

Degree Curricula and Certificate Programs



Degree and Certificate List

| Degree | A.A. Degree | A.S. Degree | Certificate of Achievement | Certificate of Performance | Page |
|---|----------------|----------------|-------------------------------|-------------------------------|------|
| Administration of Justice | | | | | |
| Advanced Traffic Accident Investigation | | | X | | 119 |
| Contemporary Police Technologies | | X | X | | 120 |
| Correctional Technologies | | X | X | | 120 |
| Correctional Training for Deputy Sheriffs | | | X | | 120 |
| Investigations Specialization | | X | X | | 120 |
| Law Enforcement Specialization | | X | X | | 121 |
| Law Enforcement Supervision | | | X | | 121 |
| Law Enforcement Technologies | | | X | | 121 |
| P.C. 832 Laws of Arrest | | | | X | 119 |
| P.C. 832 Laws of Arrest - Firearms | | | | X | 119 |
| Technical Achievement for Field Training Officers | | | X | | 121 |
| Transportation Security | | | | X | 119 |
| Art | | | | | |
| Art/Visual Studies | X | | | | 125 |
| Combined Drawing/Painting | X | | | | 124 |
| Craft Skills | X | | | X | 124 |
| Graphics | X | | X | | 126 |
| Studio Arts | X | | | | 125 |
| Automotive Technology | | | | | |
| Automotive Chassis | | | X | | 128 |
| Automotive Electrical | | | X | | 128 |
| Automotive Engine Performance | | | X | | 128 |
| Automotive Transmissions | | | X | | 128 |
| Automotive Technology | | X | | | 129 |
| Aviation Maintenance Technology | | | | | |
| Airframe | | X | X | | 131 |
| Airframe & Powerplant | | X | X | | 131 |
| Aviation General Studies | | X | X | | 132 |
| Aviation Work Skills | | | | X | 130 |
| Pilot Studies | | X | X | | 132 |
| Powerplant | | X | X | | 132 |
| Aviation Operations | | | | | |
| Commercial Pilot | | | | X | 137 |
| Flight Instructor | | | | X | 137 |
| Helicopter Operations | | | | X | 137 |
| Instrument Pilot | | | | X | 137 |

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|--|------------------------|------------------------|---------------------------------------|---------------------------------------|-------------|
| Management | | X | X | | 138 |
| Private Pilot | | | | X | 137 |
| Professional Pilot | | X | X | | 138 |
| Team Resource Management | | | | X | 137 |
| Biology | | | | | |
| Allied Health Track | | X | | | 140 |
| Applied Biology Track | | X | | | 141 |
| Applied Biotechnology-Analytical Chemistry | | | | X | 140 |
| Applied Biotechnology-Molecular Biology | | | | X | 140 |
| Biology Studies | | X | | | 141 |
| Business Administration | | | | | |
| Business Administration | | X | X | | 143 |
| Business Management | | | | | |
| Accountancy | | X | | | 144 |
| Business Management | | X | X | | 145 |
| Loan Closer | | | | X | 146 |
| Loan Processor | | | | X | 146 |
| Loan Underwriter | | | | X | 146 |
| Mortgage Brokerage & Banking | | X | X | | 147 |
| Chemistry | | | | | |
| Chemistry Studies | | X | | | 148 |
| Child Development | | | | | |
| Assistant Teacher | | | | X | 150 |
| Associate Teacher | | | X | | 151 |
| Child Development | | X | | | 152 |
| Family Child Care | | | | X | 150 |
| Family and Child Relations | | | | X | 150 |
| Human Development Studies | X | | | | 153 |
| Infant/Toddler Care | | | | X | 150 |
| Master Teacher | | | X | | 151 |
| Residential Care Workers | | | | X | 151 |
| Site Supervisor | | X | | | 153 |
| Teacher | | | X | | 152 |
| Communication Studies | | | | | |
| Communication Studies for Transfer | X | | | | 155 |
| Computer Business Technology | | | | | |
| Administrative Assistant | | X | X | X | 157 |

Degree and Certificate List

| Degree | A.A. Degree | A.S. Degree | Certificate of Achievement | Certificate of Performance | Page |
|---|----------------|----------------|-------------------------------|-------------------------------|------|
| Microcomputer Applications | | X | X | | 158 |
| Typist/Word Processor | | | | X | 157 |
| Website Designer | | | | X | 157 |
| Computer and Information Science | | | | | |
| Computer and Information Science | | X | X | | 160 |
| Computer Programming | | | | X | 160 |
| Diesel Technology | | | | | |
| Diesel Equipment Repair Technology | | | X | | 163 |
| Diesel Fuel Injection Systems | | | | X | 162 |
| Engine Overhaul, Caterpillar | | | X | | 163 |
| Engine Overhaul, Cummins | | | X | | 163 |
| Engine Overhaul, Detroit Diesel | | | X | | 163 |
| Engine Repair, Caterpillar | | | X | | 163 |
| Engine Repair, Cummins | | | X | | 164 |
| Engine Repair, Detroit Diesel | | | X | | 164 |
| Heavy Equipment Powertrains | | | | X | 162 |
| Heavy Duty Transportation Technology (HDTT) (Day Program) | | X | X | | 164 |
| Heavy Equipment Technology (HET) (Day Program) | | X | X | | 164 |
| Heavy Equipment Undercarriage Systems | | | | X | 162 |
| Mobile Hydraulics Technician | | | | X | 162 |
| San Diego City Civil Service Equipment Mechanic Apprenticeship | | X | X | | 165 |
| San Diego Transit General Mechanic | | X | X | | 166 |
| Steering, Suspension, & Drivelines | | | | X | 162 |
| Truck Air Brake Systems | | | | X | 162 |
| Truck Drive Axles | | | | X | 163 |
| Truck and Equipment Electrical Systems | | | | X | 162 |
| Truck Transmission and Clutches | | | | X | 163 |
| English | | | | | |
| Advanced ESOL | | | | X | 168 |
| English | X | | | | 168 |
| English/Literature Studies | X | | | | 169 |
| Exercise Science | | | | | |
| Health and Physical Education Studies | | X | | | 171 |
| Fitness Specialist | | | X | | 172 |
| Fire Protection Technology | | | | | |
| Fire Prevention | | X | X | | 174 |

Degree and Certificate List

| Degree | A.A. Degree | A.S. Degree | Certificate of Achievement | Certificate of Performance | Page |
|---|------------------------|------------------------|---------------------------------------|---------------------------------------|-------------|
| Fire Protection | | X | X | | 174 |
| Fire Technology | | X | X | | 175 |
| Open Water Lifeguard Professional | | X | X | | 175 |
| Humanities | | | | | |
| Humanities Studies | X | | | | 177 |
| Interdisciplinary Studies | | | | | |
| CSU General Education - Breadth | | | X | | 179 |
| Elementary Education | X | | | | 180 |
| Honors Global Competencies Certificate | | | | X | 180 |
| Intersegmental General Education Transfer (IGETC) | | | X | | 179 |
| Occupational/Technical Studies | | X | | | 182 |
| Selected Studies | | X | | | 184 |
| Mathematics | | | | | |
| Mathematics Studies | X | | | | 185 |
| Medical Laboratory Technology | | | | | |
| Medical Laboratory Technician Training | | | | X | 187 |
| Military Studies | | | | | |
| Military Leadership | | X | X | | 189 |
| Music | | | | | |
| Music Production and Engineering | | | | X | 191 |
| Music Studies | X | | | | 191 |
| Paralegal | | | | | |
| Paralegal | | X | X | | 193 |
| Physical Science | | | | | |
| Earth Science Studies | | X | | | 195 |
| Physics Studies | | X | | | 196 |
| Pre-Engineering Studies | | X | | | 197 |
| Social and Behavioral Sciences | | | | | |
| Psychology | X | | | | 199 |
| Social and Behavioral Sciences | X | | | | 201 |
| Sociology for Transfer | X | | | | 200 |
| World Language Studies | | | | | |
| World Language Studies | X | | | | 203 |

Administration of Justice

| Award Type | Units |
|---|-------|
| Certificate of Performance: | |
| P.C. 832 Laws of Arrest | 2.5 |
| P.C. 832 Laws of Arrest - Firearms | 1 |
| Transportation Security | 9 |
| Certificate of Achievement: | |
| Advanced Traffic Accident Investigation | 34.5 |
| Correctional Training for Deputy Sheriffs | 29.5 |
| Contemporary Police Technologies | 34.5 |
| Correctional Technologies | 33 |
| Investigations Specialization | 33 |
| Law Enforcement Specialization | 33 |
| Law Enforcement Supervision | 28.5 |
| Law Enforcement Technologies | 25.5 |
| Technical Achievement for Field Training Officers | 30 |
| Associate in Science Degree: | |
| Contemporary Police Technologies | 34.5* |
| Correctional Technologies | 33* |
| Investigations Specialization | 33* |
| Law Enforcement Specialization | 33* |
| Occupational/Technical Studies (see page 182) | 18* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

The Administration of Justice program provides professional education and training for students in Law Enforcement, Investigations, Contemporary Police Technologies, and Correctional Technologies. Specialized seminars and intensified course offerings are designed to meet all current training mandated and prescribed by law. The program offers weekend, morning, afternoon, night classes and online classes to accommodate student needs. Students who meet the academic requirements may obtain an Associate in Science Degree or select from a variety of certificates of performance and certificates of achievement. The program is also designed to enhance general knowledge of the Administration of Justice System for the community at large.

Program Learning Outcomes

The Administration of Justice program offers course work for students seeking employment with

local, state, or federal law enforcement agencies, correctional agencies, court services, private and industrial security fields. The programs are designed to meet lower division transfer requirements and entry-level job requirements. Students specializing in law enforcement and investigations are taught in accordance with the learning requirements developed by the Commission on Peace Officer Standards and Training (POST). Short-term course work is available for students needing specialized training as a condition of employment. Public safety personnel currently employed can benefit from specialized course work and continuing educational opportunities for professional advancement.

| Faculty | Office | Telephone/Email |
|---------------|--------|-----------------|
| Steve Lickiss | A-224C | 619-388-7455 |
| Jordan Omens | A-224B | 619-388-7454 |

Career Options

The following list is a small sample of the variety of city, county, state and federal career options available for the administration of justice major.

- Arson Investigator
- Border Patrol officer
- Correctional Officer
- Crime Prevention Specialist
- Customs Agent
- Deputy Sheriff
- Evidence Technician
- Homeland Security
- Parking Enforcement
- Parole Officer
- Police Officer
- Police Service Officer
- Postal Inspector
- Private and Industrial Security Officer
- Probation Officer

Student Learning Outcomes

Students who complete the Administration of Justice Program will be able to:

- Understand the three parts of the criminal justice system and how they interrelate.

- Demonstrate knowledge of the California Penal Code, the California Commission on Peace Officer Standards and Training regulations and appropriate department policies and procedures.
- Relate knowledge from several employment areas such as pre-employment testing, physical requirements, psychological evaluations and social factors.
- Use information of crime scene management and investigation, forensics analysis and information technology to conduct rudimentary criminal investigations.
- Analyze and evaluate the role of criminal sanctions in recidivism rates and the rehabilitation process of offenders.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

Academic Programs

The associate degree, certificates of performance, and certificates of achievement listed require completion of the courses listed below. Additional general education and graduation requirements for the associate degree are listed in the catalog. The associate degree requires a minimum of 60 units.

Transfer Information

Common university majors related to the field of Administration of Justice include: Criminal Justice, Law, Public Administration.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Science degree with an area of emphasis in Occupational/Technical Studies (see page 182). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer.

More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Each basic law enforcement academy is reviewed for compliance with POST Regulations and directives on a three-year cycle. The Basic Course Certification Review (BCCR) process provides regular assessments of academy operations - a vital function to ensure course quality, integrity, and safety of entry level peace officer training in California.

Certificate of Performance: P.C. 832 Laws of Arrest*

| Courses: | Units |
|---------------------------------|--------------|
| ADJU 356A 832 PC Laws of Arrest | 2.5 |
| Total Units = 2.5 | |

Certificate of Performance: P.C. 832 Laws of Arrest - Firearms*

| Courses: | Units |
|---------------------------|--------------|
| ADJU 356B 832 PC Firearms | 1 |
| Total Units = 1 | |

Certificate of Performance: Transportation Security*

The Certificate of Performance in Transportation Security is intended for students employed or seeking employment with the Department of Homeland Security as well as anyone interested in the field of transportation security.

| Courses: | Units |
|--|--------------|
| HSEC 100 Introduction to Homeland Security | 3 |
| HSEC 110 Intelligence Analysis and Security Management | 3 |
| HSEC 120 Transportation and Border Security | 3 |
| Total Units = 9 | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificates of Achievement available for the working professional or pre-employment student.

Certificate of Achievement: Administration of Justice

Advanced Traffic Accident Investigation

| Courses Required for the Major: | Units |
|---|--------------|
| ADJU 381 P.O.S.T. Certified Regional Academy Module 1 | 15 |

| | | |
|----------|--|-----|
| ADJU 382 | P.O.S.T. Certified Regional Academy Module 2 | 4.5 |
| ADJU 383 | P.O.S.T. Certified Regional Academy Module 3 | 2 |
| ADJU 384 | P.O.S.T. Certified Regional Academy Module 4 | 4 |

Select nine units from the following:

| | | |
|-----------|---|-----|
| ADJU 304 | Intermediate Traffic Accident Investigation | 1.5 |
| ADJU 305 | Advanced Traffic Accident Investigation | 3.5 |
| ADJU 307 | Traffic Enforcement Radar Certification | 1.5 |
| ADJU 322 | Basic Traffic Accident Investigation | 2 |
| ADJU 332A | P.O.S.T. Certified Driving Under the Influence Course | 0.5 |

Total Units = 34.5**Certificate of Achievement:
Administration of Justice****Correctional Training for Deputy Sheriffs****Courses Required for the Major: Units**

| | | |
|----------|--|-----|
| ADJU 336 | S.T.C. Advanced Arrest and Firearms Training | 0.5 |
| ADJU 339 | S.T.C. Certified Detentions Special Incident Response Training | 0.5 |
| ADJU 381 | P.O.S.T. Certified Regional Academy Module 1 | 15 |
| ADJU 382 | P.O.S.T. Certified Regional Academy Module 2 | 4.5 |
| ADJU 383 | P.O.S.T. Certified Regional Academy Module 3 | 2 |
| ADJU 384 | P.O.S.T. Certified Regional Academy Module 4 | 4 |

Select three units from the following:

| | | |
|----------|--|-----|
| ADJU 325 | S.T.C. Certified Jail Training Officer | 2 |
| ADJU 326 | S.T.C. Certified Detentions Special Incident Response Training | 1.5 |
| ADJU 338 | S.T.C. Certified Jail OPS | 1.5 |
| ADJU 352 | S.T.C. Certified Jail OPS | 1.5 |

Total Units = 29.5**Certificate of Achievement:
Administration of Justice****Contemporary Police Technologies****Courses Required for the Major: Units**

| | | |
|----------|--|----|
| ADJU 381 | P.O.S.T. Certified Regional Academy Module 1 | 15 |
|----------|--|----|

| | | |
|----------|--|-----|
| ADJU 382 | P.O.S.T. Certified Regional Academy Module 2 | 4.5 |
| ADJU 383 | P.O.S.T. Certified Regional Academy Module 3 | 2 |
| ADJU 384 | P.O.S.T. Certified Regional Academy Module 4 | 4 |

Select nine units from the following:

| | | |
|----------|----------------------------------|---|
| ADJU 160 | Criminal Law II | 3 |
| ADJU 161 | Juvenile Procedures | 3 |
| ADJU 180 | Drug Abuse and Law Enforcement | 3 |
| ADJU 181 | Vice and Organized Crime | 3 |
| ADJU 182 | Street Gangs and Law Enforcement | 3 |
| ADJU 201 | California Criminal Procedures | 3 |
| ADJU 210 | Rules of Evidence | 3 |
| ADJU 230 | Constitutional Law I | 3 |

Total Units = 34.5**Certificate of Achievement:
Administration of Justice****Correctional Technologies****Courses Required for the Major: Units**

| | | |
|----------|--|----|
| ADJU 101 | Introduction to Administration of Justice | 3 |
| ADJU 102 | Criminal Law I | 3 |
| ADJU 161 | Juvenile Procedures | 3 |
| ADJU 162 | Criminal Investigation | 3 |
| ADJU 167 | Report Writing | 3 |
| ADJU 201 | California Criminal Procedures | 3 |
| ADJU 323 | S.T.C. Certified Corrections Officer Core Course | 15 |

Total Units = 33**Certificate of Achievement:
Administration of Justice****Investigations Specialization****Courses Required for the Major: Units**

| | | |
|----------|---|---|
| ADJU 101 | Introduction to Administration of Justice | 3 |
| ADJU 102 | Criminal Law I | 3 |
| ADJU 106 | Diversity and Community Relations | 3 |
| ADJU 160 | Criminal Law II | 3 |
| ADJU 161 | Juvenile Procedures | 3 |
| ADJU 162 | Criminal Investigation | 3 |
| ADJU 167 | Report Writing | 3 |
| ADJU 201 | California Criminal Procedures | 3 |
| ADJU 210 | Rules of Evidence | 3 |
| ADJU 220 | Law Enforcement Forensics | 3 |

Select three units from the following:

| | | |
|----------|--------------------------------|---|
| ADJU 180 | Drug Abuse and Law Enforcement | 3 |
|----------|--------------------------------|---|

| | | |
|----------|----------------------------------|-------------------------|
| ADJU 181 | Vice and Organized Crime | 3 |
| ADJU 182 | Street Gangs and Law Enforcement | 3 |
| ADJU 230 | Constitutional Law I | 3 |
| | | Total Units = 33 |

Certificate of Achievement: Administration of Justice

Law Enforcement Specialization

| Courses Required for the Major: | | Units |
|--|---|--------------|
| ADJU 101 | Introduction to Administration of Justice | 3 |
| ADJU 102 | Criminal Law I | 3 |
| ADJU 106 | Diversity and Community Relations | 3 |
| ADJU 160 | Criminal Law II | 3 |
| ADJU 161 | Juvenile Procedures | 3 |
| ADJU 167 | Report Writing | 3 |
| ADJU 201 | California Criminal Procedures | 3 |
| ADJU 210 | Rules of Evidence | 3 |

Select nine units from the following:

| | | |
|-----------|----------------------------------|-----|
| ADJU 140 | Patrol Procedures | 3 |
| ADJU 147 | Physical Conditioning | 1 |
| ADJU 148 | Defensive Tactics | 1 |
| ADJU 149 | Firearms | 1 |
| ADJU 162 | Criminal Investigation | 3 |
| ADJU 180 | Drug Abuse and Law Enforcement | 3 |
| ADJU 181 | Vice and Organized Crime | 3 |
| ADJU 182 | Street Gangs and Law Enforcement | 3 |
| ADJU 220 | Law Enforcement Forensics | 3 |
| ADJU 230 | Constitutional Law I | 3 |
| ADJU 356A | 832 PC Laws of Arrest | 2.5 |
| ADJU 356B | 832 PC Firearms | 1 |

Total Units = 33

Certificate of Achievement: Administration of Justice

Law Enforcement Supervision

| Courses Required for the Major: | | Units |
|--|--|--------------|
| ADJU 381 | P.O.S.T. Certified Regional Academy Module 1 | 15 |
| ADJU 382 | P.O.S.T. Certified Regional Academy Module 2 | 4.5 |
| ADJU 383 | P.O.S.T. Certified Regional Academy Module 3 | 2 |
| ADJU 384 | P.O.S.T. Certified Regional Academy Module 4 | 4 |

Select three units from the following:

| | | |
|----------|--------------------------|---|
| ADJU 312 | Basic Supervisory Course | 3 |
|----------|--------------------------|---|

Total Units = 28.5

Certificate of Achievement: Administration of Justice

Law Enforcement Technologies

| Courses Required for the Major: | | Units |
|--|--|--------------|
| ADJU 381 | P.O.S.T. Certified Regional Academy Module 1 | 15 |
| ADJU 382 | P.O.S.T. Certified Regional Academy Module 2 | 4.5 |
| ADJU 383 | P.O.S.T. Certified Regional Academy Module 3 | 2 |
| ADJU 384 | P.O.S.T. Certified Regional Academy Module 4 | 4 |

Total Units = 25.5

Certificate of Achievement: Administration of Justice

Technical Achievement for Field Training Officers

| Courses Required for the Major: | | Units |
|--|--|--------------|
| ADJU 381 | P.O.S.T. Certified Regional Academy Module 1 | 15 |
| ADJU 382 | P.O.S.T. Certified Regional Academy Module 2 | 4.5 |
| ADJU 383 | P.O.S.T. Certified Regional Academy Module 3 | 2 |
| ADJU 384 | P.O.S.T. Certified Regional Academy Module 4 | 4 |
| ADJU 314 | Officer Safety and Field Tactics | 1.5 |
| ADJU 327 | Advanced Patrol Strategies | 1.5 |
| ADJU 330 | P.O.S.T. Certified Field Training Officer Course | 1.5 |

Total Units = 30

Associate in Science Degree: Administration of Justice

Contemporary Police Technologies

| Courses Required for the Major: | | Units |
|--|--|--------------|
| ADJU 381 | P.O.S.T. Certified Regional Academy Module 1 | 15 |
| ADJU 382 | P.O.S.T. Certified Regional Academy Module 2 | 4.5 |
| ADJU 383 | P.O.S.T. Certified Regional Academy Module 3 | 2 |
| ADJU 384 | P.O.S.T. Certified Regional Academy Module 4 | 4 |

Select nine units from the following:

| | | |
|----------|---------------------|---|
| ADJU 160 | Criminal Law II | 3 |
| ADJU 161 | Juvenile Procedures | 3 |

| | | |
|----------|----------------------------------|---|
| ADJU 180 | Drug Abuse and Law Enforcement | 3 |
| ADJU 181 | Vice and Organized Crime | 3 |
| ADJU 182 | Street Gangs and Law Enforcement | 3 |
| ADJU 201 | California Criminal Procedures | 3 |
| ADJU 210 | Rules of Evidence | 3 |
| ADJU 230 | Constitutional Law I | 3 |

Total Units = 34.5

Associate in Science Degree: Administration of Justice

Correctional Technologies

| Courses Required for the Major: | | Units |
|--|--|--------------|
| ADJU 101 | Introduction to Administration of Justice | 3 |
| ADJU 102 | Criminal Law I | 3 |
| ADJU 161 | Juvenile Procedures | 3 |
| ADJU 162 | Criminal Investigation | 3 |
| ADJU 167 | Report Writing | 3 |
| ADJU 201 | California Criminal Procedures | 3 |
| ADJU 323 | S.T.C. Certified Corrections Officer Core Course | 15 |

Total Units = 33

Associate in Science Degree: Administration of Justice

Investigations Specialization

| Courses Required for the Major: | | Units |
|--|---|--------------|
| ADJU 101 | Introduction to Administration of Justice | 3 |
| ADJU 102 | Criminal Law I | 3 |
| ADJU 106 | Diversity and Community Relations | 3 |
| ADJU 160 | Criminal Law II | 3 |
| ADJU 161 | Juvenile Procedures | 3 |
| ADJU 162 | Criminal Investigation | 3 |
| ADJU 167 | Report Writing | 3 |
| ADJU 201 | California Criminal Procedures | 3 |
| ADJU 210 | Rules of Evidence | 3 |
| ADJU 220 | Law Enforcement Forensics | 3 |

Select three units from the following:

| | | |
|----------|----------------------------------|---|
| ADJU 180 | Drug Abuse and Law Enforcement | 3 |
| ADJU 181 | Vice and Organized Crime | 3 |
| ADJU 182 | Street Gangs and Law Enforcement | 3 |
| ADJU 230 | Constitutional Law I | 3 |

Total Units = 33

Associate in Science Degree: Administration of Justice

Law Enforcement Specialization

| Courses Required for the Major: | | Units |
|--|---|--------------|
| ADJU 101 | Introduction to Administration of Justice | 3 |
| ADJU 102 | Criminal Law I | 3 |
| ADJU 106 | Diversity and Community Relations | 3 |
| ADJU 160 | Criminal Law II | 3 |
| ADJU 161 | Juvenile Procedures | 3 |
| ADJU 167 | Report Writing | 3 |
| ADJU 201 | California Criminal Procedures | 3 |
| ADJU 210 | Rules of Evidence | 3 |

Select nine units from the following:

| | | |
|-----------|----------------------------------|-----|
| ADJU 140 | Patrol Procedures | 3 |
| ADJU 147 | Physical Conditioning | 1 |
| ADJU 148 | Defensive Tactics | 1 |
| ADJU 149 | Firearms | 1 |
| ADJU 162 | Criminal Investigation | 3 |
| ADJU 180 | Drug Abuse and Law Enforcement | 3 |
| ADJU 181 | Vice and Organized Crime | 3 |
| ADJU 182 | Street Gangs and Law Enforcement | 3 |
| ADJU 220 | Law Enforcement Forensics | 3 |
| ADJU 230 | Constitutional Law I | 3 |
| ADJU 356A | 832 PC Laws of Arrest | 2.5 |
| ADJU 356B | 832 PC Firearms | 1 |

Total Units = 33

For graduation requirements see **Associate Degree Requirements** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Recommended Electives: Any of the above listed Administration of Justice courses or any of the following: Administration of Justice 85, 101, 102, 106, 140, 147, 148, 149, 160, 161, 162, 167, 180, 181, 182, 201, 210, 220, 230, 270, 290, 300, 304, 307, 312, 313, 314, 320, 322, 323, 324, 327, 330, 332, 333, 334, 335, 343, 344, 346, 348, 350, 351, 356A/B, 361, 375, 381, 382, 383, 384.

Anthropology

See "Social and Behavioral Sciences" on page 198.

Arabic

See "World Language Studies" on page 203.

Art

| Award Type | Units |
|------------------------------------|--------------|
| Certificate of Performance: | |
| Craft Skills | 10-15 |
| Certificate of Achievement: | |
| Graphics | 36 |
| Associate in Arts Degree: | |
| Combined Drawing/Painting | 27* |
| Craft Skills | 24* |
| Studio Arts | 48* |
| Art/Visual Studies | 18* |
| Graphics | 36* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

Art is the study of the arrangement of forms that affect the senses, communicate political, social, cultural, religious, or emotional ideas that manifest in scenes and through objects produced throughout the world. This field includes the study and design of both two-dimensional and three-dimensional art. The art program is designed to maximize transferable course units and to provide basic skills required for employment in art-related fields.

Program Learning Outcomes

Within the major, courses are suggested with an emphasis to suit the student's interests. One of twelve areas of emphasis may be selected: painting, pictorial (drawing), combined drawing/painting, sculpture, craft skills including ceramics, art education, art history, graphic communications, studio arts, or a non-specialized art major.

Note: Not all areas of emphasis may be offered at every campus.

| Faculty | Office | Telephone/Email |
|------------------|--------------------|-------------------------------------|
| Dee Dee Coppedge | H-111-A | 619-388-7514 dcoppedge@sdccd.edu |
| Robert Fritsch | H-112-B Art Lab | 619-388-7337 bfritsch@sdccd.edu |
| Rex Heftmann | W-221 | 619-388-7205 rheftman@sdccd.edu |

Program Goals

Within the major, courses are suggested with an emphasis to suit the student's interests. One

of twelve areas of emphasis may be selected: painting, pictorial (drawing), combined drawing/painting, sculpture, craft skills including ceramics, art education, art history, graphic communications, studio arts, or a nonspecialized art major.

Program Emphasis

The associate degree in Fine Art requires completion of the courses listed below. Additional general education and graduation requirements for the associate degree are listed in the catalog. The associate degree requires a minimum of 60 units.

Career Options

Some careers listed require education beyond the associate degree: art educator, art historian, arts administrator, advertising specialist, ceramicist, computer publishing, design consulting, display designer, gallery director, illustrator, muralist, printmaker, sculptor, and digital graphics specialist.

Student Learning Outcomes

Students who complete the Art Program will be able to:

- Critically analyze, interpret, and evaluate works of art.
- Develop a foundation of art skills and a high level of craftsmanship by utilizing a variety of tools and technologies associated with the visual arts.
- Use a diverse range of global events to express personal ideas and opinions through artwork.
- Identify the theoretical, cultural, and historical contexts of art.
- Demonstrate appropriate skills needed to articulate their conscious artistic intentions, and express coherent aesthetics.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

Academic Programs

The associate degree in Fine Art requires completion of the courses listed below. Additional general education and graduation requirements for the associate degree are listed in the catalog. The associate degree requires a minimum of 60 units.

Transfer Information

Common university majors related to the field of Art-Fine Art include: Apparel Design

and Merchandising, Art, Art Education, Art History, Creative Arts/Studies, Design, Graphic Communications, Graphic Design, Industrial Arts, Interior Design, Multimedia, Photography, Studio Art, Textiles.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate of Arts degree with an area of emphasis in Art/Visual Studies (see page 125). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Certificate of Performance: Craft Skills*

| Courses: | Units |
|-----------------------------------|-------|
| ARTF 170A Contemporary Crafts I | 3 |
| ARTF 170B Contemporary Crafts II | 3 |
| ARTF 170C Contemporary Crafts III | 3 |
| ARTF 290 Independent Study | 1-3 |
| Total Units = 10-15 | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificates of Achievement available for the working professional or pre-employment student.

Associate in Arts Degree: Art-Fine Art

Combined Drawing/Painting

| Courses Required for the Major: | Units |
|----------------------------------|-------|
| ARTF 150A Two-Dimensional Design | 3 |
| ARTF 150B Design II | 3 |
| ARTF 155A Freehand Drawing I | 3 |
| ARTF 155B Freehand Drawing II | 3 |
| ARTF 165A Composition Painting I | 3 |
| ARTF 210A Life Drawing I | 3 |

Select six units from:

| | |
|---|----|
| ARTF 109 History of Modern Art | or |
| ARTF 110 Art History: Prehistoric to Gothic | or |
| ARTF 111 Art History: Renaissance to Modern | |
| 6 | |

Select three units from:

| | |
|--|--|
| ARTF 107 Contemporary Art | |
| ARTF 151 Three-Dimensional Design | |
| ARTF 161A Museum Studies/Gallery Exhibition Skills I | |
| ARTF 175A Sculpture I | |
| ARTF 185 Lettering | |
| ARTF 190A Black and White Photography* (Mesa) | |
| ARTF 198A Introduction to Printmaking I | |
| ARTF 198B Introduction to Printmaking II* | |
| ARTF 198C Introduction to Printmaking III* | |
| ARTF 210B Life Drawing II | |
| ARTF 210C Life Drawing III * (City, Mesa) | |
| PHOT 105 Introduction to Photography* (City) | |
| 3 | |

Total Units = 27

Note: Only one ARTF Arts (ARTF) course from the above list may be used to satisfy SDCCD general education requirements.

Associate in Arts Degree: Art-Fine Art

Craft Skills

| Courses Required for the Major: | Units |
|-----------------------------------|-------|
| ARTF 150A Two-Dimensional Design | 3 |
| ARTF 151 Three-Dimensional Design | 3 |
| ARTF 155A Freehand Drawing I | 3 |
| ARTF 170A Contemporary Crafts I | 3 |
| ARTF 195A Ceramics I | 3 |

Select six units from:

| | |
|---|----|
| ARTF 109 History of Modern Art | or |
| ARTF 110 Art History: Prehistoric to Gothic | or |
| ARTF 111 Art History: Renaissance to Modern | |
| 6 | |

Select three units from:

| | |
|---|--|
| ARTF 107 Contemporary Art | |
| ARTF 155B Freehand Drawing II | |
| ARTF 161A Museum Studies/Gallery Exhibition Skills I* (Mesa) | |
| ARTF 161B Museum Studies/Gallery Exhibition Skills II* (Mesa) | |
| ARTF 170B Contemporary Crafts II | |
| ARTF 170C Contemporary Crafts III | |
| ARTF 175A Sculpture I | |

| | | |
|-----------|---------------------------|--|
| ARTF 195B | Ceramics II | |
| ARTF 195C | Ceramics III | |
| ARTF 196 | Clay and Glaze Technology | |
| ARTF 220A | Life Sculpture I | |

Any art history course, or

| | | |
|----------|-------------------------------------|---|
| PHOT 105 | Introduction to Photography* (City) | 3 |
|----------|-------------------------------------|---|

Total Units = 21

Note: Only one ARTF Arts (ARTF) course from the above list may be used to satisfy SDCCD general education requirements.

Associate in Arts Degree: Art-Fine Art

Studio Arts

| Courses Required for the Major: | Units | |
|--|--|---|
| ARTF 100 | Art Orientation or | |
| ARTF 161A | Museum Studies/Gallery Exhibition Skills I* (Mesa) | 3 |
| ARTF 150A | Two-Dimensional Design | 3 |
| ARTF 150B | Design II | 3 |
| ARTF 151 or 161B* | (Mesa) | 3 |
| ARTF 155A | Freehand Drawing I | 3 |
| ARTF 155B | Freehand Drawing II | 3 |
| ARTF 165A | Composition in Painting I | 3 |
| ARTF 175A | Sculpture I | 3 |
| ARTF 210A | Life Drawing I or | |
| ARTF 220A | Life Sculpture I | 3 |

Select six units from:

| | | |
|----------|--|---|
| ARTF 109 | History of Modern Art or | |
| ARTF 110 | Art History: Prehistoric to Gothic or | |
| ARTF 111 | Art History: Renaissance to Modern | 6 |

Foreign Language Requirement: three semesters of one foreign language or the successful completion of a proficiency examination is required

Total Units = 48

Note: Only one ARTF Arts (ARTF) course from the above list may be used to satisfy SDCCD general education requirements.

***Note:** Students may not be able to take all courses listed at this campus. You may wish to consult a counselor or department chairperson.

