

# Administration of Justice

**DEGREES**—Associate of Science  
Administration of Justice

**CERTIFICATES OF ACHIEVEMENT**

- Basic Law Enforcement Intensive
- Basic Law Enforcement Intermediate
- Basic Law Enforcement Advanced

**COLLEGE SKILLS CERTIFICATES**

- Basic Law Enforcement Academy I
- Basic Law Enforcement Academy II
- Basic Law Enforcement Academy Module I
- Basic Law Enforcement Academy Module II
- Basic Law Enforcement Academy Module III
- Criminal Investigations Specialist
- Criminal Law Specialist

For the Associate of Science Degree in Administration of Justice, complete the units of coursework listed below as well as the General Education and Graduation requirements. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:		UNITS
<b>ADJUS-110</b>	Introduction to Criminal Justice	<b>3</b>
<b>ADJUS-120</b>	Criminal Law	<b>3</b>
<b>ADJUS-122</b>	Criminal Trial Process	<b>3</b>
<b>ADJUS-124</b>	Legal Aspects of Evidence	<b>3</b>
<b>ADJUS-160</b>	Community and Justice System	<b>3</b>
<b>ADJUS-200</b>	Introduction to Corrections	<b>3</b>
<b>TOTAL UNITS</b>		<b>18</b>

**AND SELECT A MINIMUM OF 12 UNITS FROM:**

<b>ADJUS-043</b>	Parole and Probation	<b>3</b>
<b>ADJUS-150A</b>	Basic Criminal Investigation	<b>3</b>
<b>ADJUS-150B</b>	Advanced Criminal Investigation	<b>3</b>
<b>ADJUS-151</b>	Basic Drug Laws and Investigation	<b>3</b>
<b>ADJUS-152</b>	Gang Theory, Practice and Suppression	<b>3</b>
<b>ADJUS-220</b>	Juvenile Law and Procedures	<b>3</b>
<b>ADJUS-260</b>	Patrol Procedures	<b>3</b>
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>30</b>

## Certificates of Achievement in Administration of Justice

### Certificate of Achievement in Basic Law Enforcement Academy – Intensive

Certificate of Achievement in Basic Law Enforcement Academy – Intensive is a 25-unit program designed for persons seeking full-time employment in law enforcement and for those who have been recently hired by a local law enforcement agency. It is certified by the California Commission on Peace Officer Standards and Training (P.O.S.T.) and is presented in the intensive full-time format consisting of 1,020 hours of

instruction delivered over 26 weeks. The content includes: Leadership, Officer Safety, Use of Force, Legal Authority/Individual Rights, Police Vehicle Operation, Conflict Resolution, Problem Solving/Decision-Making, Communication, Ethics, Stress Tolerance and Emotional Maturity. Upon successful completion the student will receive a POST Certificate of Completion and is eligible for employment as a peace officer in most California jurisdictions. Mandatory materials fee due on first day on instruction.

REQUIRED COURSE:		UNITS
<b>ADJUS-005</b>	Basic Law Enforcement Academy	<b>25</b>
<b>TOTAL UNITS FOR THIS CERTIFICATE:</b>		<b>25</b>

### Basic Law Enforcement Academy Certificate of Achievement - Intermediate

Certificate of Achievement in Basic Law Enforcement Academy – Intermediate is a 15-unit program for persons wishing to apply as a Level II Reserve with a participating law enforcement agency or, upon completion of ADJUS-003, apply as a full-time regular law enforcement officer with a participating law enforcement agency. The courses in the program are certified by the California Commission on Peace Officer Standards and Training (P.O.S.T.) and are presented in the extended (evenings and weekends) format. The content includes but not limited to: property crimes, laws of arrest, community relations, criminal law, investigative report writing, laws of evidence, force and weaponry, traffic enforcement, criminal investigation, custody, physical fitness, and defense techniques. Mandatory materials fee due on first day on instruction.

REQUIRED COURSES:		UNITS
<b>ADJUS-001</b>	Basic Law Enforcement Academy – Beginning	<b>6</b>
<b>ADJUS-002</b>	Basic Law Enforcement Academy – Intermediate	<b>9</b>
<b>TOTAL UNITS FOR THIS CERTIFICATE:</b>		<b>15</b>

### Basic Law Enforcement Academy Certificate of Achievement – Advanced

Certificate of Achievement in Basic Law Enforcement Academy – Advanced is a 29-unit program for persons wishing to apply as a Level I Reserve police officer or apply as a full-time regular law enforcement officer with a participating law enforcement agency. The courses that make up this program are certified by the California Commission on Peace Officer Standards and Training (P.O.S.T.) and are presented in the extended (evenings and weekends) format. The content includes, but is not limited to: victimology, crimes against children, juvenile law and procedure, ABC law, patrol techniques, crimes in progress, handling disputes/crowd control, unusual occurrences, missing persons, traffic collision investigation, people with disabilities, emergency management, lifetime fitness, arrest control/defense tactics, firearms, interview and interrogation, and courtroom testimony. Mandatory materials fee due on first day on instruction.

REQUIRED COURSES:		UNITS
<b>ADJUS-001</b>	Basic Law Enforcement Academy – Beginning	<b>6</b>
<b>ADJUS-002</b>	Basic Law Enforcement Academy – Intermediate	<b>9</b>

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## Graduation Requirements

ADJUS-003	Basic Law Enforcement Academy – Advanced	14
TOTAL UNITS FOR THIS CERTIFICATE:		29

### College Skills Certificates in Administration of Justice

#### Basic Law Enforcement Academy I

REQUIRED COURSE:	UNITS	
ADJUS-005A	Basic Law Enforcement Academy I	15
TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE		15

#### Basic Law Enforcement Academy II

REQUIRED COURSE:	UNITS	
ADJUS-005B	Basic Law Enforcement Academy Module III	10
TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE		10

#### Basic Law Enforcement Academy Module III

REQUIRED COURSE:	UNITS	
ADJUS-001	Basic Law Enforcement Academy Module I	6
TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE		6

#### Basic Law Enforcement Academy Module II

REQUIRED COURSE:	UNITS	
ADJUS-002	Basic Law Enforcement Academy Module II	9
TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE		9

#### Basic Law Enforcement Academy Module I

REQUIRED COURSE:	UNITS	
ADJUS-003	Basic Law Enforcement Academy Module III	14
TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE		14

### Criminal Investigations Specialist

REQUIRED COURSES:	UNITS	
ADJUS-110	Introduction to Criminal Justice	3
ADJUS-120	Concepts of Criminal Law	3
ADJUS-124	Legal Aspects of Evidence	3
ADJUS-150A	Basic Criminal Investigation	3
ADJUS-150B	Advanced Criminal Investigation	3
TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE		15

### Criminal Law Specialist

REQUIRED COURSES:	UNITS	
ADJUS-110	Introduction to the Criminal Justice System	3
ADJUS-120	Criminal Law	3
ADJUS-122	Criminal Trial Process	3
ADJUS-124	Legal Aspects of Evidence	3
ADJUS-220	Juvenile Procedures	3
TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE		15

# Anthropology

## DEGREE-Associate of Science

### Anthropology

The Anthropology major is designed to meet the needs of a broad spectrum of students. In addition to providing valuable multicultural understanding and cultural literacy life skills, the anthropology major can be used to augment career success in business, mental health, as well as medical and social service occupations. The major in anthropology also prepares students for further study at a four-year institution.

For the Associate of Science Degree in Anthropology, complete the units of coursework listed below as well as the General Education requirements. Consult a Los Medanos College counselor to develop your education plan.

SELECT A MINIMUM OF TWO COURSES IN ANTHROPOLOGY FROM:		UNITS
ANTHR-005	General Anthropology	3
ANTHR-006	Cultural Anthropology	3
ANTHR-007	Anthropology of Culture Change	3
TOTAL UNITS		6

#### AND SELECT:

PSYCH-010*	Individual and Social Processes	3
or		
PSYCH-011*	General Psychology	3
SOCIO-015*	Introduction to Sociology	3
or		
SOCIO-016*	Introduction to Social Problems	3
TOTAL UNITS		6

#### AND SELECT A MINIMUM OF TWO ELECTIVE COURSES FROM:

PSYCH-010*	Individual and Social Processes	3
or		
PSYCH-011*	General Psychology	3
PSYCH-012	Family Crisis and Growth	3
PSYCH-014	Psychology of Human Sexuality	3
SOCIO-015*	Introduction to Sociology	3
or		
SOCIO-016*	Introduction to Social Problems	3
MATH-034	Introduction to Statistics	4
TOTAL UNITS REQUIRED IