4 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
(Also listed as Sociology 73. Students may enroll in either department, but not both, for credit.)
Four hours lecture (48 hours total per quarter),
Introduction to major types of crime and criminal behavior, examining demographics and measurement of crime, theories of causation and victimization, crime prevention and crime control.

ADMJ 74A  Interviewing, Interrogation and Crisis Intervention  4 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
(Also listed as Paralegal 74A and Psychology 74A. Students may enroll in only one department for credit.)
Four hours lecture (48 hours total per quarter),
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 74B  2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
Four hours laboratory (48 hours total per quarter),
Procedures followed by law enforcement and courts in criminal cases; constitutional principles governing those procedures.

ADMJ 75  Principles and Procedures of the Justice System  4 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
(Also listed as Paralegal 75 and Political Science 75. Students may enroll in only one department for credit.)
Four hours lecture (48 hours total per quarter),
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 78  Correctional Investigation  4 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
Four hours lecture (48 hours total per quarter),
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 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
(Also listed as Paralegal 90A. Students may enroll in either department, but not both, for credit.)
Four hours lecture (48 hours total per quarter),
The origin, development, and content of the rules of evidence; kinds of degrees of evidence and rules governing admissibility of evidence.

ADMJ 95  Overview of American Law  4 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
(Also listed as Paralegal 95 and Political Science 95. Students may enroll in only one department for credit.)
Four hours lecture (48 hours total per quarter),
Overview of the major substantive areas of American law: Agency, contracts, constitutional law, corporations, criminal law, family law, property, torts, wills and estates.

Aerospace Studies

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

Anthropology

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 (48 hours total per quarter),
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.

ANTH 1L  Physical Anthropology Laboratory  1 Unit
(See general education pages for the requirement this course meets.)
(Formerly Anthropology 55.)
Three hours laboratory (36 hours total per quarter),
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 (48 hours total per quarter),
The anthropological approach to the study of human behavior from a cross-cultural, comparative perspective. An exploration into the languages, subsistence, 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.

ANTH 3  Introduction to Archaeology  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 (48 hours total per quarter),
Introduction to the field of archaeology within the discipline of anthropology including discussion of scientific methods, the history of archaeology, field and laboratory methods used in the analysis of archaeological data, and theories used to interpret the past. This course explores how archaeologists recover, analyze material and reconstruct ancient cultures and societies. Archaeological ethics and real-world issues concerning looting, collecting, preservation, and the role of indigenous peoples will be examined.

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 (48 hours total per quarter),
Worldwide patterns of cultural transformation, from the earliest foraging societies to the development of agrarian states. The prehistoric interpretation of these changes based upon the comparison of archaeological evidence from Africa, Asia, Europe, the Middle East, the Americas, and Oceania.
Principles and Practices in the four language skills: reading, writing, speaking and listening.
Review of the linguistic functions and grammar structures of first-year Arabic.
The literature, arts, geography, history, and culture of the Arabic-speaking world.
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.
Emphasis is placed on the functional usage of Arabic and communication in context in
the four language skills: reading, writing, speaking and listening.

**Arabic Language**

**ARBC 1**  
Elementary Arabic (First Quarter) 5 Units  
(Formerly Arabic 91.)  
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273.  
(Also listed as Child Development 69. Students may enroll in either department,
but not both, for credit.)  
Three hours lecture (56 hours total per quarter).
The underlying principles of early education, in which national, state, and local
practices will be examined in contrast to options presented through ethnographic
data of diverse cultures.

**ARBC 2**  
Elementary Arabic (Second Quarter) 5 Units  
(Formerly Arabic 92.)  
(See general education pages for the requirement this course meets.)  
Prerequisite: Arabic 1 (equivalent to one year of high school Arabic) or
equivalent.
Five hours lecture (60 hours total per quarter).
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.

**ARBC 3**  
Elementary Arabic (Third Quarter) 5 Units  
(Formerly Arabic 93.)  
(See general education pages for the requirement this course meets.)  
Prerequisite: Arabic 2 (equivalent to two years of high school Arabic) or
equivalent.
Five hours lecture (60 hours total per quarter).
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.

**ARBC 4**  
Intermediate Arabic (First Quarter) 5 Units  
(Formerly Arabic 94.)  
(See general education pages for the requirement this course meets.)  
Prerequisite: Arabic 3 (equivalent to three years of high school Arabic) or
equivalent.
Five hours lecture (60 hours total per quarter).
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. 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.)  
(See general education pages for the requirement this course meets.)  
Prerequisite: Arabic 4 (equivalent to four years of high school Arabic) or
equivalent.
Five hours lecture (60 hours total per quarter).
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.
Emphasis is placed on the functional usage of Arabic and communication in context in
the four language skills: reading, writing, speaking and listening.
ARTS 3G | History of Art: (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. Students may enroll in either department, but not both, for credit.)
Four hours lecture (48 hours total per quarter).
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. Students may enroll in either department, but not both, for credit.)
Four hours lecture (48 hours total per quarter).
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. 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. Students may enroll in either department, but not both, for credit.)
Four hours lecture (48 hours total per quarter).
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. Students may enroll in either department, but not both, for credit.)
Four hours lecture (48 hours total per quarter).
An exploration of the visual arts of Islam in a global context, including comparative analysis of the arts of 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. Students may enroll in either department, but not both, for credit.)
Four hours lecture (48 hours total per quarter).
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 and Art 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 Women's Studies 3C. Students may enroll in either department, but not both, for credit.)
Four hours lecture (48 hours total per quarter).
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 non-western cultures made by women, and in which women serve as subject matter.

ARTS 3TD | American Art: Public and Private 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 (48 hours total per quarter).
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.)
Co-requisite: Arts 3TE students must also enroll in Arts 3TEL.
Advisory: English Writing 1A or English as a Second Language 5.
Four hours lecture (48 hours total per quarter).
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
(See general education pages for the requirement this course meets.)
Co-requisite: Arts 3TEL students must also enroll in Arts 3TE.
Three hours laboratory (36 hours total per quarter).
Pass-No Pass (P-NP) course.
Utilization of studio equipment and materials related to projects assigned in Arts 3TE.

ARTS 4A | Beginning Drawing 3 Units
Prerequisite: Arts 4A.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Arts 8.
Six hours lecture-laboratory (72 hours total per quarter).
Any combination of Arts 4A, 4B, 4C and 4D may be taken up to six times, not to exceed 18 units, for the family of courses.
An introductory course exploring the basic elements and principles of observational drawing, using traditional and experimental media.

ARTS 4B | Intermediate Drawing 3 Units
Prerequisite: Arts 4A.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Arts 8.
Six hours lecture-laboratory (72 hours total per quarter).
Any combination of Arts 4A, 4B, 4C and 4D 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 4C | Life Drawing 3 Units
Prerequisite: Arts 4A.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Arts 4B, 4D and 8.
Six hours lecture-laboratory (72 hours total per quarter).
Any combination of Arts 4A, 4B, 4C and 4D 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; with attention to drawing from life.

ARTS 4D | Representational Drawing 3 Units
(Formerly Arts 74.)
Prerequisite: Arts 4A.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Arts 8.
Six hours lecture-laboratory (72 hours total per quarter).
Any combination of Arts 4A, 4B, 4C and 4D may be taken up to six times, not to exceed 18 units, for the family of courses.
An intermediate level drawing course concentrating on observation and depiction of volume and perspective in a variety of drawing media.

ARTS 8 | Two-Dimensional Design 3 Units
Prerequisite: Arts 4A.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
Six hours lecture-laboratory (72 hours total per quarter).
A foundation course in the use of fundamental design elements and principles for two-dimensional art.

ARTS 10A | Three-Dimensional Design 3 Units
Prerequisite: Arts 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Mathematics 210 or equivalent.
Six hours lecture-laboratory (72 hours total per quarter).
Introduction to design elements and principles as they apply to three-dimensional for two-dimensional form. Idea explorations in various media including wire, clay, plaster, paper, wood metals and found objects.
ARTS 10B Intermediate Three-Dimensional Design 3 Units
Prerequisite: Arts 10A.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200),
or English as a Second Language 261, 262 and 263; Mathematics 210 or equivalent.
Six hours lecture-laboratory (72 hours total per quarter).
(May be taken two times for credit.)
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.

ARTS 12 Design and Color 3 Units
Prerequisite: Arts 4A and 8.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273.
Six hours lecture-laboratory (72 hours total per quarter).
A fundamental course exploring theory and color in the visual arts.

ARTS 14A Watercolor Painting I 3 Units
(Formerly Arts 14.)
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273.
Six hours lecture-laboratory (72 hours total per quarter).
(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.)
A comprehensive introduction to transparent watercolor painting with emphasis on basic techniques.

ARTS 14B Watercolor Painting II 3 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273.
Six hours lecture-laboratory (72 hours total per quarter).
(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.)
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.

ARTS 14C Watercolor Painting III 3 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273.
Six hours lecture-laboratory (72 hours total per quarter).
(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.)
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.

ARTS 15A Acrylic Painting I 3 Units
Prerequisite: Arts 4A and 12.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273.
Six hours lecture-laboratory (72 hours total per quarter).
(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.)
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.

ARTS 15B Acrylic Painting II 3 Units
Prerequisite: Arts 15A.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273.
Six hours lecture-laboratory (72 hours total per quarter).
(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.)
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.

ARTS 15C Acrylic Painting III 3 Units
Prerequisite: Arts 15B.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273.
Six hours lecture-laboratory (72 hours total per quarter).
(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.)
A continuation of Arts 15B with emphasis on processes rather than techniques. Problems in class will relate to aesthetic concerns of idea, content and expression within the acrylic medium.

ARTS 16A Oil Painting I 3 Units
Prerequisite: Arts 4A and 12.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273.
Six hours lecture-laboratory (72 hours total per quarter).
(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.)
An introductory oil painting course exploring the application of the medium 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.

ARTS 16B Oil Painting II 3 Units
Prerequisite: Arts 16A.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273.
Six hours lecture-laboratory (72 hours total per quarter).
(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.)
A continuation of Arts 16A with further emphasis on basic techniques that relate to the unusual characteristics of the medium. Conceptual studies, color theory and aesthetics are primary concerns. Surfaces other than canvas will be required.

ARTS 16C Oil Painting III 3 Units
Prerequisite: Arts 16B.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273.
Six hours lecture-laboratory (72 hours total per quarter).
(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.)
A continuation of Arts 16B with emphasis on processes rather than techniques. Primary concerns include shaped canvasses, glazing techniques, ideas, expression, and aesthetics relating to the oil medium.

ARTS 17 Introduction to Muralism: Democracy in Action 3 Units
(Formerly Arts 64.)
Advisory: English Writing 1A or English as a Second Language 5.
Six hours lecture-laboratory (72 hours total per quarter).
Explores the application of traditional mural making processes and techniques in combination with the practices of building community through civic engagement. Examines the connection between the arts and community and the role they can play in building bridges and strengthening democratic practices.

ARTS 18A Ceramics 3 Units
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or
English as a Second Language 261, 262 and 263.
Six hours lecture-laboratory (72 hours total per quarter).
(May be taken two times for credit. Students build upon previous experience and develop higher-level skills.)
Survey of ceramic construction techniques. Use of surface decoration, glazes, and ceramic slab firing.

ARTS 18B Ceramics (Beginning Wheel Throwing) 3 Units
Prerequisite: Arts 18A.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or
English as a Second Language 261, 262 and 263.
Six hours lecture-laboratory (72 hours total per quarter).
(May be taken two times for credit. Students build upon previous experience and develop higher-level skills.)
Beginning techniques of throwing on the potter's wheel. Forming, shaping, trimming, and decorating basic wheel thrown pieces. Use of stoneware firing techniques and processes in Ceramics (Arts 18A).

ARTS 18C Ceramics (Intermediate Wheel Throwing) 3 Units
Prerequisite: Arts 18B.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or
English as a Second Language 261, 262 and 263.
Six hours lecture-laboratory (72 hours total per quarter).
(May be taken two times for credit. Students build upon previous experience and develop higher-level skills.)
Intermediate techniques of throwing on the potter's wheel. Forming, shaping, trimming, and surface development of intermediate wheel thrown pieces. Builds upon throwing techniques and processes in Beginning Wheel Throwing (Arts 18B).

ARTS 18D Ceramics Hand Building 3 Units
(Formerly Arts 66D.)
Prerequisite: Arts 18A.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or
English as a Second Language 261, 262 and 263.
Six hours lecture-laboratory (72 hours total per quarter).
(May be taken two times for credit. Students build upon previous experience and develop higher-level skills.)
Ceramic construction techniques: use of pinch, coil and slab processes. Use of a variety of clay bodies and various firing techniques associated with functional and non-functional ceramic work.

All courses are for unit credit and apply to a De Anza associate degree unless otherwise noted.
Art 18E Ceramics (Advanced Wheel Throwing) 3 Units
(Formerly Art 80.)
Prerequisite: Art 18C.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or
English as a Second Language 261, 262 and 263.
Six hours lecture-laboratory (72 hours total per quarter).
(May be taken two times for credit. Students build upon previous experience and
develop higher-level skills.)
Advanced techniques of throwing on the potter’s wheel. Introduction to combined
forms and developing the vessel as an aesthetic object. Development of shapes,
function and individual expression with clay.

Art 19G Ceramic Glaze Calculation 3 Units
Prerequisite: Art 18A.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or
English as a Second Language 261, 262 and 263.
Six hours lecture-laboratory (72 hours total per quarter).
(May be taken two times for credit. Students build upon previous experience and
develop higher-level skills.)
Glaze calculation, application, study of ceramic materials, kiln firing techniques
with student developed glazes.

Art 19H Ceramics Raku 3 Units
Prerequisite: Art 18A.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or
English as a Second Language 261, 262 and 263.
Six hours lecture-laboratory (72 hours total per quarter).
(May be taken two times for credit. Students build upon previous experience and
develop higher-level skills.)
Historical development, firing techniques, glaze, kilns and clay-bodies, for the
Raku ceramic process.

Art 19I Ceramic Sculpture 3 Units
Prerequisite: Art 18A.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or
English as a Second Language 261, 262 and 263.
Six hours lecture-laboratory (72 hours total per quarter).
(May be taken two times for credit. Students build upon previous experience and
develop higher-level skills.)
Use of clay as a sculptural and expressive medium; texture, surface, dimensionality,
and form.

Art 19J Ceramic Techniques 3 Units
Prerequisite: Art 18A.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or
English as a Second Language 261, 262 and 263.
Six hours lecture-laboratory (72 hours total per quarter).
(May be taken two times for credit. Students build upon previous experience and
develop higher-level skills.)
Techniques of hand-building and wheel construction combined: experimental
glazing and texturing treatments.

Art 19K Ceramic Decoration 3 Units
Prerequisite: Art 18A.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or
English as a Second Language 261, 262 and 263.
Six hours lecture-laboratory (72 hours total per quarter).
(May be taken two times for credit. Students build upon previous experience and
develop higher-level skills.)
Surface treatments and refinement used in the production of stoneware, earthenware,
and porcelain.

Art 19M Ceramics Low Fire 3 Units
Prerequisite: Art 18A.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or
English as a Second Language 261, 262 and 263.
Six hours lecture-laboratory (72 hours total per quarter).
(May be taken two times for credit. Students build upon previous experience and
develop higher-level skills.)
Survey of earthenware as a ceramic material. Use of surface decoration, glazes,
and ceramic kiln firing.

Art 19N Ceramics Porcelain 3 Units
(Formerly Art 64N)
Prerequisite: Art 18A.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or
English as a Second Language 261, 262 and 263.
Six hours lecture-laboratory (72 hours total per quarter).
(May be taken two times for credit. Students build upon previous experience and
develop higher-level skills.)
Survey of porcelain as a ceramic material. Use of surface decoration, glazes, and
ceramic kiln firing.
ARTS 55A  Graphic Design-Communication  3 Units  
Prerequisite: Arts 53A.  
Six hours lecture-laboratory (72 hours total per quarter).  
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, Adobe Illustrator and Adobe InDesign.

ARTS 55B  Graphic Design-Communication  3 Units  
Prerequisite: Arts 55A.  
Six hours lecture-laboratory (72 hours total per quarter).  
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 Adobe InDesign.

ARTS 55C  Graphic Design-Communication: Production Techniques  3 Units  
Prerequisite: Arts 55B or demonstration of appropriate technical abilities suitable to course level.  
Six hours lecture-laboratory (72 hours total per quarter).  
Intermediate 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, Adobe InDesign and Adobe Flash.

ARTS 56  Graphic Design/Page Layout for Electronic Publishing  3 Units  
Prerequisite: Arts 53A.  
Advisory: Arts 55A.  
Six hours lecture-laboratory (72 hours total per quarter).  
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. Primary software presented is Adobe InDesign. Other programs used are Adobe Photoshop and Adobe Illustrator.

ARTS 57  Graphic Design-Communication: Typography  3 Units  
Prerequisite: Arts 55B.  
Six hours lecture-laboratory (72 hours total per quarter).  
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 210 or equivalent; Arts 10A.  
Six hours lecture-laboratory (72 hours total per quarter).  
(Any combination of Arts 58A, 58B and 58C may be taken up to six times, not to exceed 18 units, as long as the topics are different each time.)  
Beginning furniture design with emphasis on developing basic skills in design, construction and craftsmanship.

ARTS 58B  Intermediate Furniture Design  3 Units  
Prerequisite: Arts 58A.  
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Mathematics 210 or equivalent.  
Six hours lecture-laboratory (72 hours total per quarter).  
(Any combination of Arts 58A, 58B and 58C may be taken up to six times, not to exceed 18 units, 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.

ARTS 58C  Advanced Furniture Design  3 Units  
Prerequisite: Arts 58B.  
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Mathematics 210 or equivalent.  
Six hours lecture-laboratory (72 hours total per quarter).  
(Any combination of Arts 58A, 58B and 58C may be taken up to six times, not to exceed 18 units, as long as the topics are different each time.)  
Advanced furniture design, with an emphasis on individual projects and further development on skills in design, construction and craftsmanship.

ARTS 59  History of Graphic Design  4 Units  
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.  
Four hours lecture (48 hours total per quarter).  
A history of word and image from the Industrial Revolution, through 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 postmodern design.

ARTS 63  Business Practices for Graphic Designers  3 Units  
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.  
Three hours lecture (36 hours total per quarter).  
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 53B.  
Six hours lecture-laboratory (72 hours total per quarter).  
Hands on Web page design fundamentals with an emphasis 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, grids, white space, visual hierarchy, corporate identity, branding and typography issues. The primary software programs used are Adobe Photoshop CS and Adobe Illustrator CS.

ARTS 70  Viewing Bay Area Art Museums and Galleries  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 (36 hours total per quarter).  
(May be taken up to six times for credit as long as the topics/projects are different each time.)  
Designed to develop skills in art gallery/museum viewing and critical analysis of content of exhibits, collections and/or lectures.

ARTS 71  Gallery and Exhibition Design  3 Units  
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Arts 4A or 8.  
Six hours lecture-laboratory (72 hours total per quarter).  
The 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: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Arts 1A, 4A, 8, 10A and 71.  
Three hours laboratory (36 hours total per quarter).  
(May be taken up to six times for credit as long as the topics/projects are different each time.)  
Directed professional experience in art museums/galleries, art businesses, and art in school programs in the Bay Area that emphasize the application of skills and knowledge obtained in Gallery and Exhibition Design (Arts 71). Beginning Drawing (Arts 4A), Two-Dimensional Design (Arts 8), and Three-Dimensional Design (Arts 10A).

ARTS 83A  Digital Imaging Software (Photoshop)  4 Units  
(Formerly Arts 112A,)  
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 90GA.  
(Also listed as Computer Applications and Office Systems 83A. Students may enroll in either department, but not both, for credit.)  
Eight hours lecture-laboratory (96 hours total per quarter).  
Basic and intermediate principles using digital imaging software to produce graphics for websites and business documents.

ARTS 85  Motion Graphics  3 Units  
Prerequisite: Arts 55B.  
(Also listed as Film/Television 85. Students may enroll in either department, but not both, for credit.)  
Six hours lecture-laboratory (72 hours total per quarter).  
The analysis and interpretation of the art and design involved in the production of graphic design to be viewed in non-print media (film, CRT & LCD screens). The creative integration of “type” and “image” in motion is stressed through the use of directed laboratory exercises. Primary software presented is Adobe After Effects. Other software used includes Adobe Photoshop, Adobe Illustrator and Adobe Flash.
ARTS 86 Electronic Illustration Techniques 3 Units
Prerequisite: Arts 53B.
Six hours lecture-laboratory (72 hours total per quarter).
Introduction to industry standard software related to the creation and implementation of computer-generated illustration. Emphasis is placed 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, packaging illustration, charts/diagrams/graphs, and 3D illustration dynamics. The primary software program presented is Adobe Illustrator CS. Adobe Photoshop CS will also be used.

ARTS 113A Web Authoring Software 4 Units
(Dreamweaver)
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 905A and 102N.
(Also listed as Computer Applications and Office Systems 113A. Students may enroll in either department, but not both, for credit.)
Eight hours lecture-laboratory (96 hours total per quarter).
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 website.

ARTS 114A Web Graphics/Animation Software (Flash) 3 Units
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 83A or Arts 83A.
(Also listed as CAD and Digital Imaging 114A and Computer Applications and Office Systems 114A. Students may enroll in only one department for credit.)
Six hours lecture-laboratory (72 hours total per quarter).
Pass-No Pass (P-NP) course.
Basic and intermediate principles of graphicsanimation for the Web. Web graphicsanimation terminology and software. This course is for the content person to build a website.

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 (60 hours total per quarter).
Analyze the physical principles, logic, and development of solar system astronomy from ancient times through the present. 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 our 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 (60 hours total per quarter).
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 deepspace 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 2 Units
ASTR 77Y 3 Units
Prerequisite: Consent of instructor and division dean.
Three hours laboratory for each unit of credit (36 total hours for each unit of credit per quarter). (Any combination of Astronomy 77, 77X and 77Y may be taken up to six times, not to exceed 18 units, as long as the projects are different each time.)
Pass-No Pass (P-NP) course.
Individual research in Astronomy. Specific projects to be determined in consultation with the instructor. Outside reading and written report(s) required. These projects are on topics not covered in the regular Astronomy curriculum and require the approval of the PSM&E Division Dean.

Automotive Technology

AUTO 50A Introduction to Automotive Principles 4 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Four hours lecture (48 hours total per quarter).
A selective study of the automobile's engine and drivetrain systems. Knowledge and skills necessary for basic repair, maintenance, and troubleshooting of today's engine systems. May be used to fulfill the prerequisite to the Automotive Technology Program.

AUTO 50B Applied Automotive Principles 2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 50A (may be taken concurrently).
Four hours lecture-laboratory (48 hours total 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 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Four hours lecture (48 hours total 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
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 51A (may be taken concurrently).
Four hours lecture-laboratory (48 hours total 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 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Six hours lecture-laboratory (72 hours total 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 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Four hours lecture-laboratory (48 hours total per quarter).

AUTO 57A Career Research and Employment in the Automotive Industry 2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Two hours lecture (24 hours total per quarter).
Career research in the automotive industry: job search, applications and resumes, employer-employee relationships, job interviews.

AUTO 60 Automotive Electrical Systems 9 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 50A and 50B.
Nine hours lecture (108 hours total 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
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 60.
Four and one-half hours lecture (54 hours total 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.

All courses are for unit credit and apply to a De Anza associate degree unless otherwise noted.
AUTO 60B  Automotive Electronics  4 1/2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273; Mathematics 212 or equivalent;
Automotive Technology 50A, 50B, 60 and 60A.
Four and one-half hours lecture (54 hours total per quarter).
Application of diagnostic principles for automotive electronic 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 Emmission Systems  9 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273; Mathematics 212 or equivalent;
Automotive Technology 50A, 50B, 60, 60A and 60B.
Nine hours lecture (108 hours total 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: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273; Mathematics 212 or equivalent;
Automotive Technology 50A, 50B, 60, 60A, 60B and 60C.
Four and one-half hours lecture (54 hours total 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
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273; Mathematics 212 or equivalent;
Automotive Technology 50A, 50B, 60, 60A, 60B, 60C, 60D and 60E.
Four and one-half hours lecture (54 hours total 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 A6, A8 and L1.

AUTO 60F  No-Start Diagnosis  4 1/2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273; Mathematics 212 or equivalent;
Automotive Technology 50A, 50B, 60, 60A, 60B and 60C.
Four and one-half hours lecture (54 hours total per quarter).
Principles of troubleshooting procedures and techniques to analyze and repair of
“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
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273; Mathematics 212 or equivalent;
Automotive Technology 50A, 50B, 60, 60A, 60B, 60C, 60D and 60E.
Four and one-half hours lecture (54 hours total 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
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273; Mathematics 212 or equivalent;
Automotive Technology 50A, 50B, 60, 60A, 60B, 60C, 60D and 60E.
Four and one-half hours lecture (54 hours total 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 60I  Advanced Lab Scope and Waveform Diagnosis  4 1/2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273; Mathematics 212 or equivalent;
Automotive Technology 50A, 50B, 60, 60C, 60D, 60E, 60F and 60G.
Four and one-half hours lecture (54 hours total 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

AUTO 60J  Automotive Body Electrical Systems  4 1/2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or
English as a Second Language 272 and 273; Mathematics 212 or equivalent;
Automotive Technology 50A and 50B.
Nine hours lecture (108 hours total per quarter).
Preparation for Automotive Service Excellence (ASE) certification examination in Area A2.
AUTO 63A Automotive Drive Train 4 1/2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 50A and 50B. Four and one-half hours lecture (54 hours total per quarter). 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 in Area A3.

AUTO 63B Automatic Transmission 4 1/2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 50A and 50B. Four and one-half hours lecture (54 hours total per quarter). Principles of operation, service and repair procedures of automatic transmissions, hydraulic and mechanical system operation. Preparation for Automotive Service Excellence (ASE) certification examination in Area A2.

AUTO 63C Automotive Transaxles 4 1/2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 50A and 50B. Four and one-half hours lecture (54 hours total per quarter). 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 in Area A2.

AUTO 63D Transmission Diagnostic and Repair Techniques 4 1/2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 50A and 50B. Four and one-half hours lecture (54 hours total per quarter). 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 examinations in Areas A2 and A3.

AUTO 64 Automotive Machining and Engine Repair 9 Units
(Formerly Automotive Technology 64A and 64B.)
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 50B. Nine hours lecture (108 hours total per quarter). 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 in Areas A1 and M1, M2 and M3.

AUTO 64HP High Performance Engine Preparation 9 Units
Advisory: Automotive Technology 64; English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent. Nine hours lecture (108 hours total per quarter). Precision and performance engine preparation. Includes selection and matching of engine and valve train components for maximum efficiency and output.

AUTO 65P Clean Air Car Course 7 Units
Prerequisite: Automotive Technology 60, 60B, 60E and one year of related automotive experience. Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent. Seven hours lecture (84 hours total per quarter). Automotive technician training program for California’s Inspection and Maintenance Program (I&M Program). Course content is mandated by the BAR.

AUTO 65R California ASE Alternative Training A6 2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 60, 60A and 60B. Two hours lecture (24 hours total per quarter). Review of On-board Diagnostics Generation I (OBDI). Extensive coverage of On-board Diagnostics Generation II (OBDII) operating system, testing procedures and strategies. Preparation for Automotive Service Excellence (ASE) examination in Areas A6, A8, A1 and Inspection and Maintenance (I&M) technician update requirements.

AUTO 65S California ASE Alternative Training A8 2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 60, 60A, 60B and 60C. Two hours lecture (24 hours total per quarter). An approved course by the Bureau of Automotive Repair (BAR) as an alternative to meet the ASE A8 certification prerequisites for obtaining a smog technician license.

AUTO 65V California ASE Alternative Training L1 2 1/2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Service Excellence (ASE) Certification A6 and A8. Two and one-half hours lecture (30 hours total per quarter). Approved by the Bureau of Automotive Repair (BAR) as an alternative to meet the ASE L1 certification prerequisites for obtaining a smog technician license.

AUTO 65W Advanced Clean Air Car Course 2 1/2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 60. Four and one-half hours lecture (54 hours total per quarter). Operation and service of automotive air conditioning refrigeration and electrical control systems. Includes retrofitting. Emphasis on diagnosis and repair of systems. Preparation for Automotive Service Excellence (ASE) certification examination in Area A7.

AUTO 66 Automotive Air Conditioning 4 1/2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 60. Four and one-half hours lecture (54 hours total per quarter). Principles of operation, service and repair procedures of automatic transmissions and transaxles. Emphasis on development of diagnostic procedures and repair techniques. Preparation for Automotive Service Excellence (ASE) certification examinations in Areas A2 and A3.

AUTO 69X Smog Check Update 1 Unit
AUTO 69Y 1 1/2 Units
AUTO 69Z 2 Units
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Current CA Smog Check License.

One hour lecture for each unit of credit (12 hours total for each unit of credit per quarter). (Any combination of Automotive Technology 69X, 69Y, and 69Z may be taken up to six times for credit.)