Associate in Arts Degree: Art/Visual Studies

The Associate in Arts degree with an area of emphasis in Art/Visual Studies is intended for students who plan to complete a bachelor's degree at a transfer institution in an art-related major. Common university majors in this field include: Apparel Design and Merchandising, Art, Art Education, Art History, Creative Arts / Studies, Design, Graphic Communications, Graphic Design, Industrial Arts, Interior Design, Multimedia, Photography, Studio Art, and Textiles.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

| Courses Required for the Major: | Units | |
|--|------------------------------------|---|
| ARTF 110 | Art History: Prehistoric to Gothic | 3 |
| ARTF 111 | Art History: Renaissance to Modern | 3 |

Select at least 12 units, including at least two ARTF courses or one ARTF course and one ARTG course, from the following:

| | | |
|-----------|---|--|
| ARTF 100 | Art Orientation | |
| ARTF 107 | Contemporary Art | |
| ARTF 109 | History of Modern Art | |
| ARTF 113 | Arts of Africa, Oceania, and the Americas | |
| ARTF 125 | Art History: Arts of the Asian Continent | |
| ARTF 150A | Two-Dimensional Design | |
| ARTF 150B | Beginning Graphic Design | |
| ARTF 151 | Three-Dimensional Design | |
| ARTF 155A | Freehand Drawing I | |
| ARTF 155B | Freehand Drawing II | |
| ARTF 165A | Composition in Painting I | |
| ARTF 170A | Contemporary Crafts I | |
| ARTF 170B | Contemporary Crafts II | |
| ARTF 195A | Ceramics I | |
| ARTF 198A | Introduction to Printmaking I | |
| ARTF 210A | Life Drawing I | |
| ARTF 210B | Life Drawing II | |
| ARTG 125 | Fundamentals of Digital Media | |
| CHIL 101 | Human Growth and Development | |
| CHIL 103 | Lifespan Growth and Development | |
| ENGL 209 | Literary Approaches to Film | |
| GEOG 102 | Cultural Geography | |
| PSYC 101 | General Psychology. | |
| PSYC 230 | Psychology of Lifespan Development | |

| | |
|----------------------------------|----|
| SOCO 101 Principles of Sociology | 12 |
| Total Units = 18 | |

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
- The San Diego Community College District General Education pattern (page 71) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Graphics

Certificate of Achievement: Graphics

This degree provides the graduate with the demonstrable skills, documented experience, a portfolio of evidence, and the personal confidence to enter a career in which the ability to create, produce, and effectively use graphic identity and communications is a critical requirement. The program is task-oriented, intended to provide “embedded skills” beneficial to most careers.

| Courses Required for the Major: | Units |
|--|--------------|
| ARTF 150A Two-Dimensional Design | 3 |
| ARTF 150B Beginning Graphic Design | 3 |
| ARTF 155A Freehand Drawing I | 3 |
| ARTD 160 Vector Art 01: Illustration or | |
| ARTD 160A Vector Art 01: Illustration Tools | 1.5 |
| and | |
| ARTD 160B Vector Art 01: Illustration Tasks | 1.5 |

| | |
|---|-----|
| ARTD 170 Raster Art 01: Image Editing or | |
| ARTD 170A Raster Art 01A: Image Editing Tools | 1.5 |
| and | |
| ARTD 170B Raster Art 01B: Image Editing Tasks | 1.5 |
| ARTG 106 Typography | 3 |
| ARTD 181 Projects 01: Multi-modal productions | 3 |
| ARTG 126 Intermediate Digital Media | 3 |
| ARTG 148A Portfolio A | 3 |
| ARTG 149 Studio Practices | 3 |

Select six units from the following list of elective courses:

| | |
|--|-----|
| ARTD 158 Survey of Graphics Technology | 3 |
| ARTF 282 Open Studio | 1-2 |
| ARTF 155B Freehand Drawing II | 3 |
| ARTF 198A Introduction to Printmaking I | 3 |
| ARTG 133 Intermediate Graphic Design II (Identity Systems) | 3 |
| ARTG 290 Independent Study in Graphic Design | 1-3 |
| ARTG 148B Portfolio B | 3 |
| ARTG 270 Work Experience in Graphic Design | 1-4 |
| ARTG 118 Graphic Design History | 3 |
| BUSE 100 Introduction to Business | 3 |
| BUSE 119 Business Communications | 3 |

Total Units = 36

Associate in Arts Degree: Graphics

This degree provides the graduate with the demonstrable skills, documented experience, a portfolio of evidence, and the personal confidence to enter a career in which the ability to create, produce, and effectively use graphic identity and communications is a critical requirement. The program is task-oriented, intended to provide “embedded skills” beneficial to most careers.

| Courses Required for the Major: | Units |
|---|--------------|
| ARTF 150A Two-Dimensional Design | 3 |
| ARTF 150B Beginning Graphic Design | 3 |
| ARTF 155A Freehand Drawing I | 3 |
| ARTD 160 Vector Art 01: Illustration or | |
| ARTD 160A Vector Art 01: Illustration Tools | 1.5 |
| and | |
| ARTD 160B Vector Art 01: Illustration Tasks | 1.5 |
| ARTD 170 Raster Art 01: Image Editing or | |
| ARTD 170A Raster Art 01A: Image Editing Tools | 1.5 |
| and | |
| ARTD 170B Raster Art 01B: Image Editing Tasks | 1.5 |
| ARTG 106 Typography | 3 |
| ARTD 181 Projects 01: Multi-modal productions | 3 |
| ARTG 126 Intermediate Digital Media | 3 |

| | | |
|-----------|------------------|---|
| ARTG 148A | Portfolio A | 3 |
| ARTG 149 | Studio Practices | 3 |

Select six units from the following list of elective courses:

| | | |
|-----------|--|-----|
| ARTD 158 | Survey of Graphics Technology | 3 |
| ARTF 282 | Open Studio | 1-2 |
| ARTF 155B | Freehand Drawing II | 3 |
| ARTF 198A | Introduction to Printmaking I | 3 |
| ARTG 133 | Intermediate Graphic Design II (Identity Systems) | 3 |
| ARTG 290 | Independent Study in Graphic Design | 1-3 |
| ARTG 148B | Portfolio B | 3 |
| ARTG 270 | Work Experience in Graphic Design | 1-4 |
| ARTG 118 | Graphic Design History | 3 |
| BUSE 100 | Introduction to Business | 3 |
| BUSE 119 | Business Communications | 3 |

Total Units = 36

Note: Only one ARTF Arts (ARTF) course from the above list may be used to satisfy SDCCD general education requirements.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Astronomy

See "Physical Science" on page 195.

Automotive Technology

| Award Type | Units |
|-------------------------------------|-------|
| Certificate of Achievement: | |
| Automotive Chassis | 16 |
| Automotive Electrical | 16 |
| Automotive Engine Performance | 20 |
| Automotive Transmissions | 20 |
| Associate in Science Degree: | |
| Automotive Technology | 46* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

The Automotive Technology program provides both classroom theory and extensive hands on (shop) entry-level employment training as well as professional upgrading to persons in the automotive industry. The program provides training for state licenses as well as for each of the areas tested for National Institute for Automotive Service Excellence (ASE) certification. Certificates are offered in Automotive Electrical, Automotive Engine Performance, Automotive Transmissions, and Automotive Chassis.

Program Emphasis:

The program emphasis is on various automotive manufacturer products. Specific training in American Honda Motors and Toyota Motor Sales is available in designated courses. Students have the opportunity for internship training when available. If employed, student interns may work for a repair facility while concurrently receiving formal training in Automotive Technology coursework. Upon completion, the student may have the opportunity for full-time employment at that repair facility. While progressing through the training, students are strongly encouraged to obtain at least two Automotive Service Excellence (ASE) Certifications.

Career Options:

Employment may be found as an entry-level automotive technician in an automotive manufacturer dealership such as Honda/Acura or Toyota/Lexus, an independent repair garage, or automotive franchise such as Firestone Tire, Sears or Pep Boys.

| Faculty | Office | Telephone |
|-----------------|--------|--------------|
| Miramar College | S-204F | 619-388-7634 |
| Joe Young | S-204C | 619-388-7672 |
| Mark Dinger | S-204D | 619-388-7642 |
| Ryan Monroe | S-204E | 619-388-7499 |

Student Learning Outcomes

Students who complete the Automotive Technology Program will be able to:

- Accurately diagnose and repair light duty automotive systems and components;
- Identify workplace health and safety compliance using regulations published by the Occupational Safety and Health Administration, and the Environmental Protection Agency;
- Research automotive repair data, instructions, and specifications using printed material as well as computer data base systems.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

Academic Programs

The certificates of achievement and associate degree, Automotive, require completion of the courses listed below.

Certificate of Achievement: Automotive Chassis

| <u>Courses Required for the Major:</u> | <u>Units</u> |
|--|--------------|
| AUTO 061 Basic Electricity and Electrical Systems Fundamentals or | |
| AUTO 061T Honda/Toyota Basic Electricity and Electrical Systems Fundamentals | 4 |
| AUTO 062 Advanced Electrical or | |
| AUTO 062T Honda/Toyota Advanced Electrical | 4 |
| AUTO 076 Automotive Brake Systems or | |
| AUTO 076T Honda/Toyota Automotive Brake Systems | 4 |
| AUTO 078 Suspension, Steering and Handling or | |
| AUTO 078T Honda/Toyota Suspension, Steering and Handling | 4 |
| Total Units = 16 | |

Certificate of Achievement: Automotive Electrical

| <u>Courses Required for the Major:</u> | <u>Units</u> |
|--|--------------|
| AUTO 061 Basic Electricity and Electrical Systems Fundamentals or | |
| AUTO 061T Honda/Toyota Basic Electricity and Electrical Systems Fundamentals | 4 |
| AUTO 062 Advanced Electrical or | |
| AUTO 062T Honda/Toyota Advanced Electrical | 4 |
| AUTO 065 Engine Performance or | |
| AUTO 065T Honda/Toyota Engine Performance | 4 |
| AUTO 069 Climate Control Systems or | |
| AUTO 069T Honda/Toyota Climate Control Systems | 4 |
| Total Units = 16 | |

Certificate of Achievement: Automotive Engine Performance

| <u>Courses Required for the Major:</u> | <u>Units</u> |
|--|--------------|
| AUTO 056 Engine and Related Systems or | |
| AUTO 056T Honda/Toyota Engine and Related Systems | 4 |
| AUTO 061 Basic Electricity and Electrical Systems Fundamentals or | |
| AUTO 061T Honda/Toyota Basic Electricity and Electrical Systems Fundamentals | 4 |
| AUTO 062 Advanced Electrical or | |
| AUTO 062T Honda/Toyota Advanced Electrical | 4 |
| AUTO 065 Engine Performance or | |
| AUTO 065T Honda/Toyota Engine Performance | 4 |
| AUTO 067 Advanced Engine Performance or | |
| AUTO 067T Honda/Toyota Advanced Engine Performance | 4 |
| Total Units = 20 | |

Certificate of Achievement: Automotive Transmissions

| <u>Courses Required for the Major:</u> | <u>Units</u> |
|--|--------------|
| AUTO 061 Basic Electricity and Electrical Systems Fundamentals or | |
| AUTO 061T Honda/Toyota Basic Electricity and Electrical Systems Fundamentals | 4 |
| AUTO 062 Advanced Electrical or | |
| AUTO 062T Honda/Toyota Advanced Electrical | 4 |
| AUTO 065 Engine Performance or | |
| AUTO 065T Honda/Toyota Engine Performance | 4 |
| AUTO 072 Manual Drive Train and Axles or | |
| AUTO 072T Honda/Toyota Manual Drive Train and Axles | 4 |
| AUTO 074 Automatic Transmissions/Axles or | |

| | | |
|-----------|--|-------------------------|
| AUTO 074T | Honda/Toyota Automatic Transmissions/Axles | 4 |
| | | Total Units = 20 |

Associate in Science Degree: Automotive Technology

| Courses Required for the Major: | Units |
|--|--------------|
| AUTO 056 Engine and Related Systems or | |
| AUTO 056T Honda/Toyota Engine and Related Systems | 4 |
| AUTO 061 Basic Electricity and Electrical Systems Fundamentals or | |
| AUTO 061T Honda/Toyota Basic Electricity and Electrical Systems Fundamentals | 4 |
| AUTO 062 Advanced Electrical or | |
| AUTO 062T Honda/Toyota Advanced Electrical | 4 |
| AUTO 065 Engine Performance or | |
| AUTO 065T Honda/Toyota Engine Performance | 4 |
| AUTO 067 Advanced Engine Performance or | |
| AUTO 067T Honda/Toyota Advanced Engine Performance | 4 |
| AUTO 069 Climate Control Systems or | |
| AUTO 069T Honda/Toyota Climate Control Systems | 4 |
| AUTO 072 Manual Drive Train and Axles or | |
| AUTO 072T Honda/Toyota Manual Drive Train and Axles | 4 |
| AUTO 074 Automatic Transmissions/Axles or | |
| AUTO 074T Honda/Toyota Automatic Transmissions/Axles | 4 |
| AUTO 076 Automotive Brake Systems or | |
| AUTO 076T Honda/Toyota Automotive Brake Systems | 4 |
| AUTO 078 Suspension, Steering and Handling or | |
| AUTO 078T Honda/Toyota Suspension, Steering and Handling | 4 |
| AUTO 085 Advanced Emission Specialist Exam Qualification Course | 6 |
| Total Units = 46 | |

For graduation requirements see **Associate Degree Requirements** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Recommended Electives: Automotive Technology 81, 95, 270, 290.

Aviation Maintenance Technology

| Award Type | Units |
|--|--------------|
| Certificate of Performance: | |
| Aviation Work Skills | 2.5 |
| Certificate of Achievement: | |
| Airframe & Powerplant | 78 |
| Airframe | 47 |
| Powerplant | 52.5 |
| Pilot Studies | 21 |
| Aviation General Studies | 18 |
| Associate in Science Degree: | |
| Airframe & Powerplant | 78* |
| Airframe | 47* |
| Powerplant | 52.5* |
| Pilot Studies | 21* |
| Aviation General Studies | 18* |
| Occupational/Technical Studies (see page 182) | 18* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

Miramar College maintains a Federal Aviation Administration (FAA), Federal Aviation Regulation (FAR) Part 147 approved Aviation Maintenance Technician Program that leads to an FAA Mechanic's Certificate with an Airframe and Powerplant Rating. This program is structured to allow the student majoring in Airframe and Powerplant to complete the required minimum of 1900 hours of instruction in five semesters. Each student is required to complete the minimum hours of instruction to qualify for these ratings. Students completing the Airframe and/or Powerplant program will be qualified to take the examinations given by the FAA.

To obtain a Mechanic's Certificate an Airframe and/or Powerplant Ratings, arrangements are made with the local FAA District Office to take the appropriate written examinations followed by the appropriate oral/practical examinations.

Additionally, students pursuing an interest in Aviation Maintenance Technology not resulting in an FAA rating may receive a Certificate of Achievement or an Associate in Science Degree in Aviation General Studies or Pilot Studies.

Career Options

An FAA Mechanic's Certificate with an Airframe and Powerplant Rating enables the holder to service, maintain, inspect, and approve for return to service, any U.S. registered aircraft. Opportunities include employment in all areas of aviation maintenance such as, FAA authorized Repair Stations, local General Aviation facilities, corporate fleet maintenance facilities, and the airlines. The skills acquired in the aviation program can also be applied in other professional fields such as, advanced fabrication, design, and repair facilities, small and large manufacturers, and research and development organizations.

| Faculty | Office | Telephone |
|-----------------|---------|--------------|
| David Buser | F-103-B | 619-388-7663 |
| Larry Pink | F-103-F | 619-388-7665 |
| Lonny Bosselman | F-103-G | 619-388-7666 |
| Paul Chlapecka | F-103-E | 619-388-7661 |
| Wheeler North | F-103-I | 619-388-7662 |

Student Learning Outcomes

Students who complete the Aeronautical and Aviation Technology Program will be able to:

- Troubleshoot, service, and repair aircraft structures and flight controls;
- Troubleshoot, service, and repair various aircraft propulsion systems;
- Maintain aircraft in compliance with all applicable Federal Air Regulations.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

Credit For Aviation Maintenance Technician-Airframe or Powerplant Rating

Pending Aviation Department review and approval, students who hold a valid FAA Airframe or Powerplant Rating may apply to the Aviation Maintenance Technology Department for a maximum of 35 units. The units granted with a grade of CR will be posted to the student's transcript upon completion of the remaining Associate in Science Degree requirements.

Credit for Military Schools and Experience

Pending Aviation Department review and approval, students who have completed military technical schools recognized by the FAA may apply to the Aviation Maintenance Technology Department for a maximum of 15 units.

Credit for Work Experience

Students who have valid work experience in the aviation industry may challenge a maximum of 15 units. (See Challenge Procedure on page 20.)

Transfer Information

Common university majors related to the field of Aviation Maintenance Technology include: Aeronautical Science and Engineering, Aerospace Engineering, Aviation, Aviation Maintenance Management, Aviation Technical Management.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Science degree with an area of emphasis in Occupational/Technical Studies (see page 182). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Certificate of Performance: Aviation Work Skills*

The Certificate of Performance in Aviation Work Skills provides the student with basic work skills and competencies required for success in an entry-level, intern, or apprentice position in the aviation industry.

| Courses: | Units |
|--|-------|
| AVIM 52 Survey of Aviation Industry | 1.5 |
| CBTE 114 Introduction to Microsoft Windows | 1 |
| Total Units = 2.5 | |

Recommended Electives: Aviation Maintenance Technology 270, Aviation 270.

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Achievement: Aviation Maintenance Technology

Airframe & Powerplant

Qualifies the student for the FAA Airframe and Powerplant exam.

Courses Required for the Major: Units

General Curriculum

| | | |
|-----------|--|-----|
| AVIM 101G | General Aviation Technology Theory I | 6 |
| AVIM 101H | General Aviation Technology Theory II | 6 |
| AVIM 102G | General Aviation Maintenance Technology Practices I | 2 |
| AVIM 102H | General Aviation Maintenance Technology Practices II | 2 |
| AVIM 109D | Aircraft Fire Protection and Digital Logic | 1 |
| AVIM 120 | Basic D.C. Electronics Theory | 3 |
| AVIM 121A | Applied Basic D.C. Electronics | 1.5 |

Airframe Curriculum

| | | |
|-----------|---|-----|
| AVIM 103A | Aircraft Wood, Fabric, Finishing and Composite Structures | 3 |
| AVIM 104A | Applied Aircraft Wood, Fabric, Finishing and Composite Structures | 1.5 |
| AVIM 103B | Aircraft Welding and Sheetmetal Structures | 3 |
| AVIM 104B | Applied Aircraft Welding and Sheetmetal Structures | 1.5 |
| AVIM 103C | Aircraft Hydraulic Systems | 3 |
| AVIM 104C | Applied Aircraft Hydraulic Systems | 1 |
| AVIM 103D | Aircraft Landing Gear Systems | 3 |
| AVIM 104D | Applied Aircraft Landing Gear Systems | 1 |
| AVIM 105A | Aircraft Cabin Atmosphere Control | 1.5 |
| AVIM 106A | Aircraft Cabin Atmosphere Control | 0.5 |
| AVIM 105B | Aircraft Assembly, Rigging and Inspection | 1.5 |
| AVIM 106B | Applied Aircraft Assembly, Rigging and Inspection | 1 |
| AVIM 109A | Airframe Electrical Systems | 3 |
| AVIM 110A | Applied Airframe Electrical Systems | 1 |

Powerplant Curriculum

| | | |
|-----------|-----------------------------|---|
| AVIM 107B | Turbine Engines | 3 |
| AVIM 108B | Turbine Engines Laboratory | 1 |
| AVIM 109B | Powerplant Ignition Systems | 2 |

| | | |
|-----------|---|-----|
| AVIM 110B | Applied Powerplant Ignition Systems | 0.5 |
| AVIM 109C | Powerplant Electrical Systems | 3 |
| AVIM 110C | Applied Powerplant Electrical Systems | 0.5 |
| AVIM 111C | Reciprocating Engines I | 3 |
| AVIM 112C | Applied Reciprocating Engines I | 2 |
| AVIM 111D | Reciprocating Engines II | 3 |
| AVIM 112D | Applied Reciprocating Engines II | 1 |
| AVIM 241 | Aircraft Propeller Systems | 3 |
| AVIM 242 | Applied Aircraft Propeller Systems | 1 |
| AVIM 249 | Induction and Fuel Metering | 3 |
| AVIM 250 | Applied Induction and Fuel Metering | 1 |
| AVIM 253 | Lubrication, Cooling, and Exhaust | 3 |
| AVIM 254 | Applied Lubrication, Cooling, and Exhaust | 1 |

Total Units = 78

Certificate of Achievement: Aviation Maintenance Technology

Airframe

Qualifies the student for the FAA Airframe exam.

Courses Required for the Major: Units

General Curriculum:

| | | |
|-----------|--|-----|
| AVIM 101G | General Aviation Technology Theory I | 6 |
| AVIM 101H | General Aviation Technology Theory II | 6 |
| AVIM 102G | General Aviation Maintenance Technology Practices I | 2 |
| AVIM 102H | General Aviation Maintenance Technology Practices II | 2 |
| AVIM 109D | Aircraft Fire Protection and Digital Logic | 1 |
| AVIM 120 | Basic D.C. Electronics Theory | 3 |
| AVIM 121A | Applied Basic D.C. Electronics | 1.5 |

Airframe Curriculum:

| | | |
|-----------|---|-----|
| AVIM 103A | Aircraft Wood, Fabric, Finishing and Composite Structures | 3 |
| AVIM 104A | Applied Aircraft Wood, Fabric, Finishing and Composite Structures | 1.5 |
| AVIM 103B | Aircraft Welding and Sheetmetal Structures | 3 |
| AVIM 104B | Applied Aircraft Welding and Sheetmetal Structures | 1.5 |
| AVIM 103C | Aircraft Hydraulic Systems | 3 |
| AVIM 104C | Applied Aircraft Hydraulic Systems | 1 |
| AVIM 103D | Aircraft Landing Gear Systems | 3 |
| AVIM 104D | Applied Aircraft Landing Gear Systems | 1 |
| AVIM 105A | Aircraft Cabin Atmosphere Control | 1.5 |
| AVIM 106A | Aircraft Cabin Atmosphere Control | 0.5 |

| | | |
|------------------------|---|-----|
| AVIM 105B | Aircraft Assembly, Rigging and Inspection | 1.5 |
| AVIM 106B | Applied Aircraft Assembly, Rigging and Inspection | 1 |
| AVIM 109A | Airframe Electrical Systems | 3 |
| AVIM 110A | Applied Airframe Electrical Systems | 1 |
| Total Units = 4 | | |

Certificate of Achievement: Aviation Maintenance Technology

Powerplant

Qualifies the student for the FAA Powerplant exam.

Courses Required for the Major: **Units**

General Curriculum

| | | |
|-----------|--|-----|
| AVIM 101G | General Aviation Technology Theory I | 6 |
| AVIM 101H | General Aviation Technology Theory II | 6 |
| AVIM 102G | General Aviation Maintenance Technology Practices I | 2 |
| AVIM 102H | General Aviation Maintenance Technology Practices II | 2 |
| AVIM 109D | Aircraft Fire Protection and Digital Logic | 1 |
| AVIM 120 | Basic D.C. Electronics Theory | 3 |
| AVIM 121A | Applied Basic D.C. Electronics | 1.5 |

Powerplant Curriculum

| | | |
|-----------|---|-----|
| AVIM 107B | Turbine Engines | 3 |
| AVIM 108B | Turbine Engines Laboratory | 1 |
| AVIM 109B | Powerplant Ignition Systems | 2 |
| AVIM 110B | Applied Powerplant Ignition Systems | 0.5 |
| AVIM 109C | Powerplant Electrical Systems | 3 |
| AVIM 110C | Applied Powerplant Electrical Systems | 0.5 |
| AVIM 111C | Reciprocating Engines I | 3 |
| AVIM 112C | Applied Reciprocating Engines I | 2 |
| AVIM 111D | Reciprocating Engines II | 3 |
| AVIM 112D | Applied Reciprocating Engines II | 1 |
| AVIM 241 | Aircraft Propeller Systems | 3 |
| AVIM 242 | Applied Aircraft Propeller Systems | 1 |
| AVIM 249 | Induction and Fuel Metering | 3 |
| AVIM 250 | Applied Induction and Fuel Metering | 1 |
| AVIM 253 | Lubrication, Cooling, and Exhaust | 3 |
| AVIM 254 | Applied Lubrication, Cooling, and Exhaust | 1 |

Total Units = 52.5

Certificate of Achievement: Aviation Maintenance Technology

Pilot Studies

Qualifies the student for the FAA Private Pilot exam, with an emphasis on aircraft maintenance as it applies to the pilot.

Courses Required for the Major: **Units**

General Curriculum

| | | |
|-----------|---------------------------------------|---|
| AVIA 101 | Private Pilot Ground School | 3 |
| AVIA 128 | Group Dynamics: Teams Under Stress | 3 |
| AVIA 133 | Human Factors in Aviation | 3 |
| AVIM 101G | General Aviation Technology Theory I | 6 |
| AVIM 101H | General Aviation Technology Theory II | 6 |

Total Units = 21

Recommended Electives: Aviation 105, Aviation Maintenance Technology 75, 102G, 102H, 105B, 111C, 111D, 112C, 112D.

Certificate of Achievement Aviation Maintenance Technology

Aviation General Studies

Prepares the student for employment in the aviation industry. This program DOES NOT meet the FAA minimum requirements for the Airframe or Powerplant rating. This is also an ideal program for students who already have their Mechanic's Certificate but wish to obtain a degree.

Courses Required for the Major: **Units**

| | | |
|-----------|--|---|
| AVIM 101G | General Aviation Technology Theory I | 6 |
| AVIM 101H | General Aviation Technology Theory II | 6 |
| AVIM 102G | General Aviation Maintenance Technology Practices I | 2 |
| AVIM 102H | General Aviation Maintenance Technology Practices II | 2 |

Select 2 or more units from the following:

General Curriculum:

| | | |
|-----------|--|-----|
| AVIM 109D | Aircraft Fire Protection and Digital Logic | 1 |
| AVIM 120 | Basic D.C. Electronics Theory | 3 |
| AVIM 121A | Applied Basic D.C. Electronics | 1.5 |

Airframe Curriculum:

| | | |
|-----------|---|-----|
| AVIM 103A | Aircraft Wood, Fabric, Finishing and Composite Structures | 3 |
| AVIM 104A | Applied Aircraft Wood, Fabric, Finishing and Composite Structures | 1.5 |

| | | |
|-------------------------------------|--|-------------------------|
| AVIM 103B | Aircraft Welding and Sheetmetal Structures | 3 |
| AVIM 104B | Applied Aircraft Welding and Sheetmetal Structures | 1.5 |
| AVIM 103C | Aircraft Hydraulic Systems | 3 |
| AVIM 104C | Applied Aircraft Hydraulic Systems | 1 |
| AVIM 103D | Aircraft Landing Gear Systems | 3 |
| AVIM 104D | Applied Aircraft Landing Gear Systems | 1 |
| AVIM 105A | Aircraft Cabin Atmosphere Control | 1.5 |
| AVIM 106A | Aircraft Cabin Atmosphere Control | 0.5 |
| AVIM 105B | Aircraft Assembly, Rigging and Inspection | 1.5 |
| AVIM 106B | Applied Aircraft Assembly, Rigging and Inspection | 1 |
| AVIM 109A | Airframe Electrical Systems | 3 |
| AVIM 110A | Applied Airframe Electrical Systems | 1 |
| Powerplant Curriculum: Units | | |
| AVIM 107B | Turbine Engines | 3 |
| AVIM 108B | Turbine Engines Laboratory | 1 |
| AVIM 109B | Powerplant Ignition Systems | 2 |
| AVIM 110B | Applied Powerplant Ignition Systems | 0.5 |
| AVIM 109C | Powerplant Electrical Systems | 3 |
| AVIM 110C | Applied Powerplant Electrical Systems | 0.5 |
| AVIM 111C | Reciprocating Engines I | 3 |
| AVIM 112C | Applied Reciprocating Engines I | 2 |
| AVIM 111D | Reciprocating Engines II | 3 |
| AVIM 112D | Applied Reciprocating Engines II | 1 |
| AVIM 241 | Aircraft Propeller Systems | 3 |
| AVIM 242 | Applied Aircraft Propeller Systems | 1 |
| AVIM 249 | Induction and Fuel Metering | 3 |
| AVIM 250 | Applied Induction and Fuel Metering | 1 |
| AVIM 253 | Lubrication, Cooling, and Exhaust | 3 |
| AVIM 254 | Applied Lubrication, Cooling, and Exhaust | 1 |
| | | Total Units = 18 |

Associate in Science Degree: Aviation Maintenance Technology

Airframe & Powerplant

Qualifies the student for the FAA Airframe and Powerplant exam.

| Courses Required for the Major: | | Units |
|--|---------------------------------------|--------------|
| General Curriculum | | |
| AVIM 101G | General Aviation Technology Theory I | 6 |
| AVIM 101H | General Aviation Technology Theory II | 6 |

| | | |
|------------------------------|---|-------------------------|
| AVIM 102G | General Aviation Maintenance Technology Practices I | 2 |
| AVIM 102H | General Aviation Maintenance Technology Practices II | 2 |
| AVIM 109D | Aircraft Fire Protection and Digital Logic | 1 |
| AVIM 120 | Basic D.C. Electronics Theory | 3 |
| AVIM 121A | Applied Basic D.C. Electronics | 1.5 |
| Airframe Curriculum | | |
| AVIM 103A | Aircraft Wood, Fabric, Finishing and Composite Structures | 3 |
| AVIM 104A | Applied Aircraft Wood, Fabric, Finishing and Composite Structures | 1.5 |
| AVIM 103B | Aircraft Welding and Sheetmetal Structures | 3 |
| AVIM 104B | Applied Aircraft Welding and Sheetmetal Structures | 1.5 |
| AVIM 103C | Aircraft Hydraulic Systems | 3 |
| AVIM 104C | Applied Aircraft Hydraulic Systems | 1 |
| AVIM 103D | Aircraft Landing Gear Systems | 3 |
| AVIM 104D | Applied Aircraft Landing Gear Systems | 1 |
| AVIM 105A | Aircraft Cabin Atmosphere Control | 1.5 |
| AVIM 106A | Aircraft Cabin Atmosphere Control | 0.5 |
| AVIM 105B | Aircraft Assembly, Rigging and Inspection | 1.5 |
| AVIM 106B | Applied Aircraft Assembly, Rigging and Inspection | 1 |
| AVIM 109A | Airframe Electrical Systems | 3 |
| AVIM 110A | Applied Airframe Electrical Systems | 1 |
| Powerplant Curriculum | | |
| AVIM 107B | Turbine Engines | 3 |
| AVIM 108B | Turbine Engines Laboratory | 1 |
| AVIM 109B | Powerplant Ignition Systems | 2 |
| AVIM 110B | Applied Powerplant Ignition Systems | 0.5 |
| AVIM 109C | Powerplant Electrical Systems | 3 |
| AVIM 110C | Applied Powerplant Electrical Systems | 0.5 |
| AVIM 111C | Reciprocating Engines I | 3 |
| AVIM 112C | Applied Reciprocating Engines I | 2 |
| AVIM 111D | Reciprocating Engines II | 3 |
| AVIM 112D | Applied Reciprocating Engines II | 1 |
| AVIM 241 | Aircraft Propeller Systems | 3 |
| AVIM 242 | Applied Aircraft Propeller Systems | 1 |
| AVIM 249 | Induction and Fuel Metering | 3 |
| AVIM 250 | Applied Induction and Fuel Metering | 1 |
| AVIM 253 | Lubrication, Cooling, and Exhaust | 3 |
| AVIM 254 | Applied Lubrication, Cooling, and Exhaust | 1 |
| | | Total Units = 78 |

For graduation requirements see **Associate Degree Requirements** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Associate in Science Degree: Aviation Maintenance Technology

Airframe

Qualifies the student for the FAA Airframe exam.

Courses Required for the Major: Units

General Curriculum:

| | | |
|-----------|--|-----|
| AVIM 101G | General Aviation Technology Theory I | 6 |
| AVIM 101H | General Aviation Technology Theory II | 6 |
| AVIM 102G | General Aviation Maintenance Technology Practices I | 2 |
| AVIM 102H | General Aviation Maintenance Technology Practices II | 2 |
| AVIM 109D | Aircraft Fire Protection and Digital Logic | 1 |
| AVIM 120 | Basic D.C. Electronics Theory | 3 |
| AVIM 121A | Applied Basic D.C. Electronics | 1.5 |

Airframe Curriculum:

| | | |
|-----------|---|-----|
| AVIM 103A | Aircraft Wood, Fabric, Finishing and Composite Structures | 3 |
| AVIM 104A | Applied Aircraft Wood, Fabric, Finishing and Composite Structures | 1.5 |
| AVIM 103B | Aircraft Welding and Sheetmetal Structures | 3 |
| AVIM 104B | Applied Aircraft Welding and Sheetmetal Structures | 1.5 |
| AVIM 103C | Aircraft Hydraulic Systems | 3 |
| AVIM 104C | Applied Aircraft Hydraulic Systems | 1 |
| AVIM 103D | Aircraft Landing Gear Systems | 3 |
| AVIM 104D | Applied Aircraft Landing Gear Systems | |
| AVIM 105A | Aircraft Cabin Atmosphere Control | 1.5 |
| AVIM 106A | Aircraft Cabin Atmosphere Control | 0.5 |
| AVIM 105B | Aircraft Assembly, Rigging and Inspection | 1.5 |
| AVIM 106B | Applied Aircraft Assembly, Rigging and Inspection | 1 |
| AVIM 109A | Airframe Electrical Systems | 3 |
| AVIM 110A | Applied Airframe Electrical Systems | 1 |

Total Units = 47

For graduation requirements see **Associate Degree Requirements** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Associate in Science Degree: Aviation Maintenance Technology

Powerplant

Qualifies the student for the FAA Powerplant exam.

Courses Required for the Major: Units

General Curriculum

| | | |
|-----------|--|-----|
| AVIM 101G | General Aviation Technology Theory I | 6 |
| AVIM 101H | General Aviation Technology Theory II | 6 |
| AVIM 102G | General Aviation Maintenance Technology Practices I | 2 |
| AVIM 102H | General Aviation Maintenance Technology Practices II | 2 |
| AVIM 109D | Aircraft Fire Protection and Digital Logic | 1 |
| AVIM 120 | Basic D.C. Electronics Theory | 3 |
| AVIM 121A | Applied Basic D.C. Electronics | 1.5 |

Powerplant Curriculum

| | | |
|-----------|---|-----|
| AVIM 107B | Turbine Engines | 3 |
| AVIM 108B | Turbine Engines Laboratory | 1 |
| AVIM 109B | Powerplant Ignition Systems | 2 |
| AVIM 110B | Applied Powerplant Ignition Systems | 0.5 |
| AVIM 109C | Powerplant Electrical Systems | 3 |
| AVIM 110C | Applied Powerplant Electrical Systems | 0.5 |
| AVIM 111C | Reciprocating Engines I | 3 |
| AVIM 112C | Applied Reciprocating Engines I | 2 |
| AVIM 111D | Reciprocating Engines II | 3 |
| AVIM 112D | Applied Reciprocating Engines II | 1 |
| AVIM 241 | Aircraft Propeller Systems | 3 |
| AVIM 242 | Applied Aircraft Propeller Systems | 1 |
| AVIM 249 | Induction and Fuel Metering | 3 |
| AVIM 250 | Applied Induction and Fuel Metering | 1 |
| AVIM 253 | Lubrication, Cooling, and Exhaust | 3 |
| AVIM 254 | Applied Lubrication, Cooling, and Exhaust | 1 |

Total Units = 52.5

For graduation requirements see **Associate Degree Requirements** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Associate in Science Degree: Aviation Maintenance Technology

Pilot Studies

Qualifies the student for the FAA Private Pilot exam, with an emphasis on aircraft maintenance as it applies to the pilot.

| Courses Required for the Major: | | Units |
|--|---------------------------------------|--------------|
| General Curriculum | | |
| AVIA 101 | Private Pilot Ground School | 3 |
| AVIA 128 | Group Dynamics: Teams Under Stress | 3 |
| AVIA 133 | Human Factors in Aviation | 3 |
| AVIM 101G | General Aviation Technology Theory I | 6 |
| AVIM 101H | General Aviation Technology Theory II | 6 |
| Total Units = 21 | | |

Recommended Electives: Aviation 105, Aviation Maintenance Technology 75, 102G, 102H, 105B, 111C, 111D, 112C, 112D.

For graduation requirements see **Associate Degree Requirements** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Students who intend to transfer to a four-year institution should select courses for their General Education requirements that are on the CSU General Education Breadth List.

Associate in Science Degree Aviation Maintenance Technology

Aviation General Studies

Prepares the student for employment in the aviation industry. This program DOES NOT meet the FAA minimum requirements for the Airframe or Powerplant rating. This is also an ideal program for students who already have their Mechanic's Certificate but wish to obtain a degree.

Note: Prerequisites may be waived depending on the student's background.

| Courses Required for the Major: | | Units |
|--|--|--------------|
| AVIM 101G | General Aviation Technology Theory I | 6 |
| AVIM 101H | General Aviation Technology Theory II | 6 |
| AVIM 102G | General Aviation Maintenance Technology Practices I | 2 |
| AVIM 102H | General Aviation Maintenance Technology Practices II | 2 |

Select 2 or more units from the following:

General Curriculum:

| | | |
|-----------|--|-----|
| AVIM 109D | Aircraft Fire Protection and Digital Logic | 1 |
| AVIM 120 | Basic D.C. Electronics Theory | 3 |
| AVIM 121A | Applied Basic D.C. Electronics | 1.5 |

Airframe Curriculum:

| | | |
|-----------|---|-----|
| AVIM 103A | Aircraft Wood, Fabric, Finishing and Composite Structures | 3 |
| AVIM 104A | Applied Aircraft Wood, Fabric, Finishing and Composite Structures | 1.5 |
| AVIM 103B | Aircraft Welding and Sheetmetal Structures | 3 |
| AVIM 103C | Aircraft Hydraulic Systems | 3 |
| AVIM 104B | Applied Aircraft Welding and Sheetmetal Structures | 1.5 |
| AVIM 104C | Applied Aircraft Hydraulic Systems | 1 |
| AVIM 103D | Aircraft Landing Gear Systems | 3 |
| AVIM 104D | Applied Aircraft Landing Gear Systems | 1 |
| AVIM 105A | Aircraft Cabin Atmosphere Control | 1.5 |
| AVIM 106A | Aircraft Cabin Atmosphere Control | 0.5 |
| AVIM 105B | Aircraft Assembly, Rigging and Inspection | 1.5 |
| AVIM 106B | Applied Aircraft Assembly, Rigging and Inspection | 1 |
| AVIM 109A | Airframe Electrical Systems | 3 |
| AVIM 110A | Applied Airframe Electrical Systems | 1 |

Powerplant Curriculum:

| | | |
|-----------|---|-----|
| AVIM 107B | Turbine Engines | 3 |
| AVIM 108B | Turbine Engines Laboratory | 1 |
| AVIM 109B | Powerplant Ignition Systems | 2 |
| AVIM 110B | Applied Powerplant Ignition Systems | 0.5 |
| AVIM 109C | Powerplant Electrical Systems | 3 |
| AVIM 110C | Applied Powerplant Electrical Systems | 0.5 |
| AVIM 111C | Reciprocating Engines I | 3 |
| AVIM 112C | Applied Reciprocating Engines I | 2 |
| AVIM 111D | Reciprocating Engines II | 3 |
| AVIM 112D | Applied Reciprocating Engines II | 1 |
| AVIM 241 | Aircraft Propeller Systems | 3 |
| AVIM 242 | Applied Aircraft Propeller Systems | 1 |
| AVIM 249 | Induction and Fuel Metering | 3 |
| AVIM 250 | Applied Induction and Fuel Metering | 1 |
| AVIM 253 | Lubrication, Cooling, and Exhaust | 3 |
| AVIM 254 | Applied Lubrication, Cooling, and Exhaust | 1 |

Total Units = 18

For graduation requirements, see **Requirements for the Associate Degree** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Aviation Operations

| Award Type | Units |
|--|-------|
| Certificate of Performance: | |
| Commercial Pilot | 6 |
| Flight Instructor | 7 |
| Helicopter Operations | 9 |
| Instrument Pilot | 7 |
| Private Pilot | 6 |
| Team Resource Management | 9 |
| Certificate of Achievement: | |
| Management | 25 |
| Professional Pilot | 26 |
| Associate in Science Degree: | |
| Management | 25* |
| Professional Pilot | 26* |
| * and electives as needed to meet minimum of 60 units required for the degree. | |

Description

The Aviation Operations Program integrates simulator flight training with rigorous academic study, proving a strong foundation for leadership positions within the aviation industry. The program emphasizes the study of a unique combination of group dynamics, human factors, and safety awareness along with the technical fundamentals of flight in order to enhance students' development of situational awareness, critical thinking and problem solving skills. Miramar College's Aviation Operation Program meets all requirements of the Federal Aviation Administration's Part 141 Pilot Ground School.

Career Options

The following is an abbreviated list of the myriad of career training options the Aviation Operations Program prepares its graduates to embark upon: Airline Management, Airport Management, Airport Security, Air Traffic Control, Border Patrol, Commercial Airline Pilot, Corporate Pilot, Certificated Flight Instructor, Federal Air Marshal, Federal Aviation Administration, Fixed Base Operator Management, Flying Club Management, Flight Attendant, Flight Operations Supervisor, Transportation Security Administration, US Military.

| Faculty | Office | Telephone |
|-------------|---------|--------------|
| Duane Short | F1-103H | 619-388-7660 |

Student Learning Outcomes

Upon successful completion of the Aviation Operations program students will:

- Demonstrate preparedness to complete, or continue preparation for, the respective Federal Aviation Administration written examination.
- Demonstrate ability to communicate effectively with individuals, teams and large groups.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

Credit for FAA Pilot Certificates

Pending Aviation Operations Program Director review and approval, students who already possess the associated FAA pilot certificate or rating may challenge up to two of the following courses: (AVIA 101) Private Pilot Ground School, (AVIA 199) Instrument Ground School, (AVIA 201) Commercial Airline Pilot Instruction, (AVIA 212) Professional Flight Instructor Ground School.

Flight Training

Pending Aviation Operations Program Director review and approval, a student awarded a Miramar College Certificate of Performance for an academic phase of ground instruction (AVIA 101, 199, 201, 212) who subsequently earns the associated FAA certificate or rating can request that 3 units of credit be awarded for that flight training. As a result, it is possible for a student to earn up to 12 units at Miramar College for flight training.

Transfer Information

Common university majors related to the field of Aviation Operations include: Aeronautical Science and Engineering, Aviation, Aviation Administration, and Professional Aeronautics.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Science degree with an area of emphasis in

Occupational/Technical Studies (see page 182). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Certificate of Performance: Commercial Pilot*

| Courses: | Units |
|---|--------------|
| AVIA 133 Human Factors in Aviation | 3 |
| AVIA 201 Commercial Airline Pilot Instruction | 3 |
| Total Units = 6 | |

When passed with a "C" or better, indicates student qualification to take the FAA Commercial Pilot Knowledge Examination.

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Performance: Flight Instructor*

| Courses: | Units |
|--|--------------|
| AVIA 133 Human Factors in Aviation | 3 |
| AVIA 212 Flight Instructor Ground School | 4 |
| Total Units = 7 | |

When passed with a "C" or better, indicates student qualification to take the FAA Fundamentals of Instruction and the Certified Flight Instructor Knowledge Examination.

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Performance: Helicopter Operations*

The Certificate of Performance Helicopter Operations provides an introduction to helicopter operations and careers.

| Courses: | Units |
|---|--------------|
| AVIA 101 Private Pilot Ground School | 3 |
| AVIA 133 Human Factors in Aviation | 3 |
| AVIA 151 Helicopter Pilot Ground School | 3 |
| Total Units = 9 | |

When passed with a "C" or better indicates student qualification to take the FAA Helicopter Private Pilot Knowledge Examination.

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Performance: Instrument Pilot*

| Courses: | Units |
|------------------------------------|--------------|
| AVIA 133 Human Factors in Aviation | 3 |
| AVIA 199 Instrument Ground School | 4 |
| Total Units = 7 | |

When passed with a "C" or better, indicates student qualification to take the FAA Instrument Rating Knowledge Examination.

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Performance: Private Pilot*

| Courses: | Units |
|--------------------------------------|--------------|
| AVIA 101 Private Pilot Ground School | 3 |
| AVIA 133 Human Factors in Aviation | 3 |
| Total Units = 6 | |

When passed with a "C" or better, indicates student qualification to take the FAA Private Pilot Knowledge Examination.

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Performance: Team Resource Management*

The award of this Certificate represents a focused study of the human factors which affect performance in high-risk teams.

| Courses: | Units |
|---|--------------|
| AVIA 128 Group Dynamics: Teams Under Stress | 3 |
| AVIA 133 Human Factors in Aviation | 3 |
| AVIA 228 Group Dynamics II | 3 |
| Total Units = 9 | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Achievement or Associate in Science Degree: Aviation Operations

Management

| Courses Required for the Major: | | Units |
|---------------------------------|---|-------|
| AVIA 053 | Aviation Career Skills | 1 |
| AVIA 101 | Private Pilot Ground School | 3 |
| AVIA 105 | Introduction to Aviation and Aerospace | 3 |
| AVIA 125 | Aviation and Airport Management | 3 |
| AVIA 128 | Group Dynamics for High Risk Teams | 3 |
| AVIA 133 | Human Factors in Aviation | 3 |
| AVIA 195 | Basic Instrument Flight Procedures | 3 |
| AVIA 196 | Basic Instrument Flight Lab | 1 |
| AVIA 225 | Introduction to Commercial Airline Management | 3 |
| AVIA 278 | Command, Leadership and Decision Making | 3 |

Select at least three units from the following:

| | | |
|-----------|--|---|
| AVIA 101L | Private Pilot Flight Lab | 1 |
| AVIA 103 | Private Pilot Knowledge Review | 1 |
| AVIA 151 | Helicopter Pilot Ground School | 3 |
| AVIA 212 | Flight Instructor Ground School | 4 |
| AVIA 228 | Group Dynamics II | 3 |
| BUSE 119 | Business Communications | 3 |
| BUSE 140 | Business Law and the Legal Environment | 3 |
| BUSE 201 | Business Organization and Management | 3 |

Total Units= 29-30

Courses must be taken for a letter grade if used to satisfy degree requirements.

Note: Private Pilot certificate satisfies the AVIA 195 and 196 requirement.

For graduation requirements, see **Requirements for the Associate Degree** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Certificate of Achievement or Associate in Science Degree: Aviation Operations

Professional Pilot

| Courses Required for the Major: | | Units |
|---------------------------------|---|-------|
| AVIA 053 | Aviation Career Skills | 1 |
| AVIA 101 | Private Pilot Ground School | 3 |
| AVIA 105 | Introduction to Aviation and Aerospace | 3 |
| AVIA 125 | Aviation and Airport Management | 3 |
| AVIA 128 | Group Dynamics for High Risk Teams | 3 |
| AVIA 133 | Human Factors in Aviation | 3 |
| AVIA 199 | Instrument Ground School | 4 |
| AVIA 201 | Commercial Airline Pilot Instruction | 3 |
| AVIA 278 | Command, Leadership and Decision Making | 3 |

Select at least three units from the following:

| | | |
|-----------|--|---|
| AVIA 101L | Private Pilot Flight Lab | 1 |
| AVIA 103 | Private Pilot Knowledge Review | 1 |
| AVIA 151 | Helicopter Pilot Ground School | 3 |
| AVIA 212 | Flight Instructor Ground School | 4 |
| AVIA 228 | Group Dynamics II | 3 |
| BUSE 119 | Business Communications | 3 |
| BUSE 140 | Business Law and the Legal Environment | 3 |
| BUSE 201 | Business Organization and Management | 3 |

Total Units = 29-30

Note: Courses must be taken for a letter grade if used to satisfy degree requirements.

For graduation requirements, see **Requirements for the Associate Degree** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Biology

| Award Type | Units |
|--|-------|
| Certificate of Performance: | |
| Applied Biotechnology-Analytical Chemistry | 9 |
| Applied Biotechnology-Molecular Biology | 8 |
| Associate in Science Degree: | |
| Allied Health Track | 21* |
| Applied Biology Track | 35* |
| Biology Studies | 18* |
| * and electives as needed to meet minimum of 60 units required for the degree. | |

Description

Biology is a natural science that focuses on physical and chemical processes of living organisms. This discipline explores how organisms acquire and use energy to maintain homeostasis, how they reproduce, and how they interact with each other and their environment. Scientific processes are emphasized as a means of answering these biological questions. Biologists rely heavily on a chemistry foundation since living organisms are chemical systems.

Program Learning Outcomes

The biology program serves four areas of study. First, it provides a broad background of studies for the biology major preparing for transfer to a four-year institution. Second, the Applied Biology Associate Degree curriculum provides preparation for entry level employment as a technician in the life sciences industry. In addition to the associate degree programs, certificates in Applied Biotechnology with emphasis in either Molecular Biology or Analytical Chemistry are offered. The biology program also offers support courses in human anatomy, human physiology and general microbiology which may be used to satisfy prerequisites for nursing programs and other allied health fields. Fourth, the biology program provides courses in natural science to fulfill general education requirements.

| Faculty | Office | Telephone/Email |
|-----------------------|---------|------------------------------------|
| Rebecca Bowers-Gentry | M-211Q | 619-388-7241 rbowersg@sdccd.edu |
| Patricia Flower | S5-101F | 619-388-7489 pflower@sdccd.edu |
| Buran Haidar | S5-101D | 619-388-7412 bhaidar@sdccd.edu |

| Faculty | Office | Telephone/Email |
|---------------|---------|--|
| Andrew Lowe | S5-101H | 619-388-7536 alowe@sdccd.edu |
| Marie McMahon | S5-101E | 619-388-7497 mmcmahon@sdccd.edu |
| Laura Murphy | S5-101G | 619-388-7539 lmurphy@sdccd.edu |
| Kevin Petti | S5-101B | 619-388-7491 kpetti@sdccd.edu |
| Sandra Slivka | S5-101C | 619-388-7490/7422 sslivka@sdccd.edu |
| Dan Trubovitz | S5-101A | 619-388-7495 dtrubovi@sdccd.edu |

Career Options

The following list is a sample of the many career options available for the biology major. A few of these require a certificate, some an associate degree, some a baccalaureate degree and some require a graduate level degree: agricultural consultant, animal health technician, biotechnology technician, dentist, environmental consultant, field biologist, forester, horticulturist, high school or college teacher, marine biologist, microbiologist, public health technician, physician, pharmaceutical researcher, research biologist, lab assistant, and veterinarian. In addition, a background in biology may be required for the following: registered nurse, physical therapist, respiratory therapist, dental hygienist, medical technician, physician's assistant, and optometrist.

Student Learning Outcomes

Students who complete the Biology Program will be able to:

- Apply biology knowledge to new situations and the global economy.
- Explain the importance of the scientific method to the process of science, including in scientific experiments.
- Prepare, present and analyze biological data in a graphical format.
- Describe the applications of biology in career settings.
- Demonstrate knowledge of biology and how it relates to current events.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

Academic Programs

The associate degrees and the certificates in Biology offered at Miramar College require completion of the courses listed below. Additional general education and graduation requirements for the associate degree are listed in the catalog. The associate degree requires a minimum of 60 units.

Transfer Information

Common university majors related to the field of Biology include: Agricultural Science, Biochemistry, Bioengineering and Technology, Bioinformatics, Biological Sciences, Biophysics, Botany and plant Sciences, Cell Biology, Conservation, Developmental Biology, Ecology, Entomology, Exercise Science, Genetics, Kinesiology, Marine Biology, Medical Sciences, Microbiology, Molecular Biology, Natural Sciences, Neuroscience, Nursing, Nutrition and Food Science, Psychobiology, Toxicology, Zoology and Animal Sciences.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Science degree with an area of emphasis in Biology Studies (see below). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Certificate of Performance: Applied Biotechnology-Analytical Chemistry*

Students may take the specific biotechnology courses and receive a Certificate of Performance authorized and issued by the academic department. It is not intended to nor will it be recognized as an official state approved program. It is intended to provide students with intensive laboratory skills development experience to meet entry-level employment requirements in the biotechnology industry.

| Courses: | | Units |
|------------------------|-------------------------|-------|
| BIOL 132 | Applied Biotechnology I | 4 |
| CHEM 251 | Analytical Chemistry | 5 |
| Total Units = 9 | | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Performance: Applied Biotechnology-Molecular Biology*

Students may take the specific biotechnology courses and receive a Certificate of Performance authorized and issued by the academic department. It is not intended to nor will it be recognized as an official state approved program. It is intended to provide students with intensive laboratory skills development experience to meet entry-level employment requirements in the biotechnology industry.

| Courses: | | Units |
|------------------------|--------------------------|-------|
| BIOL 132 | Applied Biotechnology I | 4 |
| BIOL 133 | Applied Biotechnology II | 4 |
| Total Units = 8 | | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Associate in Science Degree: Biology

Allied Health Track

Consult the Nursing Education faculty (City College) or a counselor to verify current course requirements for associate degree and baccalaureate nursing program preparation.

| Courses Required for the Major: | | Units |
|---------------------------------|---------------------------------|-------|
| BIOL 107 | General Biology - Lecture & Lab | 4 |
| BIOL 205 | General Microbiology | 5 |
| BIOL 230 | Human Anatomy | 4 |
| BIOL 235 | Human Physiology | 4 |
| CHEM 100 | Fundamentals of Chemistry | 3 |
| CHEM 100L | Fundamentals of Chemistry Lab | 1 |
| Total Units = 21 | | |

Note: Only one Biology (BIOL) course, from the above list may be used to satisfy SDCCD general education requirements.

For graduation requirements, see **Requirements for the Associate Degree** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Recommended Electives: Biology 101*, 115, 130, 131, 180, 215, 250; Chemistry 130, 130L.

***Note:** Only one Biology (BIOL) course, from the above list may be used to satisfy SDCCD general education requirements. BIOL 101 is not currently offered at Miramar College, but is offered at City College.

Associate in Science Degree: Biology

Applied Biology Track

| Courses Required for the Major: | | Units |
|---------------------------------|-----------------------------------|-------|
| BIOL 107 | General Biology - Lecture & Lab | 4 |
| BIOL 131 | Introduction to Biotechnology | 4 |
| BIOL 205 | General Microbiology | 5 |
| BIOL 132 | Applied Biotechnology I | 4 |
| BIOL 133 | Applied Biotechnology II | 4 |
| CHEM 200 | General Chemistry I - Lecture | 3 |
| CHEM 200L | General Chemistry I - Lab | 2 |
| CHEM 201 | General Chemistry II - Lecture | 3 |
| CHEM 201L | General Chemistry II - Lab | 2 |
| **CISC 181 | Principles of Information Systems | 4 |
| Total Units = 35 | | |

Note: Only one Biology (BIOL) course, from the above list may be used to satisfy SDCCD general education requirements.

****Students may complete this course requirement by challenge exam or other equivalent proof of computer/software proficiency certified by the CISC department.**

For graduation requirements, see **Requirements for the Associate Degree** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Recommended Electives: Biology 131; Physics 121A, 121B, 180A, 180B.

Associate in Science Degree: Biology Studies

The Associate in Science degree with an area of emphasis in Biology Studies is intended for students who plan to complete a bachelor's degree at a transfer institution in a biology-related major.

Common university majors in this field include: Agricultural Science, Biochemistry, Bioengineering, Bioinformatics, Biological Sciences, Biophysics, Biotechnology, Botany, Cell Biology, Conservation, Developmental Biology, Ecology, Entomology, Life Science, Genetics, Marine Biology, Medical Sciences, Microbiology, Molecular Biology, Natural Sciences, Neuroscience, Psychobiology, Toxicology, and Zoology/Animal Sciences.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

| Courses Required for the Major: | | Units |
|---------------------------------|---|-------|
| BIOL 210A | Introduction to the Biological Sciences I | 4 |

Select 4 to 9 units from the following:

| | | |
|-----------|--|-----|
| BIOL 210B | Introduction to the Biological Sciences II | |
| CHEM 200 | General Chemistry I - Lecture | |
| CHEM 200L | General Chemistry I - Laboratory | 4-9 |

Select 5 to 10 or more units from the following:

| | | |
|-----------|---|--|
| ACCT 116A | Financial Accounting | |
| ACCT 116B | Managerial Accounting | |
| BIOL 115 | Marine Biology | |
| BIOL 205 | General Microbiology | |
| BIOL 215 | Introduction to Zoology | |
| BIOL 230 | Human Anatomy | |
| BIOL 235 | Human Physiology | |
| BIOL 250 | Introduction to Botany | |
| CHEM 201 | General Chemistry II - Lecture | |
| CHEM 201L | General Chemistry II - Laboratory | |
| CISC 190 | Java Programming | |
| CISC 192 | C/C++ Programming | |
| MATH 104 | Trigonometry | |
| MATH 116 | College and Matrix Algebra | |
| MATH 119 | Elementary Statistics | |
| MATH 121 | Basic Techniques of Applied Calculus I | |
| MATH 122 | Basic Techniques of Applied Calculus II | |
| MATH 141 | Precalculus | |
| MATH 150 | Calculus with Analytic Geometry I | |
| MATH 151 | Calculus with Analytic Geometry II | |
| PHYS 125 | General Physics | |
| PHYS 126 | General Physics II | |
| PHYS 195 | Mechanics | |
| PHYS 196 | Electricity and Magnetism | |
| PHYS 197 | Waves, Optics, and Modern Physics | |

| | | |
|----------|-------------------------------|------|
| PSYC 101 | General Psychology | |
| PSYC 258 | Behavioral Science Statistics | |
| SOCO 101 | Principles of Sociology | |
| | | 5-10 |

Total Units = 18

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Business Administration

| Award Type | Units |
|--|-------|
| Certificate of Achievement: Business Administration | 30 |
| Associate in Science Degree: Business Administration | 33* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

The business program prepares the student for transfer to a four-year college or for a business occupational area of his/her own choice.

Program Learning Outcomes

The Business Program offers a certificate of Achievement and an Associate of Science Degree in Business Administration, Business Management, and Business Management: Mortgage Brokerage and Banking.

| Faculty | Office | Telephone |
|----------------|---------|--------------|
| Octavian Dobre | M-107-F | 619-388-7692 |

Career Options

Prepares students for initial employment in the mortgage brokerage and banking industry. Flexible course selection makes it possible for a student to advance or start a small business of his own. Further education may be necessary for entry-level management positions.

Student Learning Outcomes

Students who complete the Business Administration Program will be able to:

- Perform fundamental accounting and financial management operations associated with business enterprise management.
- Apply management, human resource, and personnel practices and approaches to organizational problem solving.
- Identify good business ethics, social responsibility, and discuss the vital role in the establishment of trust and honesty expected of supervisory/managers and leaders today.

- Critically analyze the external and internal environments of a business organization and formulate appropriate strategies.
- Demonstrate ability to communicate effectively with individuals, teams and large groups.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

Transfer Information

Common university majors related to the field of Business Administration include: Accounting, Agricultural Business, Apparel Design and Merchandising, Business Administration, Business Economics, Business Information Systems, Business Law, Construction Management, E-Business, Economics, Entrepreneurship, Finance/Financial Services, Health Administration, Hospitality Management, Human Resources, Industrial Engineering and Technology, International Business, Management, Marketing, Public Administration, Real Estate, Transportation.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Arts degree with an area of emphasis in Social and Behavioral Sciences (see page 201). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Certificate of Achievement: Business Administration

| Courses Required for the Major: | Units |
|--|--------------|
| BUSE 100 Introduction to Business (recommended as a first semester course) or | |
| MARK 100 Principles of Marketing | 3 |
| BUSE 119 Business Communications | 3 |
| BUSE 140 Business Law & the Legal Environment | 3 |
| ACCT 116A Financial Accounting | 4 |

| | |
|--|---|
| ACCT 116B Managerial Accounting | 4 |
| CISC 181 Principles of Information Systems | 4 |
| ECON 120 Principles of Macroeconomics | 3 |
| ECON 121 Principles of Microeconomics | 3 |
| MATH 119 Elementary Statistics | 3 |

Total Units = 30

The Business Administration degree is not intended for transfer.

Associate in Science Degree: Business Administration

| Courses Required for the Major: | Units |
|--|--------------|
| BUSE 100 Introduction to Business (recommended as a first semester course) or | |
| MARK 100 Principles of Marketing | 3 |
| BUSE 119 Business Communications | 3 |
| BUSE 140 Business Law & the Legal Environment | 3 |
| ACCT 116A Financial Accounting | 4 |
| ACCT 116B Managerial Accounting | 4 |
| CISC 181 Principles of Information Systems | 4 |
| ECON 120 Principles of Macroeconomics | 3 |
| ECON 121 Principles of Microeconomics | 3 |
| ENGL 101 Reading and Composition | 3 |
| MATH 119 Elementary Statistics | 3 |

Total Units = 33

Note: Only one Business (BUSE) course from the above list may be used to satisfy SDCCD general education requirements.

For graduation requirements, see **Requirements for the Associate Degree** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Recommended Electives: Business 092*, 101, 270; Marketing 100. Electives should be chosen after consultation with a counselor and with reference to programs at a four-year institution to which the student will transfer.

*Business 092 is not offered currently at Miramar College, but is offered at City College.

Business Management

| Award Type | Units |
|--|-------|
| Certificate of Performance: | |
| Loan Closer | 8 |
| Loan Processor | 9 |
| Loan Underwriter | 9 |
| Certificate of Achievement: | |
| Business Management | 35 |
| Mortgage Brokerage & Banking | 18 |
| Associate in Science Degree: | |
| Accountancy | 39* |
| Business Management | 47* |
| Mortgage Brokerage & Banking | 27* |
| Occupational/Technical Studies (see page 182) | 18* |
| * and electives as needed to meet minimum of 60 units required for the degree. | |

Description

Intended for the student who wishes to plan a program in preparation for a business occupational area of his/her own choice. Flexible course selection is emphasized to enable students to achieve their specific educational, vocational and personal goals.

Program Learning Outcomes

The Business Program offers a certificate of Achievement and an Associate of Science Degree in Business Management. This program prepares students for initial employment in the business field or the possibility of starting a small business of his/her own.

Student Learning Outcomes

Students who complete the Business Management Program will be able to:

- Apply techniques and theories from various areas of business to business situations.
- Demonstrate the roles, responsibility, and expected results of people performing the supervisory/management and/or leadership roles in an organization by identifying the key concepts.
- Analyze their own capabilities using real world case scenarios to gain an understanding of what is required to gain employment in this field.

- Demonstrate effective analytical and critical thinking skills to make an appropriate decision in a complex situation.
- Identify good business ethics, social responsibility, and discuss the vital role in the establishment of trust and honesty expected of supervisory/managers and leaders today.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone |
|----------------|--------|--------------|
| Octavian Dobre | M-107F | 619-388-7692 |

Transfer Information

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Science degree with an area of emphasis in Occupational/Technical Studies (see page 182). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Accountancy

Description

The documentation of business activities is accomplished through accounting. Without accurate and timely accounting information businesses do not know their financial position, who owes them money, who they owe money to, or what assets they have available for business processes, etc. This program addresses the minimum skill levels to enter the technical and exacting world of accountancy.

Program Goals

With the basic knowledge of financial and managerial accounting, computerized accounting applications, accounting terminology, the process and flow of accounting an individual is ready for the entry level positions in service, retail, and manufacturing businesses. This educational path

addresses student learning objectives of 1) analyzing business events to determine the requirement for fiscal documentation, 2) appropriately recording business fiscal events as related to timing, classification, and values, 3) generating and verifying fiscal reports for financial and managerial needs, and 4) knowledge of the payroll process and the obligations and liabilities incurred through employees.

Program Emphasis

The program emphasis is the role and tasks of the bookkeeper and/or accountant in service, retail, and manufacturing businesses in today's changing environment of rules, regulations, and technology.

Careers

Career options include entry into the accounting profession as small business bookkeeping, accounts receivable, accounts payable, inventory, cost, or payroll clerk.

Associate in Science Degree: Accountancy

General knowledge of financial and managerial accounting in a technological environment as well as introductory knowledge of inventory, cost, and payroll accounting.

| Courses Required for the Major: | Units |
|---|--------------|
| ACCT 116A Financial Accounting | 4 |
| ACCT 116B Managerial Accounting | 4 |
| ACCT 120 Federal Income Tax | 3 |
| ACCT 150 Computer Accounting Applications | 3 |
| ACCT 201A Intermediate Accounting I | 3 |
| ACCT 201B Intermediate Accounting II | 3 |
| BUSE 100 Introduction to Business | 3 |
| BUSE 119 Business Communications | 3 |
| BUSE 140 Business Law and the Legal Environment | 3 |
| CISC 181 Principles of Information Systems | 4 |
| ECON 120 Principles of Macroeconomics | 3 |
| ECON 121 Principles of Microeconomics | 3 |
| Total Units = 39 | |

For graduation requirements, see **Requirements for the Associate Degree** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Recommended Electives: Accounting 121, 125, 135, 270; Business 150, 155, 201; Communication

Studies 135; Computer Business Technology 140, 140A; Psychology 101.

| Semester Sequence | Units |
|---|--------------|
| First | |
| ACCT 116A Financial Accounting | 4 |
| BUSE 100 Introduction to Business | 3 |
| BUSE 119 Business Communications | 3 |
| Second | |
| ACCT 116B Managerial Accounting | 4 |
| BUSE 140 Business Law and the Legal Environment | 3 |
| CISC 181 Principles of Information Systems | 4 |
| Third | |
| ACCT 150 Computer Accounting Applications | 3 |
| ACCT 201A Intermediate Accounting I | 3 |
| ECON 120 Principles of Macroeconomics | 3 |
| Fourth | |
| ACCT 120 Federal Income Tax | 3 |
| ACCT 201B Intermediate Accounting II | 3 |
| ECON 121 Principles of Microeconomics | 3 |

Certificate of Achievement: Business Management

| Courses Required for the Major: | Units |
|--|--------------|
| BUSE 100 Introduction to Business (recommended as a first semester course) | 3 |
| BUSE 101 Business Mathematics | 3 |
| BUSE 119 Business Communications | 3 |
| BUSE 140 Business Law & the Legal Environment | 3 |
| ACCT 116A Financial Accounting | 4 |
| CISC 181 Principles of Information Systems | 4 |
| ECON 120 Principles of Macroeconomics | 3 |
| **Occupational Electives | 12 |
| Total Units = 35 | |

Associate in Science Degree: Business Management

| Courses Required for the Major: | Units |
|--|--------------|
| BUSE 100 Introduction to Business (recommended as a first semester course) | 3 |
| BUSE 101 Business Mathematics | 3 |
| BUSE 119 Business Communications | 3 |
| BUSE 140 Business Law & the Legal Environment | 3 |
| BUSE 150 Human Relations in Business | 3 |

| | | |
|--------------------------|--------------------------------------|----|
| BUSE 201 | Business Organization and Management | 3 |
| ACCT 116A | Financial Accounting | 4 |
| CISC 181 | Principles of Information Systems | 4 |
| ECON 120 | Principles of Macroeconomics | 3 |
| ECON 121 | Principles of Microeconomics | 3 |
| MARK 100 | Principles of Marketing | 3 |
| **Occupational Electives | | 12 |
| Total Units = 47 | | |

Note: Only one Business (BUSE) course from the above list may be used to satisfy SDCCD general education requirements.

For graduation requirements, see **Requirements for the Associate Degree** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Recommended Electives: Accounting 116B; Business 155, 270; CBTE 180; Marketing 105.

**These courses should be planned with the assistance of a counselor and must be approved by a department member. Approval forms may be obtained in the counseling office.

Business Management: Mortgage Brokerage and Banking

Description

The Mortgage Brokerage and Banking program prepares students with the knowledge and skills necessary for initial employment in the mortgage brokerage and banking industry and facilitates advanced employment opportunities for persons already employed in the industry.

Program Learning Outcomes

The Business Program offers a certificate of Achievement and an Associate of Science Degree in Business Management. This program prepares students for initial employment in the business field or the possibility of starting a small business of his/her own.

Careers

Individual courses in addition to the entire Mortgage Brokerage and Banking program prepares students for careers in loan processing, loan underwriting, loan closing.

Certificate of Performance: Loan Processor*

The 9-unit Loan Processor certificate prepares the student with the knowledge and skills necessary for employment as a loan processor in the mortgage brokerage and banking industry.

| Courses: | | Units |
|------------------------|--------------------------------|--------------|
| BANK 102 | Mortgage Brokerage and Banking | 4 |
| BANK 104 | Principles of Loan Processing | 5 |
| Total Units = 9 | | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Performance: Loan Underwriter*

The 9-unit Loan Underwriter certificate prepares the student with the knowledge and skills necessary for employment as a loan underwriter in the mortgage brokerage and banking industry.

| Courses: | | Units |
|------------------------|--------------------------------|--------------|
| BANK 102 | Mortgage Brokerage and Banking | 4 |
| BANK 106 | Loan Underwriter | 5 |
| Total Units = 9 | | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Performance: Loan Closer*

The 8-unit Loan Closer certificate prepares the student with the knowledge and skills necessary for employment as a loan closer in the mortgage brokerage and banking industry.

| Courses: | | Units |
|------------------------|--------------------------------|--------------|
| BANK 102 | Mortgage Brokerage and Banking | 4 |
| BANK 108 | Principles of Loan Closing | 4 |
| Total Units = 8 | | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Achievement: Business Management

Mortgage Brokerage and Banking

| Courses Required for the Major: | | Units |
|---------------------------------|--------------------------------|-------|
| BANK 102 | Mortgage Brokerage and Banking | 4 |
| BANK 104 | Principles of Loan Processing | 5 |
| BANK 106 | Loan Underwriting | 5 |
| BANK 108 | Principles of Loan Closing | 4 |
| Total Units = 18 | | |

Associate in Science Degree: Business Management

Mortgage Brokerage and Banking

| Courses Required for the Major: | | Units |
|---------------------------------|--------------------------------|-------|
| BANK 102 | Mortgage Brokerage and Banking | 4 |
| BANK 104 | Principles of Loan Processing | 5 |
| BANK 106 | Loan Underwriting | 5 |
| BANK 108 | Principles of Loan Closing | 4 |
| REAL 101 | Real Estate Principles | 3 |
| REAL 115 | Real Estate Finance I | 3 |
| BUSE 119 | Business Communications | 3 |
| Total Units = 27 | | |

For graduation requirements, see **Requirements for the Associate Degree** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Recommended Electives: Business 140; Economics 120; Real Estate 105*; Escrow 101*.

***Note:** Courses designated with * above are not offered currently at Miramar College, but are offered at City and/or Mesa Colleges.

Chemistry

| Award Type | Units |
|--|-------|
| Associate in Science Degree: Chemistry Studies | 18* |
| * and electives as needed to meet minimum of 60 units required for the degree. | |

Description

The Chemistry Program fosters an understanding of the fundamental principles of chemistry in a variety of applications - medicine, health-care products, energy, food production, body metabolism,

structural materials, microelectronics, and the environment. Students learn how chemical knowledge is derived, theorized, and applied in solving problems in everyday life. Students perform experiments in a modern chemistry laboratory under the guidance of experienced faculty.

The curriculum is designed to meet the needs of students who wish to pursue a major in fields such as: (1) chemistry, biology, marine science, geology, physics, medicine, engineering, or technology; (2) paramedical or allied health science, including nursing, physical therapy, or nutrition; or (3) liberal arts. Courses will also meet general education requirements for both the two and four-year institutions.

Program Level Student Learning Outcomes

Students who complete the Chemistry Program will be able to:

- Name and draw structures for inorganic and organic compounds;
- Classify inorganic and organic reactions;
- Determine the products of inorganic and organic reactions;
- Match various inorganic and organic reactions with the appropriate chemical processes.
- Successfully perform experiments involving chemical equipment, measurement, and data collection.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone/email |
|-----------------------|--------|-------------------------------------|
| Rebecca Bowers-Gentry | M-211Q | 619-388-7241 rbowersg@sdccd.edu |
| Daphne Figueroa | M-211J | 619-388-7494 dfigueroa@sdccd.edu |
| Fred Garces | S-5210 | 619-388-7493 fgarces@sdccd.edu |
| Namphol Sinkaset | M-211P | 619-388-7644 nsinkase@sdccd.edu |
| Linda Woods | M-211K | 619-388-7434 lwoods@sdccd.edu |

Career Options

Most careers in this discipline require education beyond the associate degree level. A baccalaureate degree in chemistry prepares students for careers such as: teaching, research, and advancement into professional graduate programs.

Transfer Information

Common university majors related to the field of Chemistry include: Chemistry, Biochemistry, Chemical Engineering, Chemical Physics, Environmental Chemistry.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Science degree with an area of emphasis in Chemistry Studies (see below). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Associate in Science Degree: Chemistry Studies

The Associate in Science degree with an area of emphasis in Chemistry Studies is intended for students who plan to complete a bachelor's degree at a transfer institution in a chemistry-related major. Common university majors in this field include: Biochemistry, Chemical Engineering, Chemical Physics, Chemistry, and Environmental Chemistry.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

| Courses Required for the Major: | Units |
|---|--------------|
| CHEM 200 General Chemistry I - Lecture | 3 |
| CHEM 200L General Chemistry I - Laboratory | 2 |
| CHEM 201 General Chemistry II - Lecture | 3 |
| CHEM 201L General Chemistry II - Laboratory | 2 |

Select at least eight units from the following:

| | | |
|-----------|-------------------------------------|---|
| ASTR 101 | Descriptive Astronomy | |
| CISC 192 | C/C++ Programming | |
| GEOL 104 | Earth Science | |
| MATH 150 | Calculus with Analytic Geometry I | |
| MATH 151 | Calculus with Analytic Geometry II | |
| MATH 252 | Calculus with Analytic Geometry III | |
| PHYS 195 | Mechanics | |
| PHYS 196 | Electricity and Magnetism | |
| PHYS 197 | Waves, Optics, and Modern Physics | |
| CHEM 231 | Organic Chemistry I - Lecture | |
| CHEM 231L | Organic Chemistry I - Laboratory | |
| CHEM 233 | Organic Chemistry II - Lecture | |
| CHEM 233L | Organic Chemistry II - Laboratory | |
| CHEM 251 | Analytical Chemistry | 8 |

Total Units = 18

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the**

transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.

Child Development

| Award Type | Units |
|--|--------|
| Certificate of Performance: | |
| Assistant Teacher | 10-13 |
| Family & Child Relations | 13 |
| Family Child Care | 9 |
| Infant/Toddler Care | 9 |
| Residential Care Workers | 12 |
| Certificate of Achievement: | |
| Associate Teacher | 18-19 |
| Teacher | 26-29 |
| Master Teacher | 35-39 |
| Associate in Arts Degree: | |
| Human Development Studies | 18* |
| Associate in Science Degree: | |
| Child Development | 26-29* |
| Site Supervisor | 35-38* |
| * and electives as needed to meet minimum of 60 units required for the degree. | |

Description

Child Development offers programs for career and transfer students. Certificates of Performance, Certificates of Achievement and Associate Degree programs are available to students interested in a range of child development opportunities and in meeting the requirements for the State of California Child Development Permits and the California State Department of Social Services, Title 22, Community Care Licensing.

Program Learning Outcomes

The Child Development program offers course work, training and supervised practicum experiences to meet state licensing requirements for working in centers, schools, child care homes and service related agencies. The skills and knowledge gained

in beginning courses provide the framework and foundation for more specialized courses.

Student Learning Outcomes

Students who complete the Child Development Program will be able to:

- Apply human development and growth theories and principles to early childhood settings.
- Communicate effectively with children, families, staff and the community.
- Plan and implement developmentally appropriate curriculum for children.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone |
|--------------|----------------------------|--------------|
| Dawn Burgess | Child Dev. Center F-207 | 619-388-7678 |
| Peter Elias | Child Dev. Center F-201 | 619-388-7677 |

Career Options

The San Diego Community College District offers certificates, degrees and transfer options in the field of Child Development/Early Childhood Education. The Family Child Care Certificate offered at City, Mesa, and Miramar and the Home Day Care Certificate offered at Mesa provides skills and knowledge for child care in family settings. The Family and Child Relations Certificate offered at Miramar prepares students to work with families and their children in educational and service related agencies. The Infant/Toddler Care Certificate of Performance offers skills for working with children aged birth to three years. The School Age Child Care Certificate of Performance offered at City and Mesa provides training for working with school age children. The Assistant Teacher Certificate of Performance prepares an individual to work in public and private child care settings. The Certificate of Achievement options, Associate Teacher, Teacher, and Master Teacher, prepare individuals for higher level instructional positions. The Assistant Teacher, Associate Teacher, Teacher, and Master Teacher certificates meet the requirements for the State of California Child Development Permits. The Child Development Associate in Science Degrees prepare for teacher, master teacher, director, and site supervisory positions.

Transfer Information

Common university majors related to the field of Child Development include: Child Development, Family and Consumer Studies and Sciences, Gerontology, Human Development, Liberal Studies.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Arts degree with an area of emphasis in Human Development Studies (see page 153). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Certificate of Performance: Assistant Teacher*

This certificate prepares students to assist in the instruction of children under the supervision of an Associate Teacher or higher. Child Development courses must be completed with a grade of "C" or better.

| Courses: | Units |
|--|--------------|
| CHIL 101 Human Growth and Development | 3 |
| CHIL 180 Nutrition, Health & Safety for Children | 3 |

Select one course from:

| | |
|--|---|
| CHIL 111 Curriculum: Music/Motor Skills | |
| CHIL 121 Creative Art | |
| CHIL 131 Curriculum: Language/Science | |
| CHIL 141 The Child, Family and Community | 3 |

Select one course from:

| | |
|---|-----|
| CHIL 160 Observing and Understanding Children | |
| CHIL 161 Observations and Issues in Child Development | |
| CHIL 270 Work Experience | |
| CHIL 291, or 291A, or 291B, or 291C, or 291D Child Development Center Practicum | 1-4 |

Total Units = 10-13

Certificate of Performance: Family and Child Relations*

This certificate prepares students to work with families and their children in educational settings and service related agencies.

| Courses: | Units |
|---|--------------|
| CHIL 101 Human Growth and Development | 3 |
| CHIL 141 The Child, Family and Community | 3 |
| CHIL 160 Observing and Understanding Children | 2 |
| CHIL 161 Observations and Issues in Child Development | 2 |

Select one course from:

| | |
|---|---|
| CHIL 162 Observing and Guiding Child Behavior | |
| CHIL 165 Children with Special Needs | |
| CHIL 188 Violence in the Lives of Children and Families | 3 |

Total Units = 13

Certificate of Performance: Family Child Care*

This certificate prepares students with basic training to care for children in a licensed home/family setting. Child Development courses must be completed with a grade of "C" or better.

| Courses: | Units |
|--|--------------|
| CHIL 101 Human Growth and Development | 3 |
| CHIL 180 Nutrition, Health & Safety for Children | 3 |

Select one course from:

| | |
|--|---|
| CHIL 111 Curriculum: Music/Motor Skills | |
| CHIL 121 Creative Art | |
| CHIL 131 Curriculum: Language/Science | |
| CHIL 175 Infant-Toddler Growth and Development | 3 |

Total Units = 9

Certificate of Performance: Infant/Toddler Care*

This certificate prepares students with basic training to work with children aged birth to three years in licensed home/family care and center programs. Child Development courses must be completed with a grade of "C" or better.

| Courses: | Units |
|---------------------------------------|--------------|
| CHIL 101 Human Growth and Development | 3 |

| | | |
|------------------------|---|---|
| CHIL 175 | Infant-Toddler Growth and Development | 3 |
| CHIL 176 | Principles of Infant/Toddler Caregiving | 3 |
| Total Units = 9 | | |

Certificate of Performance: Residential Care Workers*

This certificate is designed to meet the State requirements for positions in residential care programs.

| Courses: | | Units |
|-------------------------|--|--------------|
| CHIL 101 | Human Growth and Development | 3 |
| CHIL 141 | The Child, Family and Community | 3 |
| CHIL 175 | Infant-Toddler Growth and Development | 3 |
| CHIL 188 | Violence in the Lives of Children and Families | 3 |
| Total Units = 12 | | |

Certificates of Performance

* A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

For the Certificates of Performance listed above, one or more of the following courses is recommended to gain experience and credits required for higher level permits:

CHIL 160, Observing and Understanding Children

CHIL 161, Observations and Issues in Child Development

CHIL 270, Work Experience

CHIL 291, or 291A, or 291B, or 291C, or 291D, Child Development Center Practicum

Certificate of Achievement: Child Development

Associate Teacher

This certificate prepares students to provide instruction to children and supervise Assistant Teachers. Child Development courses must be completed with a grade of "C" or better.

| Courses Required for the Major: | | Units |
|--|---------------------------------|--------------|
| CHIL 101 | Human Growth and Development | 3 |
| CHIL 141 | The Child, Family and Community | 3 |

| | | |
|----------|---|---|
| CHIL 180 | Nutrition, Health & Safety for Children | 3 |
|----------|---|---|

Select two courses from:

| | | |
|----------|--------------------------------|---|
| CHIL 111 | Curriculum: Music/Motor Skills | 3 |
| CHIL 121 | Creative Art | 3 |
| CHIL 131 | Curriculum: Language/Science | 3 |

Select three or more units from:

| | | |
|--|--|-----|
| CHIL 160 | Observing and Understanding Children | |
| CHIL 161 | Observations and Issues in Child Development | |
| CHIL 270 | Work Experience | |
| CHIL 291, or 291A, or 291B, or 291C, or 291D | Child Development Center Practicum | 3-4 |
| Total Units = 18-19 | | |

Certificate of Achievement: Child Development

Teacher

This certificate prepares students to provide instruction to children and supervise Assistant and Associate Teachers. Child Development courses must be completed with a grade of "C" or better.

Courses Required for the Major: Units

| | | |
|----------|---|---|
| CHIL 101 | Human Growth and Development | 3 |
| CHIL 111 | Curriculum: Music/Motor Skills | 3 |
| CHIL 121 | Creative Art | 3 |
| CHIL 131 | Curriculum: Language/Science | 3 |
| CHIL 141 | The Child, Family and Community | 3 |
| CHIL 180 | Nutrition, Health & Safety for Children | 3 |
| CHIL 151 | Program Planning | 3 |

and concurrent enrollment in:

| | | | |
|----------|------------------------|----|-----|
| CHIL 270 | Work Experience | or | |
| CHIL 275 | Supervised Field Study | | 2-4 |

Select one of the following three options:

| | | | |
|----------|---|------------|-----|
| CHIL 160 | Observing & Understanding Children | and | |
| CHIL 161 | Observation & Issues in Child Development | or | |
| CHIL 165 | Children with Special Needs | or | |
| CHIL 175 | Infant-Toddler Growth and Development | | 3-4 |

Total Units = 26-29

Certificate of Achievement: Child Development

Master Teacher

This certificate prepares students to provide instruction to children and supervised Assistant/ Associate Teachers and Teachers. It further prepares the Master Teacher to coordinate curriculum and staff development. Child Development courses must be completed with a grade of "C" or better.

| Courses Required for the Major: | | Units |
|--|---|--------------|
| CHIL 101 | Human Growth and Development | 3 |
| CHIL 111 | Curriculum: Music/Motor Skills | 3 |
| CHIL 121 | Creative Art | 3 |
| CHIL 131 | Curriculum: Language/Science | 3 |
| CHIL 141 | The Child, Family and Community | 3 |
| CHIL 151 | Program Planning | 3 |
| CHIL 180 | Nutrition, Health & Safety for Children | 3 |

AND

Select one of the following three options that is NOT part of your Specialization (see Specializations listed below) to complete the minimum 24 unit core requirement:

| | | |
|----------|---|-----|
| CHIL 160 | Observing & Understanding Children and | |
| CHIL 161 | Observation & Issues in Child Development or | |
| CHIL 165 | Children with Special Needs or | |
| CHIL 175 | Infant-Toddler Growth and Development | |
| | | 3-4 |

AND

| | | |
|----------|---|---|
| CHIL 215 | Adult Supervision & Mentoring in Early Childhood Settings | 3 |
|----------|---|---|

AND

| | | |
|----------|---|-----|
| CHIL 270 | Work Experience or | |
| CHIL 275 | Supervised Field Study (with concurrent enrollment in CHIL 151, Program Planning) | 2-4 |

AND

Select one of the following Specializations for a total of 6 - 7 units:

Guiding Young Children

| | | |
|----------|--|--|
| CHIL 160 | Observing & Understanding Children | |
| CHIL 161 | Observation & Issues in Child Development | |
| CHIL 162 | Observing and Guiding Child Behavior or | |

Family Life

| | | |
|----------|--|--|
| CHIL 160 | Observing & Understanding Children | |
| CHIL 161 | Observation & Issues in Child Development | |
| CHIL 188 | Violence in the Lives of Children and Families or | |

Special Needs

| | | |
|----------|------------------------------------|--|
| CHIL 165 | Children with Special Needs | |
| CHIL 166 | Special Needs Curriculum or | |

Infant/Toddler

| | | |
|----------|---|--|
| CHIL 175 | Infant-Toddler Growth and Development | |
| CHIL 176 | Principles of Infant/Toddler Caregiving or | |

School Age

| | | |
|----------|--|--|
| CHIL 152 | School-Age Program Planning and | |
|----------|--|--|

Select one course from:

| | | |
|-----------|---|--|
| CHIL 185 | Computer Usage with Young Children or | |
| MATH 210A | Concepts of Elementary School Mathematics or | |
| MUSI 110 | Music for the Elementary School Teachers or | |
| PHYE 240 | Physical Education in the Elementary Schools | |

6-7

Total Units = 35-39

Associate in Science Degree: Child Development

This degree prepares students to provide instruction to children and supervise Assistant and Associate Teachers. Child Development courses must be completed with a grade of "C" or better. Additional general education and graduation requirements are listed in the Academic Requirements section of this catalog. The Associate Degree requires a minimum of 60 units.

Courses Required for the Major:

| Courses Required for the Major: | | Units |
|--|---|--------------|
| CHIL 101 | Human Growth and Development | 3 |
| CHIL 111 | Curriculum: Music/Motor Skills | 3 |
| CHIL 121 | Creative Art | 3 |
| CHIL 131 | Curriculum: Language/Science | 3 |
| CHIL 141 | The Child, Family and Community | 3 |
| CHIL 180 | Nutrition, Health & Safety for Children | 3 |
| CHIL 151 | Program Planning | 3 |

and concurrent enrollment in:

| | | | |
|----------|------------------------|-----------|-----|
| CHIL 270 | Work Experience | or | |
| CHIL 275 | Supervised Field Study | | 2-4 |

Select one of the following three options:

| | | | |
|----------|---|------------|-----|
| CHIL 160 | Observing & Understanding Children | and | |
| CHIL 161 | Observation & Issues in Child Development | or | |
| CHIL 165 | Children with Special Needs | or | |
| CHIL 175 | Infant-Toddler Growth and Development | | 3-4 |

Total Units = 26-29

**Associate in Science Degree:
Child Development**

Site Supervisor

This degree prepares students to provide instruction to children and supervise Assistant and Associate Teachers. Child Development courses must be completed with a grade of "C" or better. Additional general education and graduation requirements are listed in the Academic Requirements section of this catalog. The Associate Degree requires a minimum of 60 units.

| Courses Required for the Major: | | Units |
|--|---------------------------------|--------------|
| CHIL 101 | Human Growth and Development | 3 |
| CHIL 111 | Curriculum: Music/Motor Skills | 3 |
| CHIL 121 | Creative Art | 3 |
| CHIL 131 | Curriculum: Language/Science | 3 |
| CHIL 141 | The Child, Family and Community | 3 |
| CHIL 151 | Program Planning | 3 |

and concurrent enrollment in:

| | | | |
|----------|---|-----------|-----|
| CHIL 270 | Work Experience | or | |
| CHIL 275 | Supervised Field Study | | 2-4 |
| CHIL 180 | Nutrition, Health & Safety for Children | | 3 |
| CHIL 202 | Administration of Early Childhood Programs | | 3 |
| CHIL 210 | Supervision of Early Childhood Programs | | 3 |
| CHIL 215 | Adult Supervision and Mentoring in Early Childhood Settings | | 3 |

Select one of the following three options:

| | | | |
|----------|---|------------|--|
| CHIL 160 | Observing & Understanding Children | and | |
| CHIL 161 | Observation & Issues in Child Development | or | |
| CHIL 165 | Children with Special Needs | or | |

| | | | |
|----------|---------------------------------------|--|-----|
| CHIL 175 | Infant-Toddler Growth and Development | | 3-4 |
|----------|---------------------------------------|--|-----|

Total Units = 35-38

Recommended Electives: (select from courses not already taken): Child Development 100, 152, 160, 161, 162, 165, 166, 175, 176, 185, 188, 202, 210, 215, 270, 275, 290, 291, 291A, 291B, 291C, 291D.

Courses offered by San Diego Community College District that meet experience requirements for Certificates and Degrees:

- CHIL 160, Observing & Understanding Children, 2 units (16 days)
- CHIL 161, Observation & Issues in Child Development, 2 units (16 days)
- CHIL 270, Work Experience, 1 unit (16 days)
- CHIL 270, Work Experience, 2 units (32 days)
- CHIL 270, Work Experience, 3 units (48 days)
- CHIL 270, Work Experience, 4 units (64 days)
- CHIL 275, Supervised Field Study, 2 units (32 days)
- CHIL 291, Child Development Practicum, 1 unit (16 days)
- CHIL 291, Child Development Practicum, 2 units (32 days)
- CHIL 291A, Child Development Practicum, 1 unit (16 days)
- CHIL 291B, Child Development Practicum, 1 unit (16 days)
- CHIL 291C, Child Development Practicum, 1 unit (16 days)
- CHIL 291D, Child Development Practicum, 1 unit (16 days)

**Associate in Arts Degree:
Human Development Studies**

The Associate in Arts degree with an area of emphasis in Human Development Studies is intended for students who plan to complete a bachelor's degree at a transfer institution in a human development-related major. Common university majors in this field include: Child Development, Family and Consumer Studies, Gerontology, and Human Development.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

| Courses Required for the Major: | | Units |
|--|------------------------------|--------------|
| CHIL 101 | Human Growth and Development | 3 |
| PSYC 101 | General Psychology | 3 |

Select at least twelve units from the following:

| | |
|-----------|---|
| ANTH 103 | Introduction to Cultural Anthropology |
| BIOL 107 | General Biology-Lecture and Laboratory |
| BIOL 210A | Introduction to the Biological Sciences I |
| BIOL 210B | Introduction to the Biological Sciences II |
| BIOL 230 | Human Anatomy |
| BIOL 235 | Human Physiology |
| BLAS 140A | History of the U.S., Black Perspectives |
| BLAS 140B | History of the U.S., Black Perspectives |
| CHIL 103 | Lifespan Growth and Development |
| CHIL 111 | Curriculum: Music/Motor Skills |
| CHIL 121 | Creative Art |
| CHIL 131 | Curriculum: Language/Science |
| CHIL 141 | The Child, Family and Community |
| CHIL 151 | Program Planning |
| CHIL 160 | Observing and Understanding Children |
| CHIL 162 | Observing and Guiding Child Behavior |
| CHIL 175 | Infant-Toddler Growth and Development |
| CHIL 176 | Principles of Infant/Toddler Caregiving |
| CHIL 180 | Nutrition, Health and Safety for Children |
| CISC 190 | Java Programming |
| CISC 192 | C/C++ Programming |
| MATH 119 | Elementary Statistics |
| MATH 121 | Basic Techniques of Applied Calculus I |
| MATH 150 | Calculus with Analytic Geometry I |
| MATH 210A | Concepts of Elementary School Mathematics I |
| NUTR 150 | Nutrition |
| PHIL 101 | Symbolic Logic |
| PSYC 135 | Marriage and Family Relations |
| PSYC 258 | Behavioral Science Statistics |
| PSYC 260 | Introduction to Physiological Psychology |
| SOCO 101 | Principles of Sociology |

12

Total Units = 18

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.

- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Communication Studies

| Award Type | Units |
|--------------------------------------|--------------|
| Associate in Arts Degree: | |
| Communication Studies for Transfer** | 18-22* |

* and electives as needed to meet minimum of 60 units required for the degree.

**Associate in Arts/Transfer. For more information, see page

Description

Communication is the study of human interaction in the verbal and non-verbal arena. It describes, explains, and depicts the various elements that influence communication such as age, gender, culture, settings, and circumstance. Communication

provides a foundation for success in an individual's personal, social and professional roles.

Program Learning Outcomes

The curriculum focuses on preparing students with basic concepts in Speech Communication, which provides the foundation pursuing a baccalaureate degree. Courses will also satisfy requirements for general education at both the two and four-year institutions. Students planning to major in a communications field should prepare themselves with courses that complement that major.

Student Learning Outcomes

Students who complete the Communication Studies Program will be able to:

- Demonstrate the ability to effectively communicate with diverse audiences in multiple contexts to meet the goals of the intended communication.
- Organize thoughts and ideas effectively and express them clearly and correctly in writing and/or presentations.
- Identify, evaluate and utilize evidence to support claims used in presentations and arguments.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone |
|----------------|--------|--------------|
| Lisa Brewster | H-211 | 619-388-7701 |
| Leslie Klipper | H-213 | 619-388-7694 |

Career Options

Most careers require degrees beyond the associate level. Graduates with advanced degrees have secured positions such as: customer relations officers, public relations managers, human resources trainers, employment specialists, marketing representatives, broadcasters, and sales representatives.

Transfer Information

Common university majors related to the field of Communication Studies include: Communication, Communicative Disorders, Graphic Communications, Journalism, Marketing, Public Relations.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a

counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Arts degree with an area of emphasis in Communication Studies (see below). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Associate in Arts Degree: Communication Studies for Transfer

This degree is accepted by some but not all CSU campuses.

The Associate in Arts in Communication Studies for Transfer is intended for students who plan to complete a bachelor's degree in Communication Studies or a related major in the California State University (CSU) system. Students who complete this degree and transfer to a participating CSU campus will be required to complete no more than 60 units after transfer to earn a bachelor's degree. It may not be appropriate preparation for students transferring to a CSU campus that does not accept the degree. Students who plan to complete this degree should consult a counselor for additional information about participating CSU campuses as well as university admission, degree, and transfer requirements.

NOTE: Students intending to transfer to SDSU should consult a counselor and visit www.assist.org for guidance on appropriate transfer coursework.

Required Courses:

| | | |
|----------|------------------------------|---|
| COMS 103 | Oral Communication* | 3 |
| COMS 135 | Interpersonal Communication* | 3 |
| COMS 160 | Argumentation* | 3 |

Select two of the following courses:

(It is recommended to select courses that meet lower division major preparation requirements for your transfer university)

| | | |
|-----------|---|--|
| COMS 180 | Intercultural Communication* | |
| JOUR 202 | Introduction to Mass Communication* | |
| JOUR 210A | Newspaper Production (3 unit option only) | |
| ENGL 101 | Reading and Composition* | |
| ENGL 205 | Critical Thinking* | |

| | |
|----------|--|
| ENGL 210 | American Literature I* |
| ENGL 211 | American Literature II* |
| ENGL 215 | English Literature I: 800-1799* |
| ENGL 216 | English Literature II: 1800-Present* |
| HIST 105 | Introduction to Western Civilization I* |
| HIST 106 | Introduction to Western Civilization II* |
| MATH 119 | Elementary Statistics* or |
| PSYC 258 | Behavioral Science Statistics* |
| PSYC 101 | General Psychology* |
| SPAN 201 | Third Course in Spanish* |

6-8

If needed to total 18 units, select one of the following courses (not selected above):

(It is recommended to select courses that meet lower division major preparation requirements for your transfer university)

| | |
|-----------|---|
| COMS 180 | Intercultural Communication* |
| JOUR 202 | Introduction to Mass Communication* |
| JOUR 210A | Newspaper Production (3 unit option only) |
| ANTH 103 | Introduction to Cultural Anthropology* |
| ENGL 101 | Reading and Composition* |
| ENGL 205 | Critical Thinking* |
| ENGL 210 | American Literature I* |
| ENGL 211 | American Literature II* |
| ENGL 215 | English Literature I: 800-1799* |
| ENGL 216 | English Literature II: 1800-Present* |
| HIST 105 | Introduction to Western Civilization I* |
| HIST 106 | Introduction to Western Civilization II* |
| MATH 119 | Elementary Statistics* or |
| PSYC 258 | Behavioral Science Statistics* |
| PSYC 101 | General Psychology* |
| SPAN 201 | Third Course in Spanish* |
| SOCO 101 | Principles of Sociology* |

3-5

Total Units = 18-22

* Course also fulfills general education requirements for the CSU GE or IGETC pattern.

General Education: In addition to the courses listed above, students must complete one of the following general education options:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 CSU-transferable units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Computer Business Technology

| Award Type | Units |
|--|-------|
| Certificate of Performance: | |
| Administrative Assistant | 10 |
| Typist/Word processor | 14 |
| Website Designer | 13 |
| Certificate of Achievement: | |
| Administrative Assistant | 35 |
| Microcomputer Applications | 35 |
| Associate in Science Degree: | |
| Administrative Assistant | 35* |
| Microcomputer Applications | 35* |
| Occupational/Technical Studies (see page 182) | 18* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

The Computer Business Technology program provides theory and hands-on training in major office systems, webpage design, and technology used to enhance productivity and communications. Students are prepared, through extensive

coursework, with the necessary skills and knowledge for initial employment in the field of business.

Program Learning Outcomes

Emphasis is on modern methods and updated software and equipment.

Student Learning Outcomes

Students who complete the Computer Business Technology Program will be able to:

- Demonstrate proficiency in using software applications to enter data, format and organize data, complete calculations, graph data, create templates, develop professional reports, forms, and queries, and produce professional looking presentations
- Use graphical design principles such as desktop publishing and web site development to create and enhance electronic forms of communications
- Perform various online business transactions including the use of different search techniques
- Identify effective business communications skills

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone |
|--------------|---------|--------------|
| Wahid Hamidy | M-107-M | 619-388-7702 |

Transfer Information

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Science degree with an area of emphasis in Occupational/Technical Studies (see page 182). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Certificate of Performance: Administrative Assistant*

This certificate prepares students for entry-level positions as administrative assistants.

| Courses: | Units |
|--|-------|
| CBTE 101 Keyboarding for Computers | 1 |
| CBTE 114 Introduction to Microsoft Windows | 1 |
| CBTE 120 Beginning Microsoft Word | 2 |
| CBTE 180 Microsoft Office | 3 |
| CBTE 210 Computers in Business | 3 |
| Total Units = 10 | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Performance: Typist/Word Processor*

This certificate prepares students for entry-level positions as typists and word processors in a variety of occupations.

| Courses: | Units |
|--|-------|
| CBTE 101 Keyboarding for Computers | 1 |
| CBTE 114 Introduction to Microsoft Windows | 1 |
| CBTE 120 Beginning Microsoft Word | 2 |
| CBTE 122 Intermediate Microsoft Word | 3 |
| CBTE 127 Introduction to PowerPoint | 2 |
| CBTE 140 Microsoft Excel | 2 |
| CBTE 143 Intermediate Microsoft Excel | 3 |
| Total Units = 14 | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Performance: Website Designer*

This certificate prepares students for entry-level positions as web page designers.

| Courses: | Units |
|--|-------|
| CBTE 127 Introduction to PowerPoint | 2 |
| CBTE 152 Beginning Microsoft Access | 2 |
| CBTE 161 Learning the Internet | 1 |
| CBTE 162 Web Page Creation | 2 |
| CBTE 165 Webpage Creation with Dreamweaver | 3 |
| CBTE 167 Webpage Creation Using Microsoft Expression Web | 3 |
| Total Units = 13 | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Administrative Assistant

Prepares the student for employment in business or civil service as a general office clerk, clerk-typist, file clerk, receptionist, cashier, word processor, machine transcriptionist, or other positions not requiring stenography.

Certificate of Achievement: Computer Business Technology

Administrative Assistant

| Courses Required for the Major: | | Units |
|---------------------------------|-----------------------------------|-------|
| CBTE 101 | Keyboarding for Computers | 1 |
| CBTE 114 | Introduction to Microsoft Windows | 1 |
| CBTE 120 | Beginning Microsoft Word | 2 |
| CBTE 122 | Intermediate Microsoft Word | 3 |
| CBTE 127 | Introduction to PowerPoint | 2 |
| CBTE 140 | Microsoft Excel | 2 |
| CBTE 143 | Intermediate Microsoft Excel | 3 |
| CBTE 152 | Beginning Microsoft Access | 2 |
| CBTE 153 | Database Development with Access | 3 |
| CBTE 170 | Desktop Publishing | 2 |
| CBTE 200 | Office Telecommunications | 2 |
| CBTE 205 | Records Management | 3 |
| CBTE 210 | Computers in Business or | |
| CBTE 211 | Office Administration | 3 |
| BUSE 101 | Business Mathematics | 3 |
| BUSE 119 | Business Communications | 3 |
| Total Units = 35 | | |

Associate in Science Degree: Computer Business Technology

Administrative Assistant

| Courses Required for the Major: | | Units |
|---------------------------------|-----------------------------------|-------|
| CBTE 101 | Keyboarding for Computers | 1 |
| CBTE 114 | Introduction to Microsoft Windows | 1 |
| CBTE 120 | Beginning Microsoft Word | 2 |
| CBTE 122 | Intermediate Microsoft Word | 3 |
| CBTE 127 | Introduction to PowerPoint | 2 |
| CBTE 140 | Microsoft Excel | 2 |
| CBTE 143 | Intermediate Microsoft Excel | 3 |
| CBTE 152 | Beginning Microsoft Access | 2 |
| CBTE 153 | Database Development with Access | 3 |
| CBTE 170 | Desktop Publishing | 2 |

| | | |
|-------------------------|---------------------------------|---|
| CBTE 200 | Office Telecommunications | 2 |
| CBTE 205 | Records Management | 3 |
| CBTE 210 | Computers in Business or | |
| CBTE 211 | Office Administration | 3 |
| BUSE 101 | Business Mathematics | 3 |
| BUSE 119 | Business Communications | 3 |
| Total Units = 35 | | |

For graduation requirements see **Associate Degree Requirements** on page 70.

Electives as needed to meet minimum of 60 units required for the degree:

Recommended Electives: Computer Business Technology 126, 161, 270; Business 150.

Microcomputer Applications

Provides training in major office systems and Technology used to enhance productivity and communications.

Certificate of Achievement: Computer Business Technology

Microcomputer Applications

Provides training in major office systems and technology used to enhance productivity and communications.

| Courses Required for the Major: | | Units |
|---------------------------------|---|-------|
| CBTE 101 | Keyboarding for Computers | 1 |
| CBTE 114 | Introduction to Microsoft Windows | 1 |
| CBTE 120 | Beginning Microsoft Word | 2 |
| CBTE 122 | Intermediate Microsoft Word | 3 |
| CBTE 127 | Introduction to PowerPoint | 2 |
| CBTE 128 | Comprehensive Presentations with Powerpoint | 3 |
| CBTE 140 | Microsoft Excel | 2 |
| CBTE 152 | Beginning Microsoft Access | 2 |
| CBTE 153 | Database Development with Access | 3 |
| CBTE 167 | Webpage Creation Using Microsoft Expression Web | 3 |
| CBTE 170 | Desktop Publishing | 2 |
| CBTE 200 | Office Telecommunications | 2 |
| CBTE 205 | Records Management | 3 |
| BUSE 101 | Business Mathematics | 3 |
| BUSE 119 | Business Communications | 3 |
| Total Units = 35 | | |

Associate in Science Degree: Computer Business Technology

Microcomputer Applications

Provides training in major office systems and technology used to enhance productivity and communications.

| Courses Required for the Major: | | Units |
|--|---|--------------|
| CBTE 101 | Keyboarding for Computers | 1 |
| CBTE 114 | Introduction to Microsoft Windows | 1 |
| CBTE 120 | Beginning Microsoft Word | 2 |
| CBTE 122 | Intermediate Microsoft Word | 3 |
| CBTE 127 | Introduction to PowerPoint | 2 |
| CBTE 128 | Comprehensive Presentations with Powerpoint | 3 |
| CBTE 140 | Microsoft Excel | 2 |
| CBTE 152 | Beginning Microsoft Access | 2 |
| CBTE 153 | Database Development with Access | 3 |
| CBTE 167 | Webpage Creation Using Microsoft Expression Web | 3 |
| CBTE 170 | Desktop Publishing | 2 |
| CBTE 200 | Office Telecommunications | 2 |
| CBTE 205 | Records Management | 3 |
| BUSE 101 | Business Mathematics | 3 |
| BUSE 119 | Business Communications | 3 |
| Total Units = 35 | | |

For graduation requirements see **Associate Degree Requirements** on page 70.

Electives as needed to meet minimum of 60 units required for the degree:

Recommended Electives: Business 150; Computer Business Technology 126, 161, 162, 270.

Computer and Information Sciences

| Award Type | Units |
|---|--------------|
| Certificate of Performance: Computer Programming | 15 |
| Certificate of Achievement: Computer and Information Science | 31 |
| Associate in Science Degree: Computer and Information Science | 31* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

The focus of the Computer and Information Sciences program is on the function and use of the computer. The program includes general study of computer languages as well as utilization and application of computer software.

Program Learning Outcomes

The Computer and Information Sciences program offers: a Certificate of Achievement and an Associate Degree in Computer and Information Sciences; and a Certificate of Achievement an Associate Degree in Computer and Information Sciences with an emphasis in Microcomputer Professional.

Student Learning Outcomes

Students who complete the Computer and Information Sciences Program will be able to:

- Design a specified program using appropriate manual and electronic design tools
- Implement program designs using one or more programming languages
- Use standard business applications to create documents, spreadsheets, data bases, presentations, and web pages

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone |
|----------------|---------------|------------------|
| Ed Brunjes | M-107-J | 619-388-7700 |
| John Couture | M-107L | 619-388-7698 |

| | | |
|----------------|---------------|------------------|
| Faculty | Office | Telephone |
| Alan Viersen | I-102C2 | 619-388-7693 |

Career Options

Upon completion of the Computer and Information Sciences curriculum the student should be qualified for entry-level employment in the area of microcomputer support, or with additional courses should be qualified for employment in entry-level programmer position.

Academic Programs

The certificate of achievement in Computer Information Sciences requires completion of the courses listed below and is meant to prepare students who are planning and preparing for entry-level positions in the Computer Information Sciences Industry.

Transfer Information

Common university majors related to the field of Computer and Information Systems include: Bioinformatics, Business Information Systems, Cognitive Science, Computer Science and Engineering, Geographic Information systems, Graphic Communications, Information Systems.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Arts degree with an area of emphasis in Mathematics Studies (see page 185). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Certificate of Performance: Computer Programming*

This Certificate of Performance in computer programming requires completion of the courses listed below and is meant to prepare students who are planning on preparing for entry-level positions in computer programming and/or information

technology. The Certificate of Performance also offers students the opportunity to learn or enhance computer programming skills.

| Courses: | Units |
|-------------------------------------|--------------|
| CISC 186 Visual Basic Programming | 4 |
| CISC 190 Java Programming | 4 |
| CISC 192 C/C++ Programming | 4 |
| CISC 210 System Analysis and Design | 3 |
| Total Units = 15 | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Achievement: Computer and Information Sciences

| Courses Required for the Major: | Units |
|---|--------------|
| ACCT 116A Financial Accounting | 4 |
| ACCT 116B Managerial Accounting | 4 |
| BUSE 119 Business Communications | 3 |
| BUSE 140 Business Law & the Legal Environment | 3 |
| CISC 181 Principles of Information Systems | 4 |
| CISC 186 Visual Basic Programming | 4 |
| ECON 120 Principles of Macroeconomics | 3 |
| MATH 119 Elementary Statistics | 3 |
| CISC Elective(s)* | 3 |
| Total Units = 31 | |

*Choose a minimum of 3 units in CISC. Students should consult with their counselor prior to choosing electives to ensure electives meet program and/or transfer goals.

Associate in Science Degree: Computer and Information Sciences

| Courses Required for the Major: | Units |
|---|--------------|
| ACCT 116A Financial Accounting | 4 |
| ACCT 116B Managerial Accounting | 4 |
| BUSE 119 Business Communications | 3 |
| BUSE 140 Business Law & the Legal Environment | 3 |
| CISC 181 Principles of Information Systems | 4 |
| CISC 186 Visual Basic Programming | 4 |
| ECON 120 Principles of Macroeconomics | 3 |
| MATH 119 Elementary Statistics | 3 |
| CISC Elective(s)* | 3 |
| Total Units = 31 | |

*Choose a minimum of 3 units in CISC. Students should consult with their counselor prior to choosing electives to ensure electives meet program and/or transfer goals.

Note: Only one Computer and Information Sciences (CISC) course from the above list may be used to satisfy SDCCD general education requirements.

For graduation requirements, see the **Requirements for the Associate Degree** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Note: Some courses are not currently offered at Miramar, but are offered at City and/or Mesa Colleges. Please see a counselor.

Diesel Technology

| Award Type | Units |
|--|-------|
| Certificate of Performance: | |
| Diesel Fuel Injection Systems | 7 |
| Heavy Equipment Powertrains | 13 |
| Heavy Equipment Undercarriage Systems | 7 |
| Mobile Hydraulics Technician | 7 |
| Steering, Suspension, & Drivelines | 7 |
| Truck & Equipment Electrical Systems | 8 |
| Truck Air Brake Systems | 7 |
| Truck Drive Axles | 7 |
| Truck Transmissions & Clutches | 13 |
| Certificate of Achievement: | |
| Diesel Equipment Repair Technology (Evening Program) | 32 |
| Engine Overhaul, Caterpillar | 18 |
| Engine Overhaul, Cummins | 18 |
| Engine Overhaul, Detroit Diesel | 18 |
| Engine Repair, Caterpillar | 19 |
| Engine Repair, Cummins | 19 |
| Engine Repair, Detroit Diesel | 19 |
| Heavy Duty Transportation Technology (HDDT) —(Day Program) | 47 |
| Heavy Equipment Technology (HET)—(Day Program) | 44 |
| San Diego City Civil Service Equipment Mechanic Apprenticeship | 42 |
| San Diego Transit General Mechanic | 37 |

Associate in Science Degree:

| | |
|--|-----|
| Heavy Duty Transportation Technology (HDDT)—(Day Program) | 47* |
| Heavy Equipment Technology (HET)—(Day Program) | 44* |
| Occupational/Technical Studies (see page 182) | 18* |
| San Diego City Civil Service Equipment Mechanic Apprenticeship | 42* |
| San Diego Transit General Mechanic | 37* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

The diesel technology program provides the student with an opportunity to master the skills and knowledge required for success in servicing and maintaining diesel powered highway trucks, off-road heavy equipment, stationary engines, and marine craft. The two-year curriculum has three tracts which lead to a Certificate of Achievement, and three tracts which lead to an Associate in Science degree. In addition, the diesel program offers the Certificate of Performance in ten specialty areas. These certificates can be applied toward the Certificate of Achievement or the Associate in Science degree.

Program Learning Outcomes

The program is designed to prepare students for entry level employment as service technicians in the diesel powered equipment industry. Shop work is conducted in a manner consistent with industry standards regarding safety and hazardous material handling, shop organization and operation, use of hand and power tools, use of shop equipment, and the use of shop supplies and hardware. Hands-on experience is stressed, however, this is enriched with in-depth classroom instruction concerning theory of operation, service procedures, special tools, and troubleshooting. All classes emphasize critical thinking.

Student Learning Outcomes

Students who complete the Diesel Technology Program will be able to:

- Accurately diagnose and repair heavy duty vehicle systems and components using a variety of tools, equipment, and instruments;
- Identify workplace health and safety compliance using regulations published by the Occupational

Safety and Health Administration, and the Environmental Protection Agency;

- Research heavy duty vehicle repair data, instructions, and specifications using printed material as well as computer data base systems.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone |
|-------------|--------|--------------|
| Gene Choe | C-122 | 619-388-7526 |
| Dan Willkie | C-122 | 619-388-7527 |

Career Options

Employment may be found as a heavy-duty truck technician, heavy-equipment technician, power generation technician, and marine engine technician. Diesel technicians are employed by truck dealerships, heavy equipment dealerships, engine companies, equipment rental companies, trucking companies, truck leasing companies, bus companies, railroad companies, and independent engine and component rebuilding companies. Diesel technicians find employment in local, state, and national government agencies, boatyards and shipyards, construction, mining, agriculture, power generation, oil fields, off-shore drilling, and stand-by emergency power.

Certificate of Performance: Diesel Fuel Injection Systems*

| Courses: | Units |
|--|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 137 Diesel Fuel Injection Systems | 2 |
| DIES 144 Electronics for Diesel Technology | 3 |
| Total Units = 7 | |

Certificate of Performance: Heavy Equipment Powertrains*

| Courses: | Units |
|--|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 105 Measuring Tools and Applied Mathematics | 2 |
| DIES 210 Brakes, Final Drives and Steering Systems | 3 |
| DIES 220 Undercarriage | 3 |
| DIES 230 Heavy Equipment Transmissions | 3 |
| Total Units = 13 | |

Certificate of Performance: Heavy Equipment Undercarriage Systems*

| Courses: | Units |
|--|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 105 Measuring Tools and Applied Mathematics | 2 |
| DIES 220 Undercarriage | 3 |
| Total Units = 7 | |

Certificate of Performance: Mobile Hydraulics Technician*

| Courses: | Units |
|--|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 105 Measuring Tools and Applied Mathematics | 2 |
| DIES 200 Mobile Hydraulic Systems | 3 |
| Total Units = 7 | |

Certificate of Performance: Steering, Suspension, and Drivelines*

| Courses: | Units |
|---|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 105 Measuring Tools & Applied Mathematics | 2 |
| DIES 180 Steering, Suspension & Driveline Systems | 3 |
| Total Units = 7 | |

Certificate of Performance: Truck & Equipment Electrical Systems*

| Courses: | Units |
|--|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 138 Electrical Systems | 3 |
| DIES 144 Electronics for Diesel Technology | 3 |
| Total Units = 8 | |

Certificate of Performance: Truck Air Brake Systems*

| Courses: | Units |
|--|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 105 Measuring Tools & Applied Mathematics | 2 |
| DIES 155 Air Brake Systems | 3 |
| Total Units = 7 | |

Certificate of Performance: Truck Drive Axles*

| Courses: | Units |
|--|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 105 Measuring Tools & Applied Mathematics | 2 |
| DIES 170 Truck Drive Axles and Specifications | 3 |
| Total Units = 7 | |

Certificate of Performance: Truck Transmissions and Clutches*

| Courses: | Units |
|--|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 105 Measuring Tools & Applied Mathematics | 2 |
| DIES 160 Heavy Duty Manual Transmissions | 3 |
| DIES 165 Truck Automatic Transmissions | 3 |
| DIES 175 Truck Chassis R&R | 3 |
| Total Units = 13 | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Achievement: Diesel Technology

Diesel Equipment Repair Technology (Evening Program)

| Courses Required for the Major: | Units |
|--|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 105 Measuring Tools & Applied Mathematics | 2 |
| DIES 135 Applied Failure Analysis | 3 |
| DIES 137 Diesel Fuel Injection Systems | 2 |
| DIES 138 Electrical Systems | 3 |
| DIES 144 Electronics for Diesel Technology | 3 |
| DIES 155 Air Brake Systems | 3 |
| DIES 160 Heavy Duty Manual Transmissions | 3 |
| DIES 170 Truck Drive Axles and Specifications | 3 |

Select two courses from:

| | |
|-----------------------------|--|
| DIES 125 Diesel Engines I | |
| DIES 126 Diesel Engines II | |
| DIES 128 Diesel Engines III | |
| 8 | |
| Total Units = 32 | |

Certificate of Achievement: Diesel Technology

Engine Overhaul, Caterpillar

| Courses Required for the Major: | Units |
|--|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 105 Measuring Tools & Applied Mathematics | 2 |
| DIES 122 Diesel Engines B | 7 |
| DIES 123 Diesel Engines C | 2 |
| DIES 135 Applied Failure Analysis | 3 |
| DIES 137 Diesel Fuel Injection Systems | 2 |
| Total Units = 18 | |

Certificate of Achievement: Diesel Technology

Engine Overhaul, Cummins

| Courses Required for the Major: | Units |
|--|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 105 Measuring Tools & Applied Mathematics | 2 |
| DIES 123 Diesel Engines C | 2 |
| DIES 124 Diesel Engines D | 7 |
| DIES 135 Applied Failure Analysis | 3 |
| DIES 137 Diesel Fuel Injection Systems | 2 |
| Total Units = 18 | |

Certificate of Achievement: Diesel Technology

Engine Overhaul, Detroit Diesel

| Courses Required for the Major: | Units |
|--|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 105 Measuring Tools & Applied Mathematics | 2 |
| DIES 121 Diesel Engines A | 7 |
| DIES 123 Diesel Engines C | 2 |
| DIES 135 Applied Failure Analysis | 3 |
| DIES 137 Diesel Fuel Injection Systems | 2 |
| Total Units = 18 | |

Certificate of Achievement: Diesel Technology

Engine Repair, Caterpillar

| Courses Required for the Major: | Units |
|--|-------|
| DIES 100 Introduction to Diesel Technology | 2 |
| DIES 105 Measuring Tools & Applied Mathematics | 2 |

| | | |
|-------------------------|-----------------------------------|---|
| DIES 126 | Diesel Engines II | 4 |
| DIES 135 | Applied Failure Analysis | 3 |
| DIES 137 | Diesel Fuel Injection Systems | 2 |
| DIES 138 | Electrical Systems | 3 |
| DIES 144 | Electronics for Diesel Technology | 3 |
| Total Units = 19 | | |

Certificate of Achievement: Diesel Technology

Engine Repair, Cummins

| Courses Required for the Major: | | Units |
|--|---------------------------------------|--------------|
| DIES 100 | Introduction to Diesel Technology | 2 |
| DIES 105 | Measuring Tools & Applied Mathematics | 2 |
| DIES 128 | Diesel Engines III | 4 |
| DIES 135 | Applied Failure Analysis | 3 |
| DIES 137 | Diesel Fuel Injection Systems | 2 |
| DIES 138 | Electrical Systems | 3 |
| DIES 144 | Electronics for Diesel Technology | 3 |
| Total Units = 19 | | |

Certificate of Achievement: Diesel Technology

Engine Repair, Detroit Diesel

| Courses Required for the Major: | | Units |
|--|---------------------------------------|--------------|
| DIES 100 | Introduction to Diesel Technology | 2 |
| DIES 105 | Measuring Tools & Applied Mathematics | 2 |
| DIES 125 | Diesel Engines I | 4 |
| DIES 135 | Applied Failure Analysis | 3 |
| DIES 137 | Diesel Fuel Injection Systems | 2 |
| DIES 138 | Electrical Systems | 3 |
| DIES 144 | Electronics for Diesel Technology | 3 |
| Total Units = 19 | | |

Certificate of Achievement: Diesel Technology

Heavy Duty Transportation Technology (HDTT) (Day Program)

| Courses Required for the Major: | | Units |
|--|---------------------------------------|--------------|
| DIES 100 | Introduction to Diesel Technology | 2 |
| DIES 105 | Measuring Tools & Applied Mathematics | 2 |
| DIES 123 | Diesel Engines C | 2 |
| DIES 138 | Electrical Systems | 3 |
| DIES 144 | Electronics for Diesel Technology | 3 |
| DIES 155 | Air Brake Systems | 3 |

| | | |
|----------|--|---|
| DIES 160 | Heavy Duty Manual Transmissions and | |
| DIES 175 | Truck Chassis R&R | 6 |
| DIES 165 | Truck Automatic Transmissions and | |
| DIES 200 | Mobile Hydraulic Systems | 6 |
| DIES 170 | Truck Drive Axles and Specifications | 3 |
| DIES 180 | Steering, Suspension and Driveline Systems | 3 |

Select two courses from:

| | | |
|-------------------------|------------------|----|
| DIES 121 | Diesel Engines A | |
| DIES 122 | Diesel Engines B | |
| DIES 124 | Diesel Engines D | |
| | | 14 |
| Total Units = 47 | | |

Certificate of Achievement: Diesel Technology

Heavy Equipment Technology (HET) (Day Program)

| Courses Required for the Major: | | Units |
|--|--|--------------|
| DIES 100 | Introduction to Diesel Technology | 2 |
| DIES 105 | Measuring Tools & Applied Mathematics | 2 |
| DIES 123 | Diesel Engines C | 2 |
| DIES 138 | Electrical Systems | 3 |
| DIES 144 | Electronics for Diesel Technology | 3 |
| DIES 160 | Heavy Duty Manual Transmissions and | |
| DIES 240 | Equipment Chassis R&R | 6 |
| DIES 200 | Mobile Hydraulic Systems and | |
| DIES 230 | Heavy Equipment Transmissions | 6 |
| DIES 210 | Breaks, Final Drives and Steering Systems | 3 |
| DIES 220 | Undercarriage | 3 |

Select two courses from:

| | | |
|-------------------------|------------------|----|
| DIES 121 | Diesel Engines A | |
| DIES 122 | Diesel Engines B | |
| DIES 124 | Diesel Engines D | |
| | | 14 |
| Total Units = 44 | | |

Associate in Science Degree: Diesel Technology

Heavy Duty Transportation Technology (HDTT) (Day Program)

| Courses Required for the Major: | | Units |
|--|---------------------------------------|--------------|
| DIES 100 | Introduction to Diesel Technology | 2 |
| DIES 105 | Measuring Tools & Applied Mathematics | 2 |
| DIES 123 | Diesel Engines C | 2 |
| DIES 138 | Electrical Systems | 3 |

| | | |
|----------|--|---|
| DIES 144 | Electronics for Diesel Technology | 3 |
| DIES 155 | Air Brake Systems | 3 |
| DIES 160 | Heavy Duty Manual Transmissions and | |
| DIES 175 | Truck Chassis R&R | 6 |
| DIES 165 | Truck Automatic Transmissions and | |
| DIES 200 | Mobile Hydraulic Systems | 6 |
| DIES 170 | Truck Drive Axles and Specifications | 3 |
| DIES 180 | Steering, Suspension and Driveline Systems | 3 |

Select two courses from:

| | | |
|----------|------------------|--|
| DIES 121 | Diesel Engines A | |
| DIES 122 | Diesel Engines B | |
| DIES 124 | Diesel Engines D | |

14

Total Units = 47

For graduation requirements, see the **Requirements for the Associate Degree** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Recommended Electives: Diesel Technology 90, 121, 122, 125, 126, 128, 135, 137, 137A, 160, 165, 175, 185, 190, 200, 210, 220, 230, 235, 240, 245, 270; Computer Business Technology 103.

Associate in Science Degree: Diesel Technology

Heavy Equipment Technology (HET) (Day Program)

| Courses Required for the Major: | Units | |
|--|--|---|
| DIES 100 | Introduction to Diesel Technology | 2 |
| DIES 105 | Measuring Tools & Applied Mathematics | 2 |
| DIES 123 | Diesel Engines C | 2 |
| DIES 138 | Electrical Systems | 3 |
| DIES 144 | Electronics for Diesel Technology | 3 |
| DIES 160 | Heavy Duty Manual Transmissions and | |
| DIES 240 | Equipment Chassis R&R | 6 |
| DIES 200 | Mobile Hydraulic Systems and | |
| DIES 230 | Heavy Equipment Transmissions | 6 |
| DIES 210 | Breaks, Final Drives and Steering Systems | 3 |
| DIES 220 | Undercarriage | 3 |

Select two courses from:

| | | |
|----------|------------------|--|
| DIES 121 | Diesel Engines A | |
| DIES 122 | Diesel Engines B | |
| DIES 124 | Diesel Engines D | |

14

Total Units = 44

For graduation requirements, see the **Requirements for the Associate Degree** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Recommended Electives: Diesel Technology 90, 121, 122, 125, 126, 128, 135, 137, 137A, 155, 160, 165, 170, 175, 180, 185, 190, 200, 210, 220, 230, 235, 240, 245, 270; Computer Business Technology 103.

San Diego City Civil Service Equipment Mechanic Apprenticeship

A four-year apprenticeship program in equipment mechanic trades at the City of San Diego. Applications accepted at the City Administration Building, Community Concourse, 202 C Street, San Diego, CA 92101.

Certificate of Achievement: San Diego City Civil Service

Equipment Mechanic Apprenticeship

| Courses Required for the Major: | Units | |
|--|---|----|
| AUTO 078 | Suspension, Steering and Handling | 4 |
| AUTO 054 | Engine and Related Systems | 3 |
| DIES 100 | Introduction to Diesel Tech | 2 |
| DIES 135 | Applied Failure Analysis | 3 |
| DIES 137 | Diesel Fuel Injection Systems | 2 |
| DIES 138 | Electrical Systems | 3 |
| DIES 155 | Air Brake Systems | 3 |
| DIES 160 | Heavy Duty Manual Transmissions | 3 |
| DIES 170 | Truck Drive Axles and Specifications | 3 |
| SDCS 349I | Equipment Mechanic Apprentice Work Experience | 16 |

Total Units = 42

Associate in Science Degree: San Diego City Civil Service

Equipment Mechanic Apprenticeship

| Courses Required for the Major: | Units | |
|--|-----------------------------------|---|
| AUTO 078 | Suspension, Steering and Handling | 4 |
| AUTO 054 | Engine and Related Systems | 3 |
| DIES 100 | Introduction to Diesel Tech | 2 |
| DIES 135 | Applied Failure Analysis | 3 |
| DIES 137 | Diesel Fuel Injection Systems | 2 |
| DIES 138 | Electrical Systems | 3 |
| DIES 155 | Air Brake Systems | 3 |

| | | |
|-------------------------|---|----|
| DIES 160 | Heavy Duty Manual Transmissions | 3 |
| DIES 170 | Truck Drive Axles and Specifications | 3 |
| SDCS 349I | Equipment Mechanic Apprentice Work Experience | 16 |
| Total Units = 42 | | |

Additional general education and graduation requirements for the associate degree are listed in the Academic Requirements section of catalog. **The associate degree requires a minimum of 60 units.**

Recommended Electives: Diesel Technology 105, 144; Automotive Technology 64, 76, 195.

San Diego Transit General Mechanic Apprenticeship

San Diego Transit apprenticeship programs are designed to prepare the student for a career as a bus mechanic or bus body repair technician. For application to the programs, please contact San Diego Transit Corporation, 100 16th Street, San Diego, CA 92101. More information is available at: www.sdcommute.com/Jobs/sdtc/.

Program Goals:

This program will provide training for apprentice bus mechanics and bus body shop technicians for San Diego Transit.

Program Emphasis:

These programs provide related instruction for apprentices working on the job at San Diego Transit in the areas of bus mechanic and bus body repair technician.

Career Options:

Bus Mechanic, Bus Body Repair Technician.

Certificate of Achievement: San Diego Transit

General Mechanic Apprenticeship

| Courses Required for the Major: | | Units |
|---------------------------------|--------------------------------------|-------|
| DIES 100 | Introduction to Diesel Technology | 2 |
| DIES 124 | Diesel Engines D | 7 |
| DIES 135 | Applied Failure Analysis | 3 |
| DIES 137 | Diesel Fuel Injection Systems | 2 |
| DIES 138 | Electrical Systems | 3 |
| DIES 144 | Electronics for Diesel Technology | 3 |
| DIES 155 | Air Brake Systems | 3 |
| DIES 170 | Truck Drive Axles and Specifications | 3 |
| AIRE 100 | Basic Refrigeration Theory | 4 |
| AIRE 103 | Basic Refrigeration Lab | 2 |

| | | |
|-------------------------|------------------------|---|
| AIRE 124 | Control Systems Theory | 3 |
| AIRE 125 | Control Systems Lab | 2 |
| Total Units = 37 | | |

Associate in Science Degree: San Diego Transit

General Mechanic Apprenticeship

| Courses Required for the Major: | | Units |
|---------------------------------|--------------------------------------|-------|
| DIES 100 | Introduction to Diesel Technology | 2 |
| DIES 124 | Diesel Engines D | 7 |
| DIES 135 | Applied Failure Analysis | 3 |
| DIES 137 | Diesel Fuel Injection Systems | 2 |
| DIES 138 | Electrical Systems | 3 |
| DIES 144 | Electronics for Diesel Technology | 3 |
| DIES 155 | Air Brake Systems | 3 |
| DIES 170 | Truck Drive Axles and Specifications | 3 |
| AIRE 100 | Basic Refrigeration Theory | 4 |
| AIRE 103 | Basic Refrigeration Lab | 2 |
| AIRE 124 | Control Systems Theory | 3 |
| AIRE 125 | Control Systems Lab | 2 |
| Total Units = 37 | | |

Additional general education and graduation requirements for the associate degree are listed in the Academic Requirements section of catalog. **The associate degree requires a minimum of 60 units.**

Earth Science

(See "Physical Science" on page 195)

Elementary Education

(See "Associate in Arts Degree" on page 180)

Engineering

(See "Associate in Science Degree: Pre-Engineering Studies" on page 197)

English

| Award Type | Units |
|--|-------|
| Certificate of Performance: | |
| Advanced ESOL | 15 |
| Associate in Arts Degree: | |
| English | 18* |
| English/Literature Studies | 18* |
| * and electives as needed to meet minimum of 60 units required for the degree. | |

Description

The English program provides a breadth of coursework that includes the study of the language and investigation of great works of literature, as well as the development of reading and writing expertise. It is devoted to advancing critical thinking and academic skills in the areas of reading, writing, and English for Speakers of Other Languages (ESOL). In reading, classes focus on vocabulary expansion, comprehension, and methods for long term learning. Writing classes cover grammar, composition, creative writing and research. ESOL classes cover academic English, including four levels of instruction in reading, writing, grammar, speaking, and listening. The English program also offers literature classes in British and American Literature, literature and film, women in literature, and world literature.

Program Learning Outcomes

The English program serves four areas of study. First, it is designed to prepare students for advanced work in the major, as well as transfer to four-year institutions. For this goal, courses cover the freshmen, and sophomore requirements for English majors, many of the GE requirements, including critical thinking, and preparation for English competency tests. Second, the program supports majors across the entire college curriculum where English is recognized as key to student success and students are advised to have successfully completed English prior to beginning studies in those areas. Third, the program provides the necessary courses for the Associate of Arts Degree. And fourth, the ESOL program provides training in English language development through the academic study of grammar, writing, listening and speaking, reading, and critical thinking, culminating in the award of an advanced ESOL Certificate of Performance.

Student Learning Outcomes

Students who complete the English Program will be able to:

- Demonstrate the ability to comprehend information from a variety of texts.
- Integrate logical support, including informed opinion and fact, as well as personal interpretations, to develop complex ideas and opinions.
- Organize thoughts and ideas effectively and express them clearly in writing.
- Apply appropriate writing strategies, standard grammar, and conventional academic documentation to writings of various types and purposes.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone |
|-------------------|---------|--------------|
| Allen Andersen | H-110-H | 619-388-7535 |
| Adrian Arancibia | H-110-I | 619-388-7421 |
| Clara Blenis | H-110-P | 619-388-7533 |
| Sheryl Gobble | H-110-M | 619-388-7428 |
| Rich Halliday | H-110-R | 619-388-7517 |
| Carmen Jay | H-110-J | 619-388-7532 |
| Lisa Munoz | H-110-Q | 619-388-7360 |
| Cheryl Reed | H-110-S | 619-388-7536 |
| Mark Manasse | H-110-G | 619-388-7237 |
| Kenneth Reinstein | H-110-E | 619-388-7515 |

Career Options

English serves as essential preparation for individuals preparing for careers in teaching, law, medicine, and business. For teachers, English provides training in the very skills—reading, writing and thinking—that every student must use at any level and in every field. For law and medicine, English provides solid preparation for the professional tasks of reading comprehension, recognition and recall of ideas and details, and analysis of cases. For those who seek a career in business, English provides the thinking, writing, and analytical skills private industry is seeking and that small business success depends on. In addition, the field of English serves the “service professions” in government, health, and social work, as well as any field requiring the use of written communications and technical manuals. Lastly,

English prepares students for such “words delivery” professions as journalism, writing, publishing, translating, media and broadcasting, theater, and librarianship.

Academic Programs

The associate degree in English requires completion of the courses listed for the degree. Additional general education and graduation requirements for the associate degree are listed in the catalog. The associate degree requires a minimum of 60 units.

Transfer Information

Common university majors related to the field of English include: Creative Writing, English, Language Studies, Linguistics, Literature.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Arts degree with an emphasis in English/Literature Studies (see below). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Certificate of Performance: Advanced ESOL*

The English for Speakers of Other Languages Program consists of four levels: L19 is a combined skills class in a lecture/lab format. The L20 and L30 levels are composed of three courses. The grammar-writing component is a six-unit course and the reading and listening/speaking components are three units each. Level 40 is a single course in reading and writing. Students who successfully work through the program and complete ESOL 40 can read and write at an advanced ESOL level.

Students must complete 15 units in ESOL with a grade of “C” or better. ESOL 40 (6 units) is required with at least 9 additional units in ESOL from level 30 courses. Students must complete ESOL 40 with a grade of “C” or better and complete at least 9 units from ESOL 30, 31, or 32.

| Courses: | | Units |
|----------|--|-------|
| ESOL 040 | Reading & Writing for Non-Native Speakers of English III | 6 |

Select nine units from:

| | | |
|----------|--|---|
| ESOL 030 | Writing for Non-native Speakers of English II | 6 |
| ESOL 031 | Reading for Non-native Speakers of English II or | |
| ESOL 032 | Listening and Speaking for Non-Native Speakers of English II | 3 |

Total Units = 15

*A Certificate of Performance is a departmental award that does not appear on the student’s transcript. All courses must be completed within the San Diego Community College District.

Associate in Arts Degree: English

This degree is not intended for transfer.

| Courses Required for the Major: | | Units |
|---------------------------------|--|-------|
| ENGL 101 | Reading and Composition or | |
| ENGL 105 | Composition and Literature | 3 |
| *ENGL 205 | Critical Thinking and Intermediate Composition | 3 |
| ENGL 215 | English Literature I: 800-1799 | 3 |
| ENGL 216 | English Literature II: 1800-Present | 3 |

**Select three units from:

| | | |
|----------|--|---|
| ENGL 208 | Introduction to Literature | |
| ENGL 220 | Masterpieces of World Literature I: 1500 BCE – 1600 CE | |
| ENGL 221 | Masterpieces of World Literature II: 1600–Present | 3 |

**Select three units from:

| | | |
|----------|----------------------------------|---|
| ENGL 210 | American Literature I | |
| ENGL 211 | American Literature II | |
| ENGL 245 | Writing Creative Nonfiction | |
| ENGL 247 | Writing Seminar - Poetry | |
| ENGL 249 | Introduction to Creative Writing | |
| ENGL 254 | Intermediate Fiction Writing | 3 |

Total Units = 18

*Meets SDSU/CSU critical thinking requirement.

**Recommended series for UC transfer.

Not all courses are offered at each campus.

For graduation requirements, see the **Requirements for the Associate Degree** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Recommended Electives: English 202, 209, 238, 240, 245, 247, 249, 253, 254; Humanities 101, 102, 201, 202; Journalism 200, 210A/B/C/D.

Courses designed to support this and other majors: ESOL 19, 20, 21, 22, 30, 31, 32, 40.

Note: Some courses are not currently offered at Miramar, but are offered at City and/or Mesa Colleges. Please see a counselor.

Associate in Arts Degree: English/Literature Studies

This degree is intended for transfer.

The Associate in Arts degree with an area of emphasis in English/Literature Studies is intended for students who plan to complete a bachelor's degree at a transfer institution in an English- or literature-related major. Common university majors in this field include: Creative Writing, English, Language Studies, Linguistics, and Literature.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

| Courses Required for the Major: | Units |
|--|--------------|
| ENGL 101 Reading and Composition or | |
| ENGL 105 Composition and Literature | 3 |
| *ENGL 205 Critical Thinking and Intermediate Composition | 3 |

Select twelve units from the following:

| | |
|---|--|
| BLAS 140A History of the U.S., Black Perspectives | |
| CHIL 101 Human Growth and Development | |
| COMS 103 Oral Communication | |
| ENGL 208 Introduction to Literature | |
| ENGL 210 American Literature I | |
| ENGL 211 American Literature II | |
| ENGL 215 English Literature I: 800–1799 | |
| ENGL 216 English Literature II: 1800–Present | |
| ENGL 220 Masterpieces of World Literature I: 1500 BCE – 1600 CE | |
| ENGL 221 Masterpieces of World Literature II: 1600–Present | |
| ENGL 230 Asian American Literature | |
| ENGL 237 Women in Literature | |
| ENGL 249 Introduction to Creative Writing | |
| HIST 109 History of the United States I | |
| HIST 141 Women in the United States History I | |

| | |
|---|----|
| HUMA 201 Mythology | |
| JOUR 202 Introduction to Mass Communication | |
| POLI 102 The American Political System | |
| PSYC 101 General Psychology | |
| | 12 |
| Total Units = 18 | |

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Exercise Science

| Award Type | Units |
|--|-------|
| Certificate of Achievement: Fitness Specialist | 18 |
| Associate in Science Degree: Health and Physical Education Studies | 18* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

Physical Education is a discipline focusing on the relationship between physical activity and physical, mental, emotional, and social health. Physical activity courses teach movement skills, enhance fitness, and engender a lifestyle consistent with optimal wellness.

Program Goals

The Department of Physical Education offers an ever increasing variety of activity courses. Boasting a state-of-the-art fitness center, fieldhouse gymnasium and classrooms in addition to facilities that include a 32-acre complex of fields for softball, soccer, sand volleyball, and tennis, the Department also offers classes in a three-pool aquatic complex. Lower division theory courses provide the curricular foundation necessary to complete university transfer requirements and earn a transfer-related associate degree in Health and Physical Education Studies. In addition, an intercollegiate program offers performance-oriented students opportunities for intercollegiate competition.

Career Options

Most Physical Education career options require baccalaureate degrees and some may require graduate degrees. Some of the exciting fields open to physical educators include: athletic trainer, fitness specialist, physical therapist, health/fitness club manager, physical education instructor, coach, athletic administrator, recreation director, resort activities director, and sports journalist.

Program Learning Outcomes

The Department of Physical Education offers an ever-increasing variety of activity courses. Boasting facilities that include a 32-acre complex of fields for softball, soccer, sand volleyball, and tennis, the

Department also offers classes in a state of the art three pool aquatic complex. The recent curricular addition of lower division theory courses now allows students to pursue the Transfer Studies degree in Physical Education.

Student Learning Outcomes

Students who complete the Physical Education Program will be able to:

- Explain the five domains of health and how they impact quality of life
- Design, develop and implement an effective personalized fitness program

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone/Email |
|----------------|----------------|-----------------------------------|
| Sean Bowers | J-222C | 619-388-7232 sbowers@sdccd.edu |
| Nicolas Gehler | J-222E | 619-388-7715 ngehler@sdccd.edu |
| Kevin Petti | S5-101A | 619-388-7491 kpetti@sdccd.edu |
| Rod Porter | Fitness Center | 619-388-7442 rporter@sdccd.edu |

Transfer Information

Common university majors related to the field of Physical Education include: Exercise Science, Health Administration, Health Education, Health Sciences, Kinesiology, Physical Education, Pre-Physical Therapy, Recreation.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Science degree with an area of emphasis in Health and Physical Education Studies (see below). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Associate in Science Degree: Health and Physical Education Studies

The Associate in Science degree with an area of emphasis in Health and Physical Education Studies is intended for students who plan to complete a bachelor's degree at a transfer institution in a health- or exercise science-related major. Common university majors in this field include: Exercise Science, Health Sciences/Public Health, Kinesiology, Nutrition and Food Science, Occupational Health, Physical Education, Pre-Physical Therapy.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

Courses Required for the Major: Units

Select at least two courses from the following:

| | | |
|-----------|--|---|
| HEAL 101 | Health and Life-Style | 3 |
| HEAL 131 | Emergency Response (First Aid/CPR/AED) | 3 |
| NUTR 150 | Nutrition | 3 |
| NUTR 170 | Nutrition and Fitness | 3 |
| PHYE 164 | Water Safety Instructor | 3 |
| PHYE 241B | Introduction to Kinesiology | 3 |
| PHYE 242 | Care and Prevention of Injuries | 2 |

Select at least one course from the following:

| | | |
|-----------|---|---|
| BIOL 107 | General Biology - Lecture and Laboratory | 4 |
| BIOL 210A | Introduction to the Biological Sciences I | 4 |
| BIOL 230 | Human Anatomy | 4 |
| BIOL 235 | Human Physiology | 4 |

Select at least one course and the remainder of units needed to meet the minimum of 18 from the following:

| | | |
|-----------|--|---|
| BIOL 130 | Human Heredity | 3 |
| BIOL 135 | Biology of Human Nutrition | 3 |
| BIOL 160 | Elements of Human Anatomy and Physiology | 4 |
| BIOL 205 | General Microbiology | 5 |
| BIOL 210B | Introduction to the Biological Sciences II | 4 |
| CHEM 100 | Fundamentals of Chemistry | 3 |
| CHEM 100L | Fundamentals of Chemistry Laboratory | 1 |

| | | |
|-----------|---|---------|
| CHEM 130 | Introduction to Organic and Biological Chemistry | 3 |
| CHEM 130L | Introduction to Organic and Biological Chemistry Laboratory | 1 |
| CHEM 200 | General Chemistry I - Lecture | 3 |
| CHEM 200L | General Chemistry I - Laboratory | 2 |
| CHEM 201 | General Chemistry II - Lecture | 3 |
| CHEM 201L | General Chemistry II - Laboratory | 2 |
| HEAL 101 | Health and Life-Style | 3 |
| HEAL 131 | Emergency Response (First Aid/CPR/AED) | 3 |
| MATH 116 | College and Matrix Algebra | 3 |
| MATH 119 | Elementary Statistics | 3 |
| MATH 121 | Basic Techniques of Applied Calculus I | 3 |
| MATH 141 | Precalculus | 5 |
| MATH 150 | Calculus with Analytic Geometry I | 5 |
| PHYE 103 | Aerobic Dance | 0.5 - 1 |
| PHYE 106 | Aquatic Fitness | 0.5 - 1 |
| PHYE 108 | Badminton | 0.5 - 1 |
| PHYE 112 | Basketball | 0.5 - 1 |
| PHYE 115 | Bowling | 0.5 - 1 |
| PHYE 120 | Fencing | 0.5 - 1 |
| PHYE 123 | Cardio Conditioning | 0.5 - 1 |
| PHYE 126 | Golf | 0.5 - 1 |
| PHYE 132 | Individual Conditioning | 0.5 - 1 |
| PHYE 139 | Lifeguard Training | 3 |
| PHYE 141 | Over-the-Line | 1 |
| PHYE 149 | Soccer | 0.5 - 1 |
| PHYE 151 | Softball | 0.5 - 1 |
| PHYE 153 | Aerobic and Core Conditioning | 0.5 - 1 |
| PHYE 154 | Fitness Walking | 0.5 - 1 |
| PHYE 155 | Swimming | 0.5 - 1 |
| PHYE 156 | Water Exercise | 0.5 - 1 |
| PHYE 159 | Tennis | 0.5 - 1 |
| PHYE 161 | Volleyball | 0.5 - 1 |
| PHYE 163 | Water Polo | 0.5 - 1 |
| PHYE 166 | Weight Training | 0.5 - 1 |
| PHYE 204 | Intercollegiate Basketball I | 1 - 2 |
| PHYE 205 | Intercollegiate Basketball II | 1 - 2 |
| PHYE 214 | Intercollegiate Soccer I | 2 |
| PHYE 215 | Intercollegiate Soccer II | 2 |
| PHYE 216 | Intercollegiate Softball I | 2 |
| PHYE 218 | Intercollegiate Swimming I | 2 |
| PHYE 219 | Intercollegiate Swimming II | 2 |
| PHYE 220 | Intercollegiate Tennis I | 2 |
| PHYE 221 | Intercollegiate Tennis II | 2 |
| PHYE 224 | Intercollegiate Volleyball I | 2 |
| PHYE 225 | Intercollegiate Volleyball II | 2 |
| PHYE 226 | Intercollegiate Water Polo I | 2 |
| PHYE 227 | Intercollegiate Water Polo II | 2 |
| PHYE 232 | Martial Arts | 1 |
| PHYE 233 | Kickboxing | 0.5 - 1 |

| | | |
|----------|--|---|
| PHYE 240 | Physical Education in the Elementary Schools | 3 |
| PHYS 125 | General Physics | 5 |
| PSYC 101 | General Psychology | 3 |
| PSYC 258 | Behavioral Science Statistics | 3 |
| PSYC 260 | Introduction to Physiological Psychology | 3 |
| SOCO 101 | Principles of Sociology | 3 |

Total Units = 18

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Fitness Specialist

Description

Students in this program will be trained as group exercise leaders and personal trainers. Students will learn the principles of exercise and physical conditioning, techniques of leading individual and group exercise classes, appropriate methods for establishing healthy behavior and designing personalized exercise prescriptions. Students will be able to develop safe and effective exercise plans for a variety of clients.

The Fitness Specialist certificate program trains students for positions, entry-level or higher, in the growing fitness industry. Program graduates will be qualified to be exercise testing technicians, fitness instructors, strength training instructors, aerobic instructors, and personal fitness trainers.

This program prepares candidates for National Academy of Sports Medicine (NASM), American Council on Exercise (ACE), Aerobics and Fitness Association of America (AFAA), and the National Strength & Conditioning Association Certified Personal Trainer (NSCA-CPT) certification exams.

Certificate of Achievement: Fitness Specialist

| Courses Required for the Major: | | Units |
|---------------------------------|-----------------------------------|-------|
| PHYE 242 | Care and Prevention of Injuries | 2 |
| PHYE 280 | Applied Exercise Physiology | 2 |
| PHYE 281 | Applied Kinesiology | 2 |
| PHYE 282 | Techniques of Weight Training | 2 |
| PHYE 283 | Exercise and Fitness Assessment | 2 |
| PHYE 284 | Fitness and Sports Nutrition | 2 |
| PHYE 285 | Exercise for Special Populations | 2 |
| PHYE 286 | Techniques of Exercise Leadership | 2 |
| PHYE 287 | Fitness Specialist Internship | 2 |

Total Units = 18

Filipino

See "World Language Studies" on page 203.

Fire Protection Technology

Fire - Emergency Medical - Lifeguards

| Award Type | Units |
|--|-------|
| Certificate of Achievement: | |
| Fire Prevention | 28.5 |
| Fire Protection | 33.5 |
| Fire Technology | 32.5 |
| Open Water Lifeguard Professional | 31 |
| Associate in Science Degree: | |
| Fire Prevention | 28.5* |
| Fire Protection | 33.5* |
| Fire Technology | 32.5* |
| Open Water Lifeguard Professional | 25* |
| Occupational/Technical Studies (see page 182) | 18* |
| * and electives as needed to meet minimum of 60 units required for the degree. | |

Description

The Fire Protection Technology department offers programs in a wide range of subject areas related to careers in the fields associated with the technology of fire protection, rescue, and public safety employment. This program provides theory and training necessary for successful performance in a variety of settings and positions. Emphasis is placed on modern methods of fire prevention, fire suppression, fire service management, and public safety. Public and private fire protection systems, life safety of fire service personnel and civilians, protection of property through the application of code enforcement, and the increasing problems of hazardous materials, emergency medical services, rescue, urban interface, and arson are studied.

Program Learning Outcomes

Program options in the Fire Protection Technology department include Certificates of Achievement and Associate Degrees in Fire Protection, Fire Prevention, and Open Water Lifeguard Professional. The students are required to complete 33.5 units of fire protection technology courses for the Associate Degree. Fire Protection Technology 100A, 101, 102, 103, 104, 105, 107, 109, 110 and EMGM 105 are core courses for the certificate or degree program. It is highly recommended that pre-employment students concentrate on taking 100 level courses. Students

planning to complete the California State Board of Fire Services Certification for Fire Officer should take the following courses: Fire Protection Technology 200A, 200B, 200C, 201, 202A, 202B, 203A, 204A, 204B, 381F and EMGM 105.

Student Learning Outcomes

Students who complete the Fire Protection Technology Program will be able to:

- Identify minimum qualifications and entry-level skills for fire fighter hiring. The student will be able to describe the following elements: application process; written exam process; physical agility exam, oral interview, chief's interview; background investigation; and fire fighter probationary process. Students will identify fire service history, culture and diversity.
- Demonstrate the ability to analyze, appraise and evaluate fire and emergency incidents and identify components of emergency management and fire fighter safety including: Size-up, report on conditions, Incident Command System; RECEO; 10 Standard Firefighting Orders; 18 Situations that Shout "Watch Out"; and common factors associated with injuries and line of duty deaths.
- Identify and comprehend laws, regulations, codes and standards that influence fire department operations, and identify regulatory and advisory organizations that create and mandate them, especially in the areas of fire prevention, building codes and ordinances, and firefighter health and safety.
- Analyze the causes of fire, determine extinguishing agents and methods, differentiate the stages of the fire and fire development, and compare methods of heat transfer.
- Calculate flow requirements for fire apparatus, diagram a pump and plumbing schematic for fire apparatus, and apply mathematic formulae to hydraulics problems.
- Identify and describe the apparatus used in the fire service, and the equipment and maintenance of fire apparatus and equipment.
- Identify and describe common types of building construction and conditions associated with structural collapse and firefighter safety.

- Differentiate between fire detection and fire suppression systems. Student will design and diagram a wet and dry fire protection system, and identify alarm system components and their operations.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone |
|-----------------|--------|----------------|
| Darren Hall | 479-4 | (619) 221-2145 |
| Mary Kjartanson | 479-3 | (619) 221-2144 |
| Dennis Sheean | 480 | (619) 221-2143 |
| John Salinsky | 479-5 | (619) 221-2147 |
| Marty Walsh | 479-2 | (619) 221-2146 |

Career Options

A number of career options are accessible in the Fire Protection Technology and Public Safety fields. These employment positions are primarily in the public sector. However, the private sector provides employment opportunities that include but are not limited to: Fire insurance inspectors and investigators, Fire protection systems installers, Emergency medical services providers, Hazardous materials mitigation, Lifeguarding, and Fire protection engineering. Requirements may change with each series of Academy Classes. Details are available in the Fire Technology Department office.

Academic Programs

Fire Protection Technology, Certificates of Achievement and Associate Degrees require completion of courses listed after each option. Additional general education and graduation requirements for the associate degree are listed in the catalog.

San Diego Fire Department Training Academy

The San Diego City Fire Department trains firefighter recruits in a 14 week, 9 unit, Fire Academy (FIPT 381) that is operated in conjunction with Miramar College. In each Fire Academy, usually 4 to 6 recruits are chosen by a lottery system from a pool of qualified applicants. These "Open Enrollee" students earn no salary while in the Academy. To be eligible for the Open Enrollee lottery, applicants must be on the current San Diego Fire Department's eligibility list.

Requirements may change with each series of Academy Classes. Details are available in the Fire Technology Department office.

Transfer Information

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Science degree with an area of emphasis in Occupational/Technical Studies (see page 182). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Certificate of Achievement: Fire Protection Technology

Fire Prevention

| Courses Required for the Major: | | Units |
|---------------------------------|---|-------|
| ENGL 101 | Reading and Composition | 3 |
| FIPT 101 | Fire Protection Organization | 3 |
| FIPT 102 | Fire Prevention Technology | 3 |
| FIPT 103 | Fire Protection Equipment and Systems | 3 |
| FIPT 104 | Building Construction for Fire Protection | 3 |
| FIPT 105 | Fire Behavior and Combustion | 3 |
| FIPT 202A | Fire Prevention IA | 2 |
| FIPT 202B | Fire Prevention IB | 2 |
| FIPT 202C | Fire Prevention IC | 2 |
| FIPT 203A | Fire Investigation IA | 2 |
| ADJU 356A | 832 PC Laws of Arrest | 2.5 |

Total Units = 28.5

Certificate of Achievement: Fire Protection Technology

Fire Protection

| Courses Required for the Major: | | Units |
|---------------------------------|-------------------|-------|
| FIPT 200A | Fire Command IA | 2 |
| FIPT 200B | Fire Command IB | 2 |
| FIPT 200C | Fire Command 1C | 1.5 |
| FIPT 201 | Fire Management I | 2 |

| | | |
|-----------|---|---------------------------|
| FIPT 202A | Fire Prevention IA | 2 |
| FIPT 202B | Fire Prevention IB | 2 |
| FIPT 203A | Fire Investigation IA | 2 |
| FIPT 206A | Instructor Training 1A: Psychomotor Lesson Delivery | 2 |
| FIPT 206B | Instructor Training 1B: Cognitive Lesson Delivery | 2 |
| FIPT 381F | Basic Fire Fighter 1 Academy | 9 |
| EMGM 105A | Emergency Medical Technician - National Registry | 7 |
| | | Total Units = 33.5 |

Certificate of Achievement: Fire Protection Technology

Fire Technology

| Courses Required for the Major: | | Units |
|--|---|---------------------------|
| FIPT 150A | Introduction to Fire Suppression and Maintenance Manipulative Tasks (Beginning) | 1.5 |
| FIPT 101 | Fire Protection Organization | 3 |
| FIPT 102 | Fire Prevention Technology | 3 |
| FIPT 103 | Fire Protection Equipment and Systems | 3 |
| FIPT 104 | Building Construction for Fire Protection | 3 |
| FIPT 105 | Fire Behavior and Combustion | 3 |
| FIPT 107 | Fire Fighting Tactics and Strategy | 3 |
| FIPT 109 | Fire Service Hydraulics | 3 |
| FIPT 110 | Wildland Fire Control | 3 |
| EMGM 105A | Emergency Medical Technician - National Registry | 7 |
| | | Total Units = 32.5 |

Certificate of Achievement: Fire Protection Technology

Open Water Lifeguard Professional

| Courses Required for the Major: | | Units |
|--|---|--------------|
| FIPT 63 | Personal Watercraft Operations | 1 |
| FIPT 115 | Low Angle Rescue | 0.5 |
| FIPT 121 | Vertical Rescue | 1 |
| EMGM 105A | Emergency Medical Technician - National Registry | 7 |
| FIPT 160 | Introduction to Open Water Lifeguarding | 3 |
| FIPT 161 | Inflatable Rescue Boat Operations | 1.5 |
| FIPT 206A | Instructor Training 1A: Psychomotor Lesson Delivery | 2 |
| FIPT 206B | Instructor Training 1B: Cognitive Lesson Delivery | 2 |
| FIPT 243 | Rescue Systems I | 1.5 |

| | | |
|-----------|--------------------------------|-------------------------|
| FIPT 308A | Confined Space Technician | 1 |
| FIPT 311M | Swiftwater Rescue Technician I | 1 |
| ADJU 102 | Criminal Law I | 3 |
| ADJU 167 | Report Writing | 3 |
| ADJU 356A | 832 PC Laws of Arrest | 2.5 |
| ADJU 356B | 832 PC Firearms | 1 |
| | | Total Units = 31 |

Associate in Science Degree: Fire Protection Technology

Fire Prevention

| Courses Required for the Major: | | Units |
|--|---|---------------------------|
| ENGL 101 | Reading and Composition | 3 |
| FIPT 101 | Fire Protection Organization | 3 |
| FIPT 102 | Fire Prevention Technology | 3 |
| FIPT 103 | Fire Protection Equipment and Systems | 3 |
| FIPT 104 | Building Construction for Fire Protection | 3 |
| FIPT 105 | Fire Behavior and Combustion | 3 |
| FIPT 202A | Fire Prevention IA | 2 |
| FIPT 202B | Fire Prevention IB | 2 |
| FIPT 202C | Fire Prevention IC | 2 |
| FIPT 203A | Fire Investigation IA | 2 |
| ADJU 356A | 832 PC Laws of Arrest | 2.5 |
| | | Total Units = 28.5 |

Associate in Science Degree: Fire Protection Technology

Fire Protection

| Courses Required for the Major: | | Units |
|--|---|---------------------------|
| FIPT 200A | Fire Command IA | 2 |
| FIPT 200B | Fire Command IB | 2 |
| FIPT 200C | Fire Command 1C | 1.5 |
| FIPT 201 | Fire Management I | 2 |
| FIPT 202A | Fire Prevention IA | 2 |
| FIPT 202B | Fire Prevention IB | 2 |
| FIPT 203A | Fire Investigation IA | 2 |
| FIPT 206A | Instructor Training 1A: Psychomotor Lesson Delivery | 2 |
| FIPT 206B | Instructor Training 1B: Cognitive Lesson Delivery | 2 |
| FIPT 381F | Basic Fire Fighter 1 Academy | 9 |
| EMGM 105A | Emergency Medical Technician - National Registry | 7 |
| | | Total Units = 33.5 |

Associate in Science Degree: Fire Protection Technology

Fire Technology

| Courses Required for the Major: | | Units |
|--|---|--------------|
| FIPT 150A | Introduction to Fire Suppression and Maintenance Manipulative Tasks (Beginning) | 1.5 |
| FIPT 101 | Fire Protection Organization | 3 |
| FIPT 102 | Fire Prevention Technology | 3 |
| FIPT 103 | Fire Protection Equipment and Systems | 3 |
| FIPT 104 | Building Construction for Fire Protection | 3 |
| FIPT 105 | Fire Behavior and Combustion | 3 |
| FIPT 107 | Fire Fighting Tactics and Strategy | 3 |
| FIPT 109 | Fire Service Hydraulics | 3 |
| FIPT 110 | Wildland Fire Control | 3 |
| EMGM 105A | Emergency Medical Technician - National Registry | 7 |
| Total Units = 32.5 | | |

Associate in Science Degree: Fire Protection Technology

Open Water Lifeguard Professional

| Courses Required for the Major: | | Units |
|--|---|--------------|
| FIPT 115 | Low Angle Rescue | 0.5 |
| FIPT 121 | Vertical Rescue | 1 |
| EMGM 105A | Emergency Medical Technician-National Registry | 7 |
| FIPT 160 | Introduction to Open Water Lifeguarding | 3 |
| FIPT 206A | Instructor Training 1A: Psychomotor Lesson Delivery | 2 |
| FIPT 206B | Instructor Training 1B: Cognitive Lesson Delivery | 2 |
| FIPT 311M | Swiftwater Rescue Technician I | 1 |
| ADJU 102 | Criminal Law I | 3 |
| ADJU 167 | Report Writing | 3 |
| ADJU 356A | 832 PC Laws of Arrest | 2.5 |
| Total Units = 25 | | |

Geology

See "Physical Science" on page 195.

Geography

See "Social and Behavioral Sciences" on page 198.

History

See "Social and Behavioral Sciences" on page 198.

Humanities

| Award Type | Units |
|----------------------------------|--------------|
| Associate in Arts Degree: | |
| Humanities Studies | 18* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

The study of humanities offers students a broad, interdisciplinary understanding of humankind's cultural heritage. This study includes: history, literature, philosophy, religion, and the arts. The goal of this major is to provide an interdisciplinary understanding of ideas and forms of expression that exert a major influence on civilization. The humanities provide a broadly-based education for many careers.

Program Learning Outcomes

The curriculum is intended to prepare students for advanced degrees at a baccalaureate institution. In addition it may also meet requirements for general education at both the two and four-year colleges and universities.

Student Learning Outcomes

Students who complete the Humanities Program will be able to:

- Analyze the impact cultures and subcultures have on societal expectations and behaviors.
- Distinguish the uniqueness of a variety of cultures to develop an appreciation for these differences.
- Analyze historical occurrences and their impact on societal expectations and behaviors.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone |
|----------------|---------------|------------------|
| Paula Carrier | H-1100 | 619-388-7518 |

Career Options

Most careers related to this discipline require education beyond the associate degree level.

Humanities degrees are for students who wish to base their careers on broad knowledge of American and world cultures. This major is applicable to posts in government, business, education, and the arts. Additional specialized training can lead to careers in foreign career service, museum work or teaching.

Transfer Information

Common university majors related to the field of Humanities include: Art History, Classics, Creative Writing, English, Film Studies, Geography, Humanities, Interdisciplinary Studies, Liberal Studies, Religious Studies.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Arts degree with an area of emphasis in Humanities Studies (see below). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Associate in Arts Degree: Humanities Studies

The Associate in Arts degree with an area of emphasis in Humanities Studies is intended for students who plan to complete a bachelor’s degree at a transfer institution in a humanities-related major. Common university majors in this field include: American Studies, Classics, Ethics, Humanities, Philosophy, and Religious Studies.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

| Courses Required for the Major: | | Units |
|--|---|--------------|
| PHIL 205 | Critical Thinking and Writing in Philosophy or | |
| PHIL 100 | Logic and Critical Thinking | 3 |

Select at least 15 units from the following:

| | | |
|-----------|--|---|
| ANTH 103 | Introduction to Cultural Anthropology | 3 |
| ARTF 113 | Arts of Africa, Oceania, and the Americas | 3 |
| ARTF 125 | Art History: Arts of the Asian Continent | 3 |
| BLAS 140A | History of the U.S., Black Perspectives | 3 |
| BLAS 140B | History Of The U.S., Black Perspectives | 3 |
| ENGL 208 | Introduction to Literature | 3 |
| ENGL 210 | American Literature I | 3 |
| ENGL 211 | American Literature II | 3 |
| ENGL 220 | Masterpieces of World Literature I: 1500 BCE – 1600 CE | 3 |
| ENGL 221 | Masterpieces of World Literature II: 1600 – Present | 3 |
| HIST 100 | World History I | 3 |
| HIST 101 | World History II | 3 |
| HIST 105 | Introduction to Western Civilization I | 3 |
| HIST 109 | History of the United States I | 3 |
| HIST 110 | History of the United States II | 3 |
| HIST 141 | Women in United States History I | 3 |
| HIST 142 | Women in United States History II | 3 |
| HUMA 101 | Introduction to the Humanities I | 3 |
| HUMA 102 | Introduction to the Humanities II | 3 |
| HUMA 106 | World Religions | 3 |
| HUMA 201 | Mythology | 3 |
| MUSI 100 | Introduction to Music | 3 |
| MUSI 109 | World Music | 3 |
| PHIL 100 | Logic and Critical Thinking | 3 |
| PHIL 101 | Symbolic Logic | 3 |
| PHIL 102A | Introduction To Philosophy: Reality and Knowledge | 3 |
| PHIL 102B | Introduction To Philosophy: Values | 3 |
| PHIL 205 | Critical Thinking and Writing in Philosophy | 3 |
| POLI 102 | The American Political System | 3 |

Total Units = 18

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.

- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Human Development

See "Child Development" on page 149.

Interdisciplinary Studies

| Award Type | Units |
|---|--------|
| Certificate of Performance: | |
| Honors Global Competencies Certificate | 15-17 |
| Certificate of Achievement: | |
| CSU General Education-Breadth | 39-40 |
| Intersegmental General Education Transfer (IGETC) | 37-40* |
| Associate in Arts Degree: | |
| Elementary Education | 18* |
| Associate in Science Degree: | |
| Occupational/Technical Studies | 18* |
| Selected Studies | 18* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

Interdisciplinary Studies is a general term referring to instructional programs that incorporate coursework from a variety of different subject areas. The Interdisciplinary Studies program includes certificates designed to provide a broad exposure to a variety of subject areas.

Program Learning Outcomes

The Interdisciplinary Studies program is designed to prepare students to transfer to a four-year university and/or to gain a broad exposure to a variety of subject areas.

Student Learning Outcomes

Students who complete a certificate or degree in the Interdisciplinary Studies Program will be able to:

- Organize thoughts and ideas effectively and express them clearly and correctly in writing
- Read, analyze, discuss, and evaluate written works and sources
- Express and manipulate quantitative information in verbal, numeric, graphic, and symbolic form
- Interpret natural phenomena through the application of scientific principles
- Examine the relationships between science and other human activities

- Evaluate the ways people act and have acted in response to their societies and social subgroups
- Demonstrate an awareness of cultural activities and artistic expressions
- Apply language toward logical thought, clear and precise expression, and critical evaluation of communication

Upon successful completion of a degree in the Interdisciplinary Studies program, students can also:

- Demonstrate critical inquiry, analysis, thinking, writing, and quantitative skills across two or more related interdisciplinary subject areas.

General Education Certificates

The Certificate of Achievement in CSU General Education - Breadth and the Certificate of Achievement in Intersegmental General Education Transfer (IGETC) are designed for students who intend to complete university general education requirements prior to transfer to a California State University (CSU) or University of California (UC) campus.

General education (GE) is a set of courses from a variety of different subject areas that every student must complete in order to earn a degree, regardless of major. The goal is to provide a well-rounded or “liberal” education and to develop the knowledge, skills, and attitudes that together help make up an educated person. The completion of GE prior to transfer is not required for admission to most universities. However, it is usually in the students’ best interest to complete an appropriate transfer GE pattern at the community college. This is because GE requirements that are not fulfilled prior to transfer must be completed later at the university, which often extends the time and expense of a university education.

Certificate of Achievement: CSU General Education - Breadth

The student will select courses that fulfill the CSU GE certification pattern detailed on page 100 of this catalog. CSU GE is accepted by all CSU campuses and some private / independent or out of state universities. CSU GE is not accepted by the UC system.

Total units = 39-40

Certificate of Achievement: Intersegmental General Education Transfer (IGETC)

The student will select courses that fulfill the IGETC certification pattern detailed on page 93 of this catalog. IGETC is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private / independent or out of state universities.

Total units = 37-40

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. Additional courses may be required to meet university lower-division requirements. Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.

Honors Global Competencies Certificate

Description

The Honors Global Competencies Certificate provides an interdisciplinary and systemic approach in order to prepare students for the highly diverse, technologically-rich, and multilingual global society in which we live. The Certificate offers students the opportunity to gain a global perspective through completion of coursework in intercultural competencies, communication skills, technology skills, and coping skills. This certificate helps students to transfer to four-year institutions in concert with the Honors designation. It prepares students for study and work in the world as a whole in professional fields such as international studies, intercultural studies, language studies, international business, international law, political science, comparative literature, environmental studies, history, technology, social sciences, humanities, teaching, and more.

Program Emphasis

The Honors Global Competencies certificate has an international emphasis.

Career Options

The Honors Global Competencies certificate might lead to careers in the following areas: international relations, international business, politics, international law, technology professions, teaching, translating, travel and tourism, and intercultural communications, among others.

Certificate of Performance: Honors Global Competencies Certificate*

The Honors Global Competencies Certificate offers you the opportunity to gain a global perspective through completion of coursework in intercultural competencies, communication skills, technology skills, and coping skills.

| Courses: | Units |
|---|--------------|
| ENGL 205 Critical Thinking and Intermediate Composition | 3 |

Select 3-5 units from the following introductory or higher level foreign languages:

| | |
|-------------------------------------|---|
| ARAB 101 First Course in Arabic | 5 |
| FREN 101 First Course in French | 5 |
| GERM 101 First Course in German | 5 |
| ITAL 101 First Course in Italian | 5 |
| JAPN 101 First Course in Japanese | 5 |
| RUSS 101 First Course in Russian | 5 |
| SPAN 101 First Course in Spanish | 5 |
| TAGA 101 First Course in Tagalog | 5 |
| VIET 101 First Course in Vietnamese | 5 |

Select 6 units from the following:

| | |
|---|---|
| ANTH 102 Introduction to Physical Anthropology | 3 |
| ANTH 103 Introduction to Cultural Anthropology | 3 |
| ARTF 110 Art History: Prehistoric to Gothic | 3 |
| ARTF 111 Art History: Renaissance to Modern | 3 |
| BIOL 101 Issues in Environmental Biology | 4 |
| COMS 180 Intercultural Communication | 3 |
| ECON 120 Principles of Macroeconomics | 3 |
| ENGL 101 Reading and Composition | 3 |
| ENGL 105 Composition and Literature | 3 |
| ENGL 220 Masterpieces of World Literature I: 1500 BCE – 1600 CE | 3 |
| ENGL 221 Masterpieces of World Literature II: 1600 – Present | 3 |

| | |
|---|---|
| HUMA 101 Introduction to the Humanities I | 3 |
| HUMA 102 Introduction to the Humanities II | 3 |
| HIST 100 World History I | 3 |
| HIST 101 World History II | 3 |
| MUSI 101 Music History I: Middle Ages to Mid 18th Century | 3 |
| MUSI 102 Music History II: Mid 18th - Early 20th Century | 3 |
| MUSI 109 World Music | 3 |
| PHIL 106 Asian Philosophy | 3 |
| PHIL 125 Philosophy of Women | 3 |
| POLI 101 Introduction to Political Science | 3 |
| POLI 103 Comparative Politics | 3 |
| POLI 140 Contemporary International Politics | 3 |

Select 3 units from the following:

| | |
|--|---|
| CHIL 101 Human Growth and Development | 3 |
| CISC 181 Principles of Information Systems | 4 |
| GEOG 102 Cultural Geography | 3 |
| HEAL 101 Health and Life-Style | 3 |
| PSYC 101 General Psychology | 3 |

Total Units = 15-17

This certificate will be offered through the Honors Programs at City, Mesa, and Miramar Colleges. All coursework except for foreign language must be done as an honors class or as an honors contract.

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Associate in Arts Degree: Elementary Education

The Associate in Arts degree with an area of emphasis in Elementary Education is intended for students who plan to complete a bachelor's degree at a transfer institution in preparation for a California Multiple Subject Teaching Credential. Most students pursue this credential with the goal of becoming an elementary school or special education teacher. Common university majors in this field include: Liberal Studies, Human Development, Interdisciplinary Studies, and Teacher Preparation.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

| Courses Required for the Major: | Units |
|---|--------------|
| MATH 210A Concepts of Elementary School Mathematics I | 3 |
| Complete at least one course from the following: | |
| CHIL 101 Human Growth and Development | |
| EDUC 200 Teaching as a Profession | |
| EDUC 203 Service Learning for Prospective Teachers | |
| PHYE 240 Physical Education in the Elementary Schools | |
| MATH 210B Concepts of Elementary School Mathematics II | |
| MATH 212 Children's Mathematical Thinking | 1-13 |
| Complete at least one course and the remainder of units needed to meet the minimum of 18 from the following: | |
| ANTH 103 Introduction to Physical Anthropology | |
| ARAB 101 First Course in Arabic | |
| ARAB 102 Second Course in Arabic | |
| ARTF 100 Art Orientation | |
| ARTF 110 Art History | |
| ARTF 111 Art History | |
| ARTF 155A Freehand Drawing I | |
| ASTR 101 Descriptive Astronomy | |
| ASTR 111 Astronomy Laboratory | |
| BIOL 107 General Biology-Lecture and Laboratory | |
| BIOL 230 Human Anatomy | |
| BIOL 235 Human Physiology | |
| BLAS 140A History of the U.S., Black Perspectives | |
| BLAS 140B History of the U.S., Black Perspectives | |
| CHIL 141 The Child, Family and Community | |
| COMS 103 Oral Communication | |
| COMS 135 Interpersonal Communication | |
| COMS 160 Argumentation | |
| ENGL 101 Reading and Composition | |
| ENGL 105 Composition and Literature | |
| ENGL 205 Critical Thinking and Intermediate Composition | |
| ENGL 208 Introduction to Literature | |
| ENGL 209 Literary Approaches to Film | |
| ENGL 210 American Literature I | |
| ENGL 211 American Literature II | |
| ENGL 215 English Literature I: 800-1799 | |
| ENGL 216 English Literature II: 1800-Present | |
| ENGL 220 Masterpieces of World Literature I: 1500 BCE - 1600 CE | |
| ENGL 221 Masterpieces of World Literature II: 1600 - Present | |
| ENGL 230 Asian American Literature | |
| ENGL 237 Women in Literature | |
| ENGL 249 Introduction to Creative Writing | |

| | |
|---|--|
| GEOG 102 Cultural Geography | |
| GEOG 104 World Regional Geography | |
| GEOL 100 Physical Geology | |
| GEOL 101 General Geology Laboratory | |
| GEOL 104 Earth Science | |
| HEAL 190 Health Education for Teachers | |
| HIST 100 World History I | |
| HIST 101 World History II | |
| HIST 109 History of the United States I | |
| HIST 110 History of the United States II | |
| HIST 141 Women in United States History I | |
| HIST 142 Women in United States History II | |
| HIST 150 Native Americans in United States History | |
| HIST 151 Native Americans in United States History | |
| HUMA 101 Introduction to the Humanities | |
| HUMA 102 Introduction to the Humanities II | |
| JOUR 202 Introduction to Mass Communication | |
| LIBS 101 Information Literacy and Research Skills | |
| MATH 150 Calculus with Analytical Geometry I | |
| MUSI 100 Introduction to Music | |
| MUSI 110 Music for Elementary School Teachers | |
| PHIL 100 Logic and Critical Thinking | |
| PHIL 102A Introduction to Philosophy: Reality and Knowledge | |
| PHIL 102B Introduction to Philosophy: Values | |
| PHIL 205 Critical Thinking and Writing in Philosophy | |
| PHYN 100 Survey of Physical Science | |
| PHYN 101 Survey of Physical Science Laboratory | |
| PHYN 120 Physical Oceanography | |
| POLI 102 The American Political System | |
| POLI 103 Comparative Politics | |
| PSYC 101 General Psychology | |
| PSYC 230 Psychology of Lifespan Development | |
| SOCO 101 Principles of Sociology | |
| SPAN 101 First Course in Spanish | |
| SPAN 102 Second Course in Spanish | |
| SPAN 201 Third Course in Spanish | |
| SPAN 202 Fourth Course in Spanish | |
| SPAN 215 Spanish for Spanish Speakers I | |
| SPAN 216 Spanish for Spanish Speakers II | |
| TAGA 101 First Course in Tagalog | |
| TAGA 102 Second Course in Tagalog | |
| TAGA 201 Third Course in Tagalog | |

2-14

Total Units = 18

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Associate in Science Degree: Occupational/Technical Studies

The Associate in Science degree with an area of emphasis in Occupational/Technical Studies is intended for students who plan to complete a bachelor's degree at a transfer institution in an occupational- or technical-related major. Common university majors in this field include: Aviation and Aerospace Engineering, Aviation Management, Criminal Justice / Justice Studies, Fire

Protection Administration, Industrial Technology, Manufacturing Technology, and Vocational Education.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

Courses Required for the Major: Units

Select at least one course from the following occupational courses:

| | |
|-----------|---|
| ACCT 120 | Federal Income Tax |
| ACCT 150 | Computer Accounting Applications |
| ADJU 101 | Introduction to Administration of Justice |
| ADJU 101A | Introduction to Administration of Justice I |
| ADJU 101B | Introduction to Administration of Justice II |
| ADJU 101C | Introduction to Administration of Justice III |
| ADJU 102 | Criminal Law I |
| ADJU 106 | Diversity and Community Relations |
| ADJU 140 | Patrol Procedures |
| ADJU 160 | Criminal Law II |
| ADJU 161 | Juvenile Procedures |
| ADJU 162 | Criminal Investigation |
| ADJU 167 | Report Writing |
| ADJU 201 | California Criminal Procedure |
| ADJU 210 | Rules of Evidence |
| BANK 102 | Mortgage Brokerage and Banking |
| BANK 104 | Principles of Loan Processing |
| BANK 106 | Loan Underwriting |
| BANK 108 | Principles of Loan Closing |
| BUSE 101 | Business Mathematics |
| BUSE 150 | Human Relations in Business |
| HEAL 131 | Emergency Response (First Aid/CPR/AED) |
| LEGL 100A | Introduction to Paralegalism |
| LEGL 100B | Legal Procedures |
| LEGL 105 | Legal Research |
| LEGL 110 | Legal Writing and Communications |
| LEGL 115 | Civil Litigation I |
| LEGL 120 | Civil Litigation II - Torts |
| LEGL 180 | Contract Law |
| MILS 100 | Introduction to Military Science |
| MILS 110 | Leadership Theory and Practice |
| MILS 120 | Military Justice, Ethics, and the Law of Armed Conflict |
| PERG 130 | Career-Life Planning |

| | |
|----------|---------------------------------------|
| PHYE 139 | Lifeguard Training |
| PHYE 164 | Water Safety Instructor |
| REAL 101 | Real Estate Principles |
| REAL 105 | Legal Aspects of Real Estate I |
| REAL 110 | Principles of Real Estate Appraisal I |
| REAL 115 | Real Estate Finance I |
| REAL 120 | Real Estate Practice |
| REAL 125 | Real Estate Economics |
| REAL 130 | Real Property Management |
| REAL 140 | Real Estate Appraisal II |

1-17

Select at least one course and the remainder of units needed to meet the minimum of 18 from the following technical courses:

| | |
|-----------|--|
| AVIA 101 | Private Pilot Ground School |
| AVIA 105 | Introduction to Aviation and Aerospace |
| AVIA 125 | Aviation and Airport Management |
| AVIA 128 | Group Dynamics, Teams Under Stress |
| AVIA 133 | Human Factors in Aviation |
| AVIA 151 | Helicopter Pilot Ground School |
| AVIA 228 | Group Dynamics II |
| AVIM 101G | General Aviation Technology Theory I |
| AVIM 101H | General Aviation Technology Theory II |
| AVIM 102G | General Aviation Maintenance Technology Practices I |
| AVIM 102H | General Aviation Maintenance Technology Practices II |
| AVIM 103B | Aircraft Welding and Sheetmetal Structures |
| AVIM 103D | Aircraft Landing Gear Systems |
| AVIM 104B | Applied Aircraft Welding and Sheetmetal Structures |
| AVIM 104D | Applied Aircraft Landing Gear Systems |
| AVIM 105A | Aircraft Cabin Atmosphere Control |
| AVIM 106A | Aircraft Cabin Atmosphere Control |
| AVIM 107B | Turbine Engines |
| AVIM 108B | Turbine Engines Laboratory |
| AVIM 109A | Airframe Electrical Systems |
| AVIM 109B | Powerplant Ignition Systems |
| AVIM 109D | Aircraft Fire Protection and Digital Logic |
| AVIM 110A | Applied Airframe Electrical Systems |
| AVIM 111C | Reciprocating Engines I |
| AVIM 111D | Reciprocating Engines II |
| AVIM 112C | Applied Reciprocating Engines I |
| AVIM 112D | Applied Reciprocating Engines II |
| AVIM 120 | Basic D.C. Electronics Theory |
| AVIM 121A | Applied Basic D.C. Electronics |
| AVIM 249 | Induction and Fuel Metering |
| BIOL 131 | Introduction to Biotechnology |
| BIOL 132 | Applied Biotechnology I |
| BIOL 133 | Applied Biotechnology II |
| BIOL 134 | Introduction to the Biotechnology Lab |
| CBTE 101 | Keyboarding for Computers |

| | |
|-----------|---|
| CBTE 114 | Introduction to Microsoft Windows |
| CBTE 120 | Beginning Microsoft Word |
| CBTE 122 | Intermediate Microsoft Word |
| CBTE 127 | Introduction to PowerPoint |
| CBTE 128 | Comprehensive Presentations with Powerpoint |
| CBTE 140 | Microsoft Excel |
| CBTE 153 | Database Development with Access |
| CBTE 162 | Web Page Creation |
| CBTE 165 | Webpage Creation with Dreamweaver |
| CBTE 170 | Desktop Publishing |
| CBTE 180 | Microsoft Office |
| DIES 100 | Introduction to Diesel Technology |
| DIES 121 | Diesel Engines A or |
| DIES 122 | Diesel Engines B or |
| DIES 124 | Diesel Engines D |
| DIES 135 | Applied Failure Analysis |
| DIES 144 | Electronics for Diesel Technology |
| DIES 160 | Heavy Duty Manual Transmissions |
| DIES 170 | Truck Drive Axles and Specifications |
| EMGM 105A | Emergency Medical Technician-National Registry |
| EMGM 106 | Emergency Medical Technician-Defibrillation/Combitude |
| FIPT 150A | Introduction to Fire Suppression and Maintenance Manipulative Tasks (Beginning) |
| FIPT 101 | Fire Protection Organization |
| FIPT 102 | Fire Prevention Technology |
| FIPT 103 | Fire Protection Equipment and Systems |
| FIPT 104 | Building Construction for Fire Protection |
| FIPT 105 | Fire Behavior and Combustion |
| FIPT 106 | Truck Company Operations |
| FIPT 107 | Fire Fighting Tactics and Strategy |
| FIPT 109 | Fire Service Hydraulics |
| FIPT 110 | Wildland Fire Control |
| FIPT 160 | Introduction to Open Water Lifeguarding |
| MLTT 201 | Clinical Chemistry and Urinalysis |
| MLTT 202 | Clinical Hematology and Immunology |
| MLTT 203 | Clinical Microbiology |

0.5 - 17

Total Units = 18

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.

- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Associate in Arts Degree: Selected Studies

Designed for students who are interested in a program of studies that will allow them to attain educational or career goals that are not satisfied by associate degrees offered in Degree Curricula and Certificate Programs listed in this catalog.

Courses Required for the Major:

The student must earn a minimum of 18 required semester units in a single discipline or related disciplines. The approved course of study represents a cohesive and rigorous program of instruction related to a specific goal not met by other Programs of Instruction as found in this catalog. The student and a counselor will develop a Selected Studies program to be submitted to an academic standards committee for review and approval. The student is encouraged to meet with the counselor early in his or her educational career to review the student's statement of justification for the Associate in Arts Degree: Selected Studies and to develop an education plan.

Only one course from the approved pattern for the Selected Studies major may be used to satisfy SDCCD general education requirements. Students must fulfill additional requirements for the Associate Degree as listed in this catalog.

For graduation requirements see **Associate Degree Requirements** on page 70. Electives as needed to meet minimum of 60 units required for the degree:

Recommended Electives: Electives are particularly important in this program. They may be used by the student to strengthen the major, explore new fields of interest, and satisfy graduation requirements at a four-year institution.

The student who plans carefully may fulfill the requirements for the A.A. Degree and also complete most lower division requirements at the four-year institution of his/her choice in the major area and in general education. See generalized guide for transfer students located in this catalog.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Legal Assistant

See "Paralegal" on page 192.

Mathematics

| Award Type | Units |
|----------------------------------|-------|
| Associate in Arts Degree: | |
| Mathematics Studies | 18* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

Mathematics is the study of numbers, structures, and associated relationships using rigorously defined literal, numerical and operational symbols. Given certain conditions about systems of numbers or other objects, mathematicians derive conclusions based on logical arguments. Basic mathematical skills enable a person to solve numerical problems

encountered in daily life, and more advanced skills have numerous applications in the physical, social and life sciences.

Program Learning Outcomes

The mathematics curriculum includes courses that range from basic skills through differential equations. The basic skills and associate degree level courses provide students with the mathematical preparation necessary for study in other disciplines, as well as for degree and transfer requirements. Successful completion of this curriculum a mathematics degree will develop competence in mathematics through differential and integral calculus, providing an adequate background for employment in many technological and scientific areas as well as providing a firm foundation for students planning advanced study in mathematics, engineering, or physical sciences.

Student Learning Outcomes

Students who complete the Mathematics Program will be able to:

- Demonstrate ability to apply mathematical skills to achieve academic and professional goals
- Demonstrate an ability to apply critical thinking in problem solving
- Demonstrate sufficient mathematical knowledge for further academic study in mathematics or related disciplines
- Demonstrate ability to analyze and solve mathematical problems in everyday life

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone/Email |
|------------------|---------------|------------------------------------|
| Francois Bereaud | M-211I | 619-388-7503 fbereaud@sdccd.edu |
| Julia Gordon | M-211F | 619-388-7690 jgordon@sdccd.edu |
| Wayne Sherman | M-211H | 619-388-7689 wsherman@sdccd.edu |
| Harvey Wilensky | M-211E | 619-388-7510 hwilesnk@sdccd.edu |

Career Options

Most of these occupations require education beyond the associate degree, and some may

require a graduate degree. The following list is not intended as a comprehensive list of career options in mathematics: actuary, appraiser, assessor, auditor, biometrician, budget analyst, controller, computer analyst, computer programmer, demographer, econometrician, engineering analyst, epidemiologist, financial analyst, investment analyst, management scientist, operations researcher, research mathematician, statistician, surveyor, systems analyst, teacher, technical writer, and urban planner.

Transfer Information

Common university majors related to the field of Mathematics include: Applied Mathematics, Cognitive Science, Mathematics, Statistics.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Arts degree with an area of emphasis in Mathematics Studies (see below). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Associate in Arts Degree: Mathematics Studies

The Associate in Arts degree with an area of emphasis in Mathematics Studies is intended for students who plan to complete a bachelor's degree at a transfer institution in a mathematics-related major. Common university majors in this field include: Applied Mathematics, Cognitive Science, Computer Science, Information Systems, Mathematics, Mathematics Education, and Statistics.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

| Courses Required for the Major: | | Units |
|--|-------------------------------------|--------------|
| MATH 150 | Calculus with Analytic Geometry I | 5 |
| MATH 151 | Calculus with Analytic Geometry II | 4 |
| MATH 252 | Calculus with Analytic Geometry III | 4 |

Select at least five units from the following:

| | | |
|-----------|--|--|
| ACCT 116A | Financial Accounting | |
| ACCT 116B | Managerial Accounting | |
| BIOL 210A | Introduction to the Biological Sciences I | |
| BIOL 210B | Introduction to the Biological Sciences II | |
| CHEM 200 | General Chemistry I - Lecture | |
| CHEM 200L | General Chemistry I - Laboratory | |
| CISC 181 | Principles of Information Systems | |
| CISC 186 | Visual Basic Programming | |
| CISC 189A | Introduction to Programming I | |
| CISC 189B | Introduction to Programming II | |
| CISC 190 | Java Programming | |
| CISC 192 | C/C++ Programming | |
| CISC 205 | Object Oriented Programming Using C++ | |
| CISC 210 | System Analysis and Design | |
| ECON 120 | Principles of Macroeconomics | |
| ECON 121 | Principles of Microeconomics | |
| GEOL 100 | Physical Geology | |
| GEOL 101 | General Geology Laboratory | |
| MATH 119 | Elementary Statistics | |
| MATH 245 | Discrete Mathematics | |
| MATH 254 | Introduction to Linear Algebra | |
| MATH 255 | Differential Equations | |
| PHIL 100 | Logic and Critical Thinking | |
| PHIL 101 | Symbolic Logic | |
| PHYN 100 | Survey of Physical Science | |
| PHYS 195 | Mechanics | |
| PHYS 196 | Electricity and Magnetism | |
| PHYS 197 | Waves, Optics, and Modern Physics | |
| PSYC 101 | General Psychology | |
| PSYC 258 | Behavioral Science Statistics | |
| SOCO 101 | Principles of Sociology | |

5

Total Units = 18

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.

- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Medical Laboratory Technology

| Award Type | Units |
|--|--------------|
| Certificate of Performance: | |
| Medical Laboratory Technician Training | 12-13 |
| Certificate of Achievement: | |
| Medical Laboratory Technology | 20-21 |
| Associate in Science Degree: | |
| Medical Laboratory Technology | 20-21* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

The Medical Laboratory Technology (MLT) program prepares students for employment in clinical

laboratories, industry and biotechnology as a Medical Laboratory Technician. The program curriculum integrates basic concepts, technical procedures, and laboratory exercises prior to clinical education at a affiliate site. This provides practical experience for students to master the competencies, skills, and knowledge required in this profession.

Note: This is currently a grant-funded program with enrollment restrictions. Visit website for more information: www.sdmiramar.edu/instruction/mltt.

Program Goals

The MLT program is designed to produce trained employees to enter the medical laboratory workforce. As such, the program's primary learning outcome is to graduate competent, workplace-ready members of the health care team who

- Exhibit theoretical comprehension and competence in all MLT courses by passing comprehensive college and certification exams.
- Demonstrate entry-level MLT skills in the following clinical laboratory areas: Clinical Chemistry, Hematology, Urinalysis and coagulation, Immunology and Immunochemistry, and Microbiology.
- Demonstrate professionalism and awareness of their role in the delivery of health care to patients, such as respecting the rights of patients, colleagues and other health professionals as they perform duties within the constraints of legal, moral and ethical conduct.
- Exhibit positive attitudes in the areas of professionalism and commitment to delivering excellent health care.

Career Options

The MLT program is designed to educate and prepare students to sit for a national exam, which when passed will allow for immediate entry into a clinical lab environment as a Medical Laboratory Technician. The types of clinical labs include community-based hospital labs, teaching hospitals, private hospitals and clinics, and Clinical Research Organization (CRO) support services.

Award Notes

The student will be required to complete a series of biology and chemistry prerequisites for the MLT program. Please consult the catalog and counselors for more information.

Certificate of Performance: Medical Laboratory Technician Training*

The Certificate of Performance in Medical Laboratory Technician Training is designed to enhance or develop the skill sets of the medical laboratory technician or those seeking employment in the field of medical laboratory technology.

| Courses: | | Units |
|-----------------|------------------------------------|----------------------------|
| MLTT 201 | Clinical Chemistry and Urinalysis | 4 |
| MLTT 202 | Clinical Hematology and Immunology | 4 |
| MLTT 203 | Clinical Microbiology | 4 |
| or | | |
| BIOL 205 | General Microbiology | 5 |
| | | Total Units = 12-13 |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

Certificate of Achievement: Medical Laboratory Technology

| Courses Required for the Major: | | Units |
|--|--|----------------------------|
| MLTT 201 | Clinical Chemistry and Urinalysis | 4 |
| MLTT 202 | Clinical Hematology and Immunology | 4 |
| MLTT 203 | Clinical Microbiology | 4 |
| or | | |
| BIOL 205 | General Microbiology | 5 |
| MLTT 51 | Directed Clinical Practice in Clinical Chemistry | 2 |
| MLTT 52 | Directed Clinical Practice in Clinical Hematology Urinalysis and Coagulation | 2 |
| MLTT 53 | Directed Clinical Practice in Clinical Immunology and Immunochemistry | 2 |
| MLTT 54 | Directed Clinical Practice in Clinical Microbiology | 2 |
| | | Total Units = 20-21 |

Associate in Science: Medical Laboratory Technology

| Courses Required for the Major: | | Units |
|--|------------------------------------|--------------|
| MLTT 201 | Clinical Chemistry and Urinalysis | 4 |
| MLTT 202 | Clinical Hematology and Immunology | 4 |

| | | |
|----------------------------|--|---|
| MLTT 203 | Clinical Microbiology or | 4 |
| BIOL 205 | General Microbiology | 5 |
| MLTT 51 | Directed Clinical Practice in Clinical Chemistry | 2 |
| MLTT 52 | Directed Clinical Practice in Clinical Hematology Urinalysis and Coagulation | 2 |
| MLTT 53 | Directed Clinical Practice in Clinical Immunology and Immunochemistry | 2 |
| MLTT 54 | Directed Clinical Practice in Clinical Microbiology | 2 |
| Total Units = 20-21 | | |

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Military Studies

| Award Type | Units |
|--|--------|
| Certificate of Achievement: | |
| Military Leadership | 18-19 |
| Associate in Science Degree: | |
| Military Leadership | 18-19* |
| Occupational/Technical Studies (see 182) | 18* |
| * and electives as needed to meet minimum of 60 units required for the degree. | |

Description

The Military Studies program provides an interdisciplinary foundation in leadership and management skills with a focus on application to the U.S. military. It is intended primarily for

active duty, reserve, or National Guard military personnel seeking leadership skills applicable at the Senior Noncommissioned Officer (E-6 to E-9), Warrant Officer (W-1 to W-5), or Company Grade / Junior Officer (O-1 to O-3) levels. The program may also be useful preparation for students seeking supervisory or management positions in public service, security, aviation, or maritime career fields, or for those seeking a commission through the Reserve Officer Training Corps or other university-affiliated commissioning program. All of the courses in the major are transferable to the California State University (CSU) system and some fulfill lower division university transfer or graduation requirements.

Program Goals

Upon successful completion of this program, students can:

- Apply principles of leadership, ethics, and law to common decisions made by military leaders.
- Assess the effectiveness of leadership traits, skills, styles, and processes that have been applied to real-world leadership situations.
- Analyze the structure, role, and function of the U.S. military in relation to the U.S. Constitution and other components of the U.S. government.
- Read, analyze, discuss, evaluate, and write critically about topics related to military leadership.

Career Options

This program is primarily intended to prepare students for career advancement in the active duty, reserve, or National Guard military services. Some examples of career options include:

- Senior Noncommissioned Officer (E-6 to E-9)
- Warrant Officer (W-1 to W-5)
- Department of Defense civilian supervisor
- Military contractor
- Public service manager

Program Learning Outcomes

The Military Leadership program provides a broad, interdisciplinary foundation in leadership and management skills with a focus on application to the U.S. military. Students gain knowledge and skills in the following areas:

- The structure, organization, and practices of the U.S. military
- Leadership theory and application
- Military law and ethics
- Analytical reading, research, and writing
- The U.S. Constitution, political system, and governmental institutions

In addition, students complete a course relevant to the application of leadership principles (such as team dynamics, supervision, or management) and a capstone educational experience.

Student Learning Outcomes

Students who complete the Military Studies Program will be able to:

- Apply principles of leadership, ethics, and law to common decisions made by military leaders.
- Assess the effectiveness of leadership traits, skills, styles, and processes that have been applied to real-world leadership situations.
- Analyze the structure, role, and function of the U.S. military in relation to the U.S. Constitution and other components of the U.S. government.
- Read, analyze, discuss, evaluate, and write critically about topics related to military leadership

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Science degree with an area of emphasis in Occupational/Technical Studies (see page 182). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Certificate of Achievement: Military Leadership

The Certificate of Achievement in Military Leadership provides a broad, interdisciplinary foundation in

leadership and management skills with a focus on application to the U.S. military (Army, Navy, Air Force, and Marine Corps). It is intended primarily for students seeking leadership skills applicable at the Senior Noncommissioned Officer (E-6 to E-9), Warrant Officer (W-1 to W-5), or Company Grade / Junior Officer (O-1 to O-3) levels. The program may also be useful preparation for students seeking supervisory or management positions in public service, security, aviation, or maritime career fields, or for those seeking a commission through the Reserve Officer Training Corps or other university-affiliated commissioning program. All of the courses in the major are transferable to the California State University (CSU) system, and some fulfill lower division university transfer or graduation requirements.

| Courses Required for the Major: | | Units |
|---|---|--------------|
| MILS 100 | Introduction to Military Science | 3 |
| MILS 110 | Leadership Theory and Practice | 3 |
| MILS 270 | Work Experience in Military Leadership | 3-4 |
| ENGL 101 | Reading and Composition or | |
| BUSE 119 | Business Communications | 3 |
| POLI 102 | The American Political System | 3 |
| Select three units from the following: | | |
| AVIA 128 | Group Dynamics for High Risk Teams | 3 |
| AVIA 228 | Group Dynamics II | 3 |
| BUSE 201 | Business Organization and Management | 3 |
| MILS 120 | Military Justice, Ethics, and the Law of Armed Conflict | 3 |
| SUPR 101 | Introduction to Supervision | 3 |
| SUPR 115 | Management and Organization for Supervisors | 3 |
| Total Units = 18-19 | | |

Note: SUPR 101 and SUPR 115 are offered at San Diego City College.

Associate in Science: Military Leadership

The Associate in Science in Military Leadership provides a broad, interdisciplinary foundation in leadership and management skills with a focus on application to the U.S. military (Army, Navy, Air Force, and Marine Corps). It is intended primarily for students seeking leadership skills applicable at the Senior Noncommissioned Officer (E-6 to E-9), Warrant Officer (W-1 to W-5), or Company Grade / Junior Officer (O-1 to O-3) levels. The program may also be useful preparation for students

seeking supervisory or management positions in public service, security, aviation, or maritime career fields, or for those seeking a commission through the Reserve Officer Training Corps or other university-affiliated commissioning program. All of the courses in the major are transferable to the California State University (CSU) system, and some fulfill lower division university transfer or graduation requirements.

| Courses Required for the Major: | | Units |
|--|--|--------------|
| MILS 100 | Introduction to Military Science | 3 |
| MILS 110 | Leadership Theory and Practice | 3 |
| MILS 270 | Work Experience in Military Leadership | 3-4 |
| ENGL 101 | Reading and Composition or | |
| BUSE 119 | Business Communications | 3 |
| POLI 102 | The American Political System | 3 |

Select three units from:

| | | |
|----------|---|---|
| AVIA 128 | Group Dynamics for High Risk Teams | 3 |
| AVIA 228 | Group Dynamics II | 3 |
| BUSE 201 | Business Organization and Management | 3 |
| MILS 120 | Military Justice, Ethics, and the Law of Armed Conflict | 3 |
| SUPR 101 | Introduction to Supervision | 3 |
| SUPR 115 | Management and Organization for Supervisors | 3 |

Recommended Communication and Analytical Thinking General Education Course:

| | | |
|----------|---|-----|
| CISC 181 | Principles of Information Systems or | |
| COMS 103 | Oral Communication or | |
| COMS 135 | Interpersonal Communication | 3-4 |

Recommended Natural Sciences General Education Course:

| | | |
|----------|------------------------------|---|
| GEOG 101 | Physical Geography or | |
| PHYN 120 | Physical Oceanography | 3 |

Recommended Humanities General Education Course:

| | | |
|----------|--|-----|
| ARAB 101 | First Course in Arabic or | |
| HUMA 106 | World Religions or | |
| SPAN 101 | First Course in Spanish or | |
| SPAN 215 | Spanish for Spanish Speakers I or | |
| TAGA 101 | First Course in Tagalog | 3-5 |

Recommended Social And Behavioral Sciences General Education Course:

| | | |
|-----------|--|--|
| BLAS 140A | History of the U.S., Black Perspectives or | |
| CHIC 141A | United States History from a Chicano Perspective or | |

| | | |
|-----------|--|--|
| HIST 109 | History of the United States I or | |
| HIST 115A | History of the Americas I or | |
| HIST 141 | Women in United States History I or | |
| HIST 150 | Native Americans in United States History | |

3

Total Units = 18-19

Note: SUPR 101 and SUPR 115 are offered at San Diego City College.

For graduation requirements see **Associate Degree Requirements** on page 70.

Electives as needed to meet minimum of 60 units required for the degree.

Recommended Electives: Communications Studies 180; Geography 102, 104; History 130; Political Science 140; Sociology 223.

Music

| Award Type | Units |
|-------------------|--------------|
|-------------------|--------------|

| | |
|--|----|
| Certificate of Performance: Music Production and Engineering | 15 |
|--|----|

| | |
|---|-----|
| Associate in Arts Degree: Music Studies | 18* |
|---|-----|

* and electives as needed to meet minimum of 60 units required for the degree.

Description

The academic program in Music Production and Engineering has been designed to provide students with the basic skills for engineering, recording, mixing and producing music for various music and audio industry recording fields. The program also provides students with skills in basic musicianship, theory, ear training and music business.

Program Learning Outcomes

While the music curriculum is small, it offers course work that meets the humanities requirement for general education for both the associate degree and baccalaureate degrees. In addition, students can pursue the development of skills in basic musicianship and electronic music.

Student Learning Outcomes

Students who complete the Music Program will be able to:

- Conduct an in depth analysis of contemporary music identifying genres from different periods as well as an analysis of music from historical and theoretical perspectives.
- Summarize societal issues associated with the production, dissemination, celebration and consumption of Music.
- Describe the relationship between technology using the technological tools applicable as it relates to music.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone |
|----------------|--------|--------------|
| Channing Booth | H-216A | 619-388-7511 |
| Mark Hertica | H-215A | 619-388-7531 |

Program Emphasis

The Music Production and Engineering Program prepares students for work in the music and audio recording and production industries. This program enables students to earn an Associate Degree and have the qualified skills necessary to find employment upon completion.

Career Options

Examples of entry level employment options after successful completion of the program include: recording, mixing, composition, and/or production of music for music CDs, film, video, music videos, jingles, radio, television and multimedia projects. Other career options include audio visual technician, home theater audio consultant, designer and/or installer. This program also serves as a base for further education leading to careers such as digital audio technician, recording studio engineer, producer, sound re-enforcement engineer, synthesizer programmer, and retail music equipment sales.

Transfer Information

Common university majors related to the field of Music include: Creative Studies, Music, Music Business, Music Education, Music Performance, Musical Theater.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a

counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Arts degree with an area of emphasis in Music Studies (see below). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Certificate of Performance: Music Production and Engineering*

The Certificate of Performance in Music Production and Engineering prepares students with a solid foundation in digital recording, mixing and mastering musical projects using state-of-the-art software and plug-ins. Students produce musical projects using Musical Instrument Digital Interface (MIDI) sequencing, as well as music for multimedia projects, film and video.

| Courses: | Units |
|--|-------|
| MUSI 190 The Electronic Music Studio | 3 |
| MUSI 201 Recording Arts | 3 |
| MUSI 202 Computer Music | 3 |
| MUSI 205A Projects in Electronic Music | 3 |
| MUSI 205B Projects in Electronic Music | 3 |
| Total Units = 15 | |

*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

The Certificate of Performance in Music Production and Engineering includes only the core technology courses excluding the fundamental music skills courses and general education courses of the higher level programs.

Associate in Arts: Music Studies

The Associate in Arts degree with an area of emphasis in Music Studies is intended for students who plan to complete a bachelor's degree at a transfer institution in music-related major. Common university majors in this field include: Creative Arts, Music, Music Business, Music Education, and Music Performance.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

| Courses Required for the Major: | | Units |
|--|-----------------------|--------------|
| MUSI 100 | Introduction to Music | 3 |

Select at least 15 units, including at least two MUSI courses, from the following:

| | | |
|-----------|--|-----|
| BUSE 140 | Business Law and the Legal Environment | 3 |
| ENGL 105 | Composition and Literature | 3 |
| ENGL 205 | Critical Thinking and Intermediate Composition | 3 |
| MUSI 108 | The Business of Music | 3 |
| MUSI 109 | World Music | 3 |
| MUSI 110 | Music for Elementary School Teachers | 3 |
| MUSI 111 | Jazz - History and Development | 3 |
| MUSI 120 | Beginning Voice Class | 2 |
| MUSI 132A | Classical Guitar I | 1 |
| MUSI 132B | Classical Guitar II | 1 |
| MUSI 150A | Basic Musicianship | 3 |
| MUSI 158A | Music Theory I | 4 |
| MUSI 190 | The Electronic Music Studio | 3 |
| MUSI 201 | Recording Arts | 3 |
| MUSI 202 | Computer Music | 3 |
| MUSI 252 | Concert Jazz Band | 1-3 |
| MUSI 268A | Beginning Ear Training Laboratory I | 1 |
| PSYC 101 | General Psychology | 3 |

Total Units = 18

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option

should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Occupational/Technical Studies

See "Interdisciplinary Studies" on page 178.

Paralegal

Legal Assistant

| Award Type | Units |
|--|--------------|
| Certificate of Achievement: | |
| Paralegal | 30-36 |
| Associate in Science Degree: | |
| Paralegal | 30-36* |
| Occupational/Technical Studies (see page 182) | 18* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

Approved by the American Bar Association (ABA), the Paralegal program provides professional training with an emphasis on occupational competency. According to the ABA, "A legal assistant or paralegal is a person, qualified by education, training or work

experience who is employed or retained by a lawyer, law office, corporation, governmental agency or other entity and who performs specifically delegated substantive legal work for which a lawyer is responsible.” Paralegals adhere to recognized ethical standards and rules of professional responsibility.

CAMPUS RESIDENCY REQUIREMENTS:

The Paralegal Program has been extremely cautious in its acceptance of transfer specialty credit from other institutions. **All students must complete 18 units of paralegal major on Miramar’s campus.** Accredited institutions that are ABA approved may transfer up to 12 credits toward their major. Legal courses taken more than 5 years ago may not meet the current curriculum requirements and/or the current laws and procedures and thus may not be accepted as credit towards the major.

Program Goals

The Paralegal program provides students with a post-secondary level of education that will prepare them for transfer to a four-year university. It also provides students with the practical training they need to be employed or retained as a paralegal by an attorney, law office, governmental agency, or other entity in the private or public sectors throughout the various jurisdictions in the United States.

Program Emphasis

The Paralegal program offers both an Associate in Science degree and a Certificate of Achievement in compliance with the American Bar Association (ABA).

Career Options

Paralegal.

Objectives of Program

To provide students with a post-secondary level of education which will prepare them for transfer to a 4 year university to continue their studies [and]

To provide practical occupational training to students to be employed or retained as a paralegal professional by an attorney, law office, governmental agency, or other entity in the private or public sectors throughout the various jurisdictions in the United States.

Student Learning Outcomes

Students who complete the Paralegal Program will be able to:

- Recognize ethical issues that arise in a legal work environment and apply rules of professional conduct to resolve them;
- Perform the duties of an entry level paralegal in a law firm or other legal work setting;
- Demonstrate written skills that paralegals use on the job;
- Apply basic principles of legal analysis;
- Use computers and other technology for document production, law office management, and trial preparation;
- Perform legal research using both printed and electronic sources.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

Program Director

The Program Director’s office is located in M-107Q. Any questions regarding program contact Program Director:

P. Darrel Harrison M-107-Q 619-388 7892
dharriso@sdccd.edu

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Science degree with an area of emphasis in Occupational/Technical Studies (see page 182). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Certificate of Achievement: Paralegal

This option is available only to students entering the program who have completed all general education core requirements through coursework received by either an Associates in Arts degree or a Bachelor’s degree. The Certificate of Achievement as a Paralegal requires completion of the (18 units) required core

courses, (12 units) legal specialty elective courses or (up to 6 units) approved law related courses totaling 30 units.

| Courses required for the Major: | | Units |
|--|--------------------------------|--------------|
| LEGL 100A | Introduction to Paralegalism | 1 |
| LEGL 100B | Legal Procedures | 2 |
| LEGL 105 | Legal Research | 3 |
| LEGL 110 | Legal Writing & Communications | 3 |
| LEGL 115 | Civil Litigation - Procedures | 3 |
| LEGL 120 | Tort Law | 3 |
| LEGL 180 | Contract Law | 3 |

Select 12 units from the following legal elective courses:

| | | |
|----------|---|---------|
| LEGL 106 | Computer Assisted Legal Research (CALR) | 1 |
| LEGL 140 | Law Office Management and Technology | 3 |
| LEGL 145 | Federal Court Practices and Procedures | 3 |
| LEGL 150 | Criminal Litigation and Procedure | 3 |
| LEGL 155 | Employment Law | 3 |
| LEGL 160 | Bankruptcy Law | 3 |
| LEGL 165 | Family Law | 3 |
| LEGL 170 | Corporate Law | 3 |
| LEGL 175 | Estates, Trusts, and Wills | 3 |
| LEGL 200 | Elder Law | 3 |
| LEGL 205 | Environmental Law | 3 |
| LEGL 210 | Immigration Law | 3 |
| LEGL 270 | Paralegal Internship / Work Experience | 1-4 |
| LEGL 296 | Individualized Instruction in Legal Assistant | 0.5 - 2 |

A maximum of 6 units from the following law-related courses may be substituted for legal elective courses:

| | | |
|-----------------------|--|---|
| ADJU 102 | Criminal Law I | 1 |
| ADJU 160 | Criminal Law II | 3 |
| ADJU 230 | Constitutional Law I | 3 |
| BUSE 140 | Business Law and the Legal Environment | 3 |
| REAL 105 | Legal Aspects of Real Estate I | 3 |
| LABR 112 ¹ | California Workers Compensation | 3 |
| ACCT 116A | Financial Accounting | 4 |
| ACCT 120 | Federal Income Tax | 3 |

¹Labor Studies 112 is offered only at City College.

Total Units = 30

Associate in Science Degree: Paralegal

In addition to the 30 units of general education and graduation requirements listed in this catalog, the

Associate in Science degree as a Paralegal requires completion of the core courses (18 units) and legal elective courses (12 units) for a total of 60 units. Up to 6 units of approved law-related courses may be substituted for legal electives.

| Courses Required for the Major: | | Units |
|--|--------------------------------|--------------|
| LEGL 100A | Introduction to Paralegalism | 1 |
| LEGL 100B | Legal Procedures | 2 |
| LEGL 105 | Legal Research | 3 |
| LEGL 110 | Legal Writing & Communications | 3 |
| LEGL 115 | Civil Litigation - Procedures | 3 |
| LEGL 120 | Tort Law | 3 |
| LEGL 180 | Contract Law | 3 |

Select 12 units from the following legal elective courses:

| | | |
|----------|---|---------|
| LEGL 106 | Computer Assisted Legal Research (CALR) | 1 |
| LEGL 140 | Law Office Management and Technology | 3 |
| LEGL 145 | Federal Court Practices and Procedures | 3 |
| LEGL 150 | Criminal Litigation and Procedure | 3 |
| LEGL 155 | Employment Law | 3 |
| LEGL 160 | Bankruptcy Law | 3 |
| LEGL 165 | Family Law | 3 |
| LEGL 170 | Corporate Law | 3 |
| LEGL 175 | Estates, Trusts, and Wills | 3 |
| LEGL 200 | Elder Law | 3 |
| LEGL 205 | Environmental Law | 3 |
| LEGL 210 | Immigration Law | 3 |
| LEGL 270 | Paralegal Internship / Work Experience | 1-4 |
| LEGL 296 | Individualized Instruction in Legal Assistant | 0.5 - 2 |

A maximum of 6 units from the following law-related courses may be substituted for legal elective courses:

| | | |
|-----------------------|--|---|
| ADJU 102 | Criminal Law I | 1 |
| ADJU 160 | Criminal Law II | 3 |
| ADJU 230 | Constitutional Law I | 3 |
| BUSE 140 | Business Law and the Legal Environment | 3 |
| REAL 105 | Legal Aspects of Real Estate I | 3 |
| LABR 112 ¹ | California Workers Compensation | 3 |
| ACCT 116A | Financial Accounting | 4 |
| ACCT 120 | Federal Income Tax | 3 |

¹Labor Studies 112 is offered only at City College.

Total Units = 30

Other law-related classes may be accepted or substituted by petition or course substitution.

Additional general education and graduation requirements for the associate degree are listed in the Academic Requirements section of catalog. **The associate degree requires a minimum of 60 units.**

Physical Education

See "Exercise Science" on page 170.

Physical Science

| Award Type | Units |
|-------------------------------------|-------|
| Associate in Science Degree: | |
| Earth Science Studies | 18* |
| Physics Studies | 19* |
| Pre-Engineering Studies | 18* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

Physical Science is the study of the physical environment, material things, matter, and energy. Students learn the principles that form the foundations of non-living systems and gain an understanding and appreciation of the methodologies of science as investigative tools.

The Physical Science program is designed to prepare students to transfer to a four-year university in a physical science-related discipline.

Program Level Student Learning Outcomes

Students who complete the Physical Science Program will be able to:

- Identify connections between scientific theory and observations
- Solve problems related to concepts in the physical sciences
- Visualize important features of a given physical phenomenon
- Interpret scientific results collected by others and/or assess the validity of results collected in a physical science laboratory

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone |
|-------------------|--------|------------------------------------|
| Regina Bochicchio | M-211M | 619-388-7496 gbochicc@sdccd.edu |
| Sadayoshi Okumoto | M-211O | 619-388-7540 sokumoto@sdccd.edu |

Career Options

Careers related to this discipline typically require education beyond the associate degree level.

Transfer Information

Common university majors related to the field of Physical Science include: Astronomy, Astrophysics, Biophysics, Chemical Physics, Earth Sciences, Engineering Physics, Environmental Sciences, Geographic Information Science, Geology, Hydrologic Sciences, Meteorology, Natural Sciences, Oceanography, Physical Geography, Physical Sciences, Physics.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Science degree with an area of emphasis in Earth Science Studies or Physics Studies (see below). These degrees are designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Associate in Science: Earth Science Studies

The Associate in Science degree with an area of emphasis in Earth Science Studies is intended for students who plan to complete a bachelor's degree at a transfer institution in a physical or earth science-related major. Common university majors in this field include: Earth Sciences, Environmental Sciences, Geographic Information Science, Geology, Hydrologic Sciences, Meteorology, Natural Sciences, Oceanography, Physical Geography, and Physical Sciences.

This degree is designed to accommodate the differing requirements of a wide variety of transfer

institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

| Courses Required for the Major: | | Units |
|--|----------------------------------|--------------|
| CHEM 200 | General Chemistry I - Lecture | 3 |
| CHEM 200L | General Chemistry I - Laboratory | 2 |
| PHYS 125 | General Physics or | |
| PHYS 195 | Mechanics | 5 |

Select at least eight units from the following:

| | | |
|-----------|--|--|
| ASTR 101 | Descriptive Astronomy | |
| ASTR 111 | Astronomy Laboratory | |
| BIOL 107 | General Biology-Lecture and Laboratory | |
| BIOL 210A | Introduction to the Biological Sciences I | |
| BIOL 210B | Introduction to the Biological Sciences II | |
| BIOL 215 | Introduction to Zoology | |
| BIOL 250 | Introduction to Botany | |
| CHEM 201 | General Chemistry II - Lecture | |
| CHEM 201L | General Chemistry II - Laboratory | |
| CHEM 231 | Organic Chemistry I - Lecture | |
| CHEM 231L | Organic Chemistry I - Laboratory | |
| CISC 186 | Visual Basic Programming | |
| CISC 189A | Introduction to Programming I | |
| CISC 189B | Introduction to Programming II | |
| CISC 190 | Java Programming | |
| COMS 103 | Oral Communication | |
| ECON 121 | Principles of Microeconomics | |
| GEOG 101 | Physical Geography | |
| GEOG 101L | Physical Geography Laboratory | |
| GEOG 102 | Cultural Geography | |
| GEOL 100 | Physical Geology | |
| GEOL 101 | General Geology Laboratory | |
| GEOL 104 | Earth Science | |
| MATH 116 | College and Matrix Algebra | |
| MATH 119 | Elementary Statistics | |
| MATH 121 | Basic Techniques of Applied Calculus I | |
| MATH 122 | Basic Techniques of Applied Calculus II | |
| MATH 141 | Precalculus | |
| MATH 150 | Calculus with Analytic Geometry I | |
| MATH 151 | Calculus with Analytic Geometry II | |
| PHYN 100 | Survey of Physical Science | |
| PHYN 101 | Survey of Physical Science Laboratory | |
| PHYN 120 | Physical Oceanography | |
| PHYS 126 | General Physics II | |
| PHYS 196 | Electricity and Magnetism | |
| PHYS 197 | Waves, Optics, and Modern Physics | |
| PSYC 258 | Behavioral Science Statistics | |

8

Total Units = 18

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Associate in Science: Physics Studies

The Associate in Science degree with an area of emphasis in Physics Studies is intended for students who plan to complete a bachelor's degree at a transfer institution in a physics-related major. Common university majors in this field include: Astronomy, Astrophysics, Biophysics, Chemical Physics, Engineering Physics, and Physics.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, additional elective courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

| Courses Required for the Major: | | Units |
|--|------------------------------------|--------------|
| MATH 150 | Calculus with Analytic Geometry I | 5 |
| MATH 151 | Calculus with Analytic Geometry II | 4 |
| PHYS 195 | Mechanics | 5 |
| PHYS 196 | Electricity and Magnetism | 5 |

Total Units = 19

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

Electives as needed to meet minimum of 60 units required for the degree.

Associate in Science: Pre-Engineering Studies

The Associate in Science degree with an area of emphasis in Pre-Engineering Studies is intended for students who plan to complete a bachelor's degree at a transfer institution in an engineering-related major. Common university majors in this field include: Aerospace Engineering, Civil Engineering, Computer Engineering, Construction Engineering, Electrical Engineering, Engineering, Engineering Physics, Engineering Technology, Environmental Engineering, Industrial Engineering / Technology, Manufacturing Engineering, Materials Science, Mechanical Engineering, Nuclear Engineering, and Structural Engineering.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

| Courses Required for the Major: | Units |
|--|--------------|
| CHEM 200 General Chemistry I - Lecture | 3 |
| MATH 150 Calculus with Analytic Geometry I | 5 |

Select ten units from the following:

| |
|--------------------------------|
| ACCT 116A Financial Accounting |
|--------------------------------|

| | |
|-----------|--|
| BIOL 205 | General Microbiology |
| BIOL 210A | Introduction to the Biological Sciences I |
| BIOL 210B | Introduction to the Biological Sciences II |
| BIOL 215 | Introduction to Zoology |
| BIOL 250 | Introduction to Botany |
| BUSE 140 | Business Law and the Legal Environment |
| CHEM 130 | Introduction to Organic and Biological Chemistry |
| CHEM 200L | General Chemistry I - Laboratory |
| CHEM 201 | General Chemistry II - Lecture |
| CHEM 201L | General Chemistry II - Laboratory |
| CISC 189A | Introduction to Programming I |
| CISC 189B | Introduction to Programming II |
| CISC 190 | Java Programming |
| CISC 192 | C/C++ Programming |
| ECON 121 | Principles to Microeconomics |
| GEOL 100 | Physical Geology |
| GEOL 101 | General Geology Laboratory |
| MATH 119 | Elementary Statistics |
| MATH 151 | Calculus with Analytic Geometry II |
| MATH 245 | Discrete Mathematics |
| MATH 252 | Calculus with Analytic Geometry III |
| MATH 254 | Introduction to Linear Algebra |
| MATH 255 | Differential Equations |
| PHYS 125 | General Physics |
| PHYS 126 | General Physics II |
| PHYS 195 | Mechanics |
| PHYS 196 | Electricity and Magnetism |
| PHYS 197 | Waves, Optics, and Modern Physics |
| PSYC 258 | Behavioral Science Statistics |
| 10 | |

Total Units = 18

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the

appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Political Science

See "Social and Behavioral Sciences" on page 198.

Selected Studies

See "Interdisciplinary Studies" on page 178.

Social and Behavioral Sciences

| Award Type | Units |
|----------------------------------|-------|
| Associate in Arts Degree: | |
| Psychology | 18* |
| Sociology for Transfer** | 18* |
| Social and Behavioral Sciences | 18* |

* and electives as needed to meet minimum of 60 units required for the degree.

**Associate in Arts/Transfer. For more information, see page 70

Description

Social Science is a multidisciplinary field that encompasses the study of human behavior in social

settings. Students in these disciplines examine and analyze human societies; the institutions, organizations, and groups that comprise them; and the ways in which individuals and groups relate to one another. Students also develop an appreciation of the various approaches and methodologies used to study human social behavior. Social Science incorporates a variety of subject areas such as Anthropology, Ethnic Studies, Geography, History, Political Science, and Sociology.

Program Learning Outcomes

The Social and Behavioral Sciences program is designed to prepare students to transfer to a four-year university in a social science-related discipline.

Student Learning Outcomes

Students who complete the Social and Behavioral Sciences Program will be able to:

- Interpret and discuss classic and contemporary theories of society, groups, and individuals as they relate to the social and behavioral sciences.
- Apply critical thinking skills in discussing the interrelationship of anthropology, psychology, political science, economics, history, sociology and geography and the processes that influence one another.
- Interpret contemporary social and behavioral science problems and issues by applying the scientific method.
- Value the diversity of individuals and the role of cultural, ethnic, racial, and economic factors in explaining the attitudes and behaviors of individuals and groups within a society.

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone |
|-------------------|---------|--------------|
| Marilyn Espitia | H-110-F | 619-388-7504 |
| Parvine Ghaffari | H-110-N | 619-388-7507 |
| Laura Gonzalez | H-110-D | 619-388-7534 |
| Daniel Igou | H-110-C | 619-388-7646 |
| Kenneth McPherson | H-110-T | 619-388-7516 |
| Angela Romero | H-110-V | 619-388-7413 |
| Thomas Schilz | H-110-A | 619-388-7500 |

Career Options

Careers related to this field typically require education beyond the associate degree level.

Transfer Information

Common university majors related to the field of Social Science include: Anthropology, Archeology, Community Studies, Criminal Justice / Justice Studies, Developmental Studies, Ethnic Studies, Global Studies, Geography, Gerontology, History, International Relations, Law, Peace and Conflict Studies, Policy Analysis, Political Science, Public Administration, Social Ecology, Social Science, Sociology, Urban Studies, and Women's Studies.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this field should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Arts degree with an area of emphasis in Social and Behavioral Sciences (see below). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Associate in Arts: Psychology

The Associate in Arts degree with an area of emphasis in Psychology is intended for students who plan to complete a bachelor's degree at a transfer institution in a psychology-related major. Common university majors in this field include: Behavioral Science, Cognitive Science, Social Work, Psychobiology, and Psychology.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

| Courses Required for the Major: | Units |
|--|--------------|
| PSYC 101 General Psychology | 3 |

| | |
|--|---|
| MATH 119 Elementary Statistics or | |
| PSYC 258 Behavioral Science and Statistics | 3 |

Select twelve units from the following:

| | |
|---|--|
| ASTR 101 Descriptive Astronomy | |
| BIOL 107 General Biology - Lecture and Laboratory | |
| BIOL 130 Human Heredity | |
| BIOL 210A Introduction to the Biological Sciences I | |
| BIOL 210B Introduction to the Biological Sciences II | |
| BIOL 230 Human Anatomy | |
| CHEM 100 Fundamentals of Chemistry | |
| CHEM 100L Fundamentals of Chemistry Laboratory | |
| CHEM 130 Introduction to Organic and Biological Chemistry | |
| CHEM 130L Introduction to Organic and Biological Chemistry Laboratory | |
| CHEM 152 Introduction to General Chemistry | |
| CHEM 152L Introduction to General Chemistry Laboratory | |
| CISC 190 Java Programming | |
| CISC 192 C/C++ Programming | |
| ECON 120 Principles of Macroeconomics | |
| MATH 121 Basic Techniques of Applied Calculus I | |
| MATH 122 Basic Techniques of Applied Calculus II | |
| MATH 141 Precalculus | |
| MATH 150 Calculus with Analytic Geometry I | |
| MATH 151 Calculus with Analytic Geometry II | |
| MATH 252 Calculus with Analytic Geometry III | |
| PHIL 100 Logic and Critical Thinking | |
| PHIL 101 Symbolic Logic | |
| PHYS 125 General Physics | |
| PHYS 126 General Physics II | |
| PHYS 195 Mechanics | |
| PHYS 196 Electricity and Magnetism | |
| PHYS 197 Waves, Optics, and Modern Physics | |
| PSYC 121 Introduction to Child Psychology | |
| PSYC 123 Adolescent Psychology | |
| PSYC 133 Psychology of Women | |
| PSYC 135 Marriage and Family Relations | |
| PSYC 137 Human Sexual Behavior | |
| PSYC 155 Introduction to Personality | |
| PSYC 166 Introduction to Social Psychology | |
| PSYC 211 Learning | |
| PSYC 230 Psychology of Lifespan Development | |
| PSYC 245 Abnormal Psychology | |
| PSYC 255 Introduction to Psychological Research | |
| PSYC 260 Introduction to Physiological Psychology | |
| SOCO 101 Principles of Sociology | |

12

Total Units = 18

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Associate in Arts: Sociology for Transfer

This degree is accepted by some but not all CSU campuses.

The Associate in Arts in Sociology for Transfer is intended for students who plan to complete a bachelor's degree in Sociology or a related major

in the California State University (CSU) system. Students who complete this degree and transfer to a participating CSU campus will be required to complete no more than 60 units after transfer to earn a bachelor's degree. It may not be appropriate preparation for students transferring to a CSU campus that does not accept the degree. Students who plan to complete this degree should consult a counselor for additional information about participating CSU campuses as well as university admission, degree, and transfer requirements.

NOTE: Students intending to transfer to SDSU should consult a counselor and visit www.assist.org for guidance on appropriate transfer coursework.

| Courses Required for the Major: | | Units |
|---------------------------------|--|-------|
| SOCO 101 | Principles of Sociology* | 3 |
| SOCO 110 | Contemporary Social Problems* | 3 |
| MATH 119 | Elementary Statistics* or | |
| PSYC 258 | Behavioral Science and Statistics* | 3 |
| PSYC 166 | Introduction to Social Psychology* | 3 |
| PSYC 255 | Introduction to Psychological Research | 3 |

Select one of the following courses:

(It is recommended to select courses that meet lower division major preparation requirements for your transfer university)

| | | |
|----------|--|---|
| SOCO 201 | Advanced Principles of Sociology* | |
| SOCO 223 | Globalization and Social Change* | |
| ANTH 103 | Introduction to Cultural Anthropology* | |
| ENGL 205 | Critical Thinking* | |
| GEOG 102 | Cultural Geography* | |
| PHIL 100 | Logic and Critical Thinking* | |
| PSYC 101 | General Psychology* | |
| | | 3 |

Total Units = 18

* Course also fulfills general education requirements for the CSU GE or IGETC pattern.

General Education: In addition to the courses listed above, students must complete one of the following general education options:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 CSU-transferable units required for the degree.

Associate in Arts: Social and Behavioral Sciences

The Associate in Arts degree with an area of emphasis in Social and Behavioral Sciences is intended for students who plan to complete a bachelor's degree at a transfer institution in a social science-related major. Common university majors in this field include: Anthropology, Archeology, Community Studies, Criminal Justice / Justice Studies, Developmental Studies, Ethnic Studies, Global Studies, Geography, Gerontology, History, International Relations, Law, Peace and Conflict Studies, Policy Analysis, Political Science, Public Administration, Social Ecology, Social Science, Sociology, Urban Studies, and Women's Studies.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

Courses Required for the Major: **Units**

Select at least 12 units from the following social and behavioral sciences core courses:

| | |
|-----------|---|
| ADJU 101 | Introduction to Administration of Justice |
| ADJU 102 | Criminal Law I |
| ADJU 106 | Diversity and Community Relations |
| ADJU 162 | Criminal Investigation |
| ADJU 193 | Concepts of Criminal Law |
| ADJU 210 | Rules of Evidence |
| ADJU 230 | Constitutional Law I |
| ADJU 205 | Leadership Theory and Practice |
| ANTH 102 | Introduction to Physical Anthropology |
| ANTH 103 | Introduction to Cultural Anthropology |
| ANTH 104 | Laboratory in Anthropology |
| ANTH 107 | Introduction to Archaeology |
| BLAS 140A | History of the U.S., Black Perspectives |
| BLAS 140B | History of the U.S., Black Perspectives |
| ECON 120 | Principles of Macroeconomics |
| ECON 121 | Principles of Microeconomics |
| FILI 100 | Filipino American Experience |
| GEOG 101 | Physical Geography |

| | |
|-----------|---|
| GEOG 101L | Physical Geography Laboratory |
| GEOG 102 | Cultural Geography |
| GEOG 104 | World Regional Geography |
| HIST 100 | World History I |
| HIST 101 | World History II |
| HIST 105 | Introduction to Western Civilization I |
| HIST 106 | Introduction to Western Civilization II |
| HIST 109 | History of the United States I |
| HIST 110 | History of the United States II |
| HIST 120 | Introduction to Asian Civilization |
| HIST 121 | Asian Civilization in Modern Times |
| HIST 141 | Women in United States History I |
| HIST 142 | Women in United States History II |
| HIST 150 | Native Americans in United States History |
| HIST 151 | Native Americans in United States History |
| POLI 101 | Introduction to Political Science |
| POLI 102 | The American Political System |
| POLI 103 | Comparative Politics |
| POLI 140 | Contemporary International Politics |
| PSYC 101 | General Psychology |
| PSYC 133 | Psychology of Women |
| PSYC 135 | Marriage and Family Relations |
| PSYC 166 | Introduction to Social Psychology |
| PSYC 255 | Introduction to Psychological Research |
| PSYC 258 | Behavioral Science Statistics |
| SOCO 101 | Principle of Sociology |
| SOCO 110 | Contemporary Social Problems |
| SOCO 201 | Advanced Principles of Sociology |
| SOCO 223 | Globalization and Social Change |

12-17

Select at least one course and the remainder of units needed to meet the minimum of 18 from the following:

| | |
|-----------|--|
| ACCT 116A | Financial Accounting |
| BIOL 107 | General Biology - Lecture and Laboratory |
| BUSE 140 | Business Law and the Legal Environment |
| CBTE 120 | Beginning Microsoft Word |
| CBTE 127 | Introduction to PowerPoint |
| CBTE 140 | Microsoft Excel |
| CBTE 151 | Introduction to Microsoft Access |
| CBTE 161 | Learning the Internet |
| CBTE 162 | Web Page Creation |
| CHEM 100 | Fundamentals of Chemistry |
| CHEM 100L | Fundamentals of Chemistry Laboratory |
| CISC 181 | Principles of Information Systems |
| CISC 186 | Visual Basic Programming |
| CISC 189A | Introduction to Programming I |
| CISC 189B | Introduction to Programming II |
| CISC 190 | Java Programming |

| | |
|-----------|--|
| ENGL 105 | Composition and Literature |
| ENGL 205 | Critical Thinking and Intermediate Composition |
| ENGL 237 | Women in Literature |
| HUMA 106 | World Religions |
| LIBS 101 | Information Literacy and Research Skills |
| MATH 119 | Elementary Statistics |
| MATH 121 | Basic Techniques of Applied Calculus I |
| MATH 150 | Calculus with Analytic Geometry I |
| PHIL 100 | Logic and Critical Thinking |
| PHIL 101 | Symbolic Logic |
| PHIL 102B | Introduction to Philosophy: Values |
| PHIL 205 | Critical Thinking and Writing in Philosophy |
| PHYN 100 | Survey of Physical Science |

1-6

Total Units = 18

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
- The San Diego Community College District General Education pattern (page 76) may be appropriate for students transferring to a private/independent or out of state university or to a high-unit major. Students selecting this option should meet with a counselor to determine the appropriate General Education courses for their individual transfer goals.

It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-

division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**

Spanish

See "World Language Studies" on page 203.

Speech Communications

See "Communication Studies" on page 154.

Tagalog

See "World Language Studies" on page 203.

World Language Studies

| Award Type | Units |
|----------------------------------|--------------|
| Associate in Arts Degree: | |
| World Language Studies | 18* |

* and electives as needed to meet minimum of 60 units required for the degree.

Description

The study of world languages builds communication skills, provides exposure to the richness of cultural variety; meets baccalaureate degree language requirements; broadens career opportunities enriches global travel; provides personal enrichment, and prepares students for upper division work in a baccalaureate institution.

Program Learning Outcomes

Students develop skills of understanding, speaking, reading, and writing. They also become acquainted with the culture, literature, history and current events of foreign countries. The curriculum focuses on preparing students for transfer to baccalaureate institutions and for proficiency in several world languages in a variety of settings.

Student Learning Outcomes

Students who complete the World Language Studies Program will be able to:

- Demonstrate increased comprehension of the target language
- Utilize skills developed in class to produce the target language
- Demonstrate increased appreciation of the target language culture

Students will be assessed through a combination of performance evaluations, written assignments, and written tests and quizzes.

| Faculty | Office | Telephone |
|-----------------|---------|--------------|
| April Koch | H-110-K | 619-388-7537 |
| Virginia Naters | H-110-L | 619-388-7538 |

Career Options

Many students pursue an associate degree in world languages to add language skills in their field of work. Degrees beyond the associate level lead to careers such as: working in local and state agencies, multinational companies, international marketing and consulting firms, international banking, advertising, journalism, media and entertainment, travel and tourism, hotel and restaurant industries, and health care.

Transfer Information

Common university majors related to the field of world languages include: Comparative Literature, Foreign Languages (all), Regional Studies (all), World Languages, and World Literature.

Course Requirements for Transfer Students

Students who plan to transfer to a four-year college or university in this discipline should consult with a counselor or visit the Transfer Center to determine the appropriate major preparation courses for their specific transfer institution and major. Transfer students may also earn an Associate in Arts degree with an area of emphasis in World Language Studies (see below). This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options in order to provide the most efficient path to transfer. More information on transfer programs and procedures is available in the Transfer Guide section of the catalog.

Associate in Arts: World Language Studies

The Associate in Arts degree with an area of emphasis in World Language Studies is intended for students who plan to complete a bachelor's degree at a transfer institution in a world language-related major. Common university majors in this field include: Comparative Literature, Foreign Languages (all), Regional Studies (all), World Languages, and World Literature.

This degree is designed to accommodate the differing requirements of a wide variety of transfer institutions and major options. Because admission and major preparation requirements vary at each transfer institution, courses used to complete this degree should be selected with the assistance of a Miramar College counselor.

Courses Required for the Major: Units

Select one language course sequence:

ARAB 101 First Course in Arabic **and**

ARAB 102 Second Course in Arabic

or

SPAN 101 First Course in Spanish **and**

SPAN 102 Second Course in Spanish **and**

SPAN 201 Third Course in Spanish **and**

SPAN 202 Fourth Course in Spanish

or

SPAN 101 First Course in Spanish **and**

SPAN 102 Second Course in Spanish **and**

SPAN 215 Spanish for Spanish Speakers I **and**

SPAN 216 Spanish for Spanish Speakers II

or

TAGA 101 First Course in Tagalog **and**

TAGA 102 Second Course in Tagalog **and**

TAGA 201 Third Course in Tagalog

10-20*

Select the remainder of units needed to meet the minimum of 18 from the following:

ANTH 103 Introduction to Cultural Anthropology

ECON 120 Principles of Macroeconomics

ECON 121 Principles of Microeconomics

ENGL 208 Introduction to Literature

ENGL 220 Masterpiece of Literature I:
1500 BCE-1600 CE

ENGL 221 Masterpiece of Literature II:
1600 BCE-Present

ENGL 230 Asian American Literature

FILI 100 Filipino American Experience

GEOG 102 Cultural Geography

| | |
|----------|--|
| HIST 100 | World History I |
| HIST 101 | World History II |
| HIST 105 | Introduction to Western Civilization I |
| HIST 106 | Introduction to Western Civilization II |
| HIST 120 | Introduction to Asian Civilization |
| HIST 121 | Asian Civilization in Modern Times |
| POLI 101 | Introduction to Political Science |
| POLI 103 | Comparative Politics |
| SPAN 210 | Conversation and Composition Spanish I |
| SPAN 211 | Conversation and Composition Spanish II |

Total Units = 18

***NOTE:** Students who place out of one or more language courses through prerequisite challenge exams or other methods that do not bear college-level credit must fulfill the remainder of the 18 units required for the major through coursework taken from the list of restricted electives.

General Education: In addition to the courses listed above, students must complete one of the general education options listed on page 71:

- The IGETC pattern (page 93) is accepted by all CSU campuses and most UC campuses and majors. It is also accepted by some private/independent or out of state universities.
- The CSU GE pattern (page 100) is accepted by all CSU campuses and some private/independent or out of state universities. It is not accepted by the UC system.
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It is strongly recommended that students consult with a counselor to determine which general education option is most appropriate for their individual educational goals.

Electives as needed to meet minimum of 60 units required for the degree.

Transfer Information

Students planning to transfer to a four-year college or university should complete courses required for the university major and the general education pattern required by that transfer institution. See catalog TRANSFER INFORMATION section. Additional courses may be required to meet university lower-division requirements. **Course requirements at the transfer institution are subject to change and may be verified by a counselor or by consulting the current university catalog. Many Baccalaureate in Arts degrees require a third semester competency in a foreign language. Consult the current catalog of the transfer institution and consult with a counselor.**