Legally mandated course 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 BAR will specify the number of units required during each two year cycle.

AUTO 91A Automotive Brake Systems 5 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract. Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent; Automotive Technology 50A and 50B. Ten hours lecture-laboratory (120 hours total per quarter). Repair, maintenance and troubleshooting of automotive braking systems.

AUTO 91B Active Brake Systems 1 1/2 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract; Automotive Technology 91A.

Three hours lecture-laboratory (36 hours total per quarter). Repair, maintenance and troubleshooting of automotive active/anti-lock brake systems.

AUTO 92A Automotive Steering and Suspension 5 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract; Automotive Technology 92A.

Ten hours lecture-laboratory (120 hours total per quarter). Automotive alignment systems, including repair, maintenance and troubleshooting, Service and repair procedures.
Cycle Gas and Diesel Engines  5 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract; Automotive Technology 94B.
Three hours lecture-laboratory (36 hours total per quarter).
Computer controlled automotive suspension and steering systems, including repair, maintenance, troubleshooting, and service procedures.

AUTO 92D Uni-Body Alignment  5 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract; Automotive Technology 92C.
Three hours lecture-laboratory (36 hours total per quarter).
Gaging, analyzing, repairing and alignment of uni-body systems.

AUTO 93A Automotive Final Drive Train  5 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Twelve and one-half hours lecture-laboratory (150 hours total per quarter).
A detailed study of automotive transmissions. Power flow, service requirements and repair procedures will be covered.

AUTO 93B Standard Transaxes  1 1/2 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Standard transaxes: power flow, service requirements and repair procedures.

AUTO 93C Automatic Transmissions  5 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Ten hours lecture-laboratory (120 hours total per quarter).
Operation of automatic transmissions including torque converters, hydraulic control, planetary gear train, clutch and band operation. Inspection and repair procedures for automatic transmissions.

AUTO 93D Automatic Transaxes  1 1/2 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Three hours lecture-laboratory (36 hours total per quarter).
A detailed study of automatic transaxes. Power flow, service requirements and repair procedures will be covered.

AUTO 93E Diagnostic Techniques  1 Unit
Prerequisite: Approved Automotive Technology Course Sequence Contract.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Diagnotic techniques for problem solving in the automotive and light duty truck powertrain.

AUTO 93F Automotive Transmission Service  5 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Ten hours lecture-laboratory (120 hours total per quarter).
Operation of rear axles, transfer cases, clutches, automatic and standard transmissions and transaxes. Diagnostic, inspection and repair procedures for these powertrain components.

AUTO 94A Principles of Four Stroke Cycle Gas and Diesel Engines  5 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract; Automotive Technology 94A.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Ten hours lecture-laboratory (120 hours total per quarter).
Reconditioning cylinder heads and related valve train components including crack detection, repair, testing and assembly. Resurfacing cylinder heads.

AUTO 94C Automotive Machining and Engine Service  5 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract; Automotive Technology 94B.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Ten hours lecture-laboratory (120 hours total per quarter).
Reconditioning engine short block assemblies and components including balancing, assembly and testing.

AUTO 94D Automotive Machining and Engine Service  5 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract; Automotive Technology 94C.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Ten hours lecture-laboratory (120 hours total 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 94E.A.)
Prerequisite: Automotive Technology 94D.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Ten hours lecture-laboratory (120 hours total per quarter).
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 94E.B.)
Prerequisite: Automotive Technology 94E.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Twelve and one-half hours lecture-laboratory (150 hours total per quarter).
(May be taken up to 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 99A Automotive Electricity, Battery and Cranking Systems  6 1/4 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract; Automotive Technology 50B.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Twelve and one-half hours lecture-laboratory (150 hours total per quarter).
(May be taken up to 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 99B Automotive Charging, Ignition and Accessory Systems  6 1/4 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract; Automotive Technology 99A.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Twelve and one-half hours lecture-laboratory (150 hours total per quarter).
(May be taken up to 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.

All courses are for unit credit and apply to a De Anza associate degree unless otherwise noted.
**Biology**

**BIOI 8** Biology of Women
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 (48 hours total per quarter).
Designed for non-science majors to explore women’s anatomical and physiological characteristics and their management for good health. The emphasis is on the biological processes and principles organizing a “typical” female life progression, with a secondary focus on the structural and functional dimorphism of human body systems. It also aims at recognizing components of the scientific process distorted in the historical view of women and the impact that societal and cultural biases have on behavior and on female health issues.

**BIOI 10** Introductory Biology
5 Units
(Not open to students who have completed Biology 6A, 6B, 6C or equivalent.)
(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 (84 hours total per quarter).
An introduction to biology as a branch of the biological sciences and to its basic unifying principles, with selected application to the scientific method, evolutionary concepts, genetic modification, biotechnology, ecology, ecological crises and human impacts.

**BIOI 11** Human Biology
5 Units
(Not open to students who have completed Biology 6A, 6B, 6C or equivalent.)
(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 (84 hours total per quarter).
A general introduction to biology and its principles, emphasizing the biology of humans. The course will cover the unifying principles of biology, with emphasis on the human anatomy and physiology of the human body, as well as on contemporary health issues and their impacts on cultural, ethnic and gender groups.

**BIOI 13** Marine Biology
5 Units
(See general education pages for the requirement this course meets.)
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
Four hours lecture, three hours laboratory (84 hours total per quarter).
An introduction to physical and chemical oceanography, marine animals, marine plants, and marine ecology with major emphasis on natural history of marine life. Bays, estuaries and open oceans are described as habitats. Marine biology as a branch of the biological sciences, employs the scientific method.

**BIOI 15** California Ecology
5 Units
(See general education pages for the requirement this course meets.)
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273.
Four hours lecture, three hours laboratory (84 hours total per quarter).
An introduction to ecology and field biology as a branch of the biological sciences and its relationship to the scientific method. A review of plant and animal adaptations to the natural environments and the impact of pollution, degradation of habitat, and human population on life.

**BIOI 26** Introductory Microbiology
6 Units
Prerequisite: Biology 40A, 40B and 40C or (Biology 6A, 6B and 6C), or equivalent, all with a grade of C or better.
Four hours lecture, six hours laboratory (120 hours total per quarter).
Introduction to the sciences and the scientific method as exemplified by the study of microbiology. Morphology, metabolism, growth and genetics of bacteria and other microorganisms; chemical and physical means of control; the disease process and immunity. The importance of microorganisms to humankind; techniques and methods of microbiology.

**BIOI 40A** Human Anatomy and Physiology
5 Units
Prerequisite: Satisfactory score on the Biology 40A Placement Test or Chemistry 1A or Chemistry 50 or Chemistry 30A with a grade of C or better.
Four hours lecture, six hours laboratory (120 hours total per quarter).
An introduction to the disciplines of anatomy and physiology. Basic principles of human anatomy and physiology as exemplified in the study of cell chemistry, cell biology, histology and the integumentary, skeletal and muscular systems with emphasis on homestatic mechanisms.

**BIOI 40B** Human Anatomy and Physiology
5 Units
Prerequisite: Biology 40A with a grade of C or better.
Four hours lecture, three hours laboratory (84 hours total per quarter).
Study of the nervous, circulatory, and respiratory systems.

**BIOI 40C** Human Anatomy and Physiology
5 Units
Prerequisite: Biology 40A and 40B, with a grade of C or better.
Four hours lecture, three hours laboratory (84 hours total per quarter).
Study of the endocrine system, lymphatic system, digestive system, metabolism, urinary and reproductive systems, embryological development and classical Mendelian and modern biochemical genetics including genetic engineering.

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**AUTO 99D** Intermediate Engine Performance Systems
6 1/4 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract; Automotive Technology 99C.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Twelve and one-half hours lecture-laboratory (150 hours total per quarter).
(May be taken up to three times for credit.)
Automobile 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 driveability.

**AUTO 99E** Basic Engine Performance Diagnostic Procedures
6 1/4 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract; Automotive Technology 99D.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Twelve and one-half hours lecture-laboratory (150 hours total per quarter).
(May be taken up to 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.

**AUTO 99F** Intermediate Engine Performance Diagnostic Procedures
6 1/4 Units
Prerequisite: Approved Automotive Technology Course Sequence Contract; Automotive Technology 99E.
Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.
Twelve and one-half hours lecture-laboratory (150 hours total per quarter).
(May be taken up to three times for credit.)
Performance tuning of automotive leaded gasoline engines. Diagnosis, troubleshooting, and repair techniques for no-start conditions. Procedures. Intermediate level for usage of computer scanners and oscilloscopes.

**BIOL 5** Biology of Birds
5 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, three hours laboratory (84 hours total per quarter).
A general introduction to the biology of birds and the relationships between birds and people around the world. Examines general avian anatomy and physiology with emphasis on diversity and bird identification and the ecology, behavior and conservation of selected bird species.

**BIOL 6A** Form and Function in the Biological World
6 Units
(See general education pages for the requirement this course meets.)
Prerequisite: A satisfactory score on the Chemistry Placement Exam or a 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 (120 hours total per quarter).
Introduction to biology and scientific methods for students beginning the biology major 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 114 or equivalent.
Four hours lecture, six hours laboratory (120 hours total per quarter).
Introduction to cellular structure and function, biological molecules, bioenergetics, molecular genetics, and cell proliferation. The laboratory includes extensive hands-on experimentation in molecular biology.

**BIOL 6C** Ecology and Evolution
6 Units
Prerequisite: Biology 6A and 6B, with a grade of C or better.
Advisory: English Writing 1A or English as a Second Language 5; Mathematics 114 or equivalent.
Four hours lecture, six hours laboratory (120 hours total per quarter).
Principles of ecology and evolution. Includes ecology of populations, communities, ecosystems and biomes as well as evolution of populations, and the origin of species and higher taxa. The laboratory portion of the course includes a research project designed, researched and presented by students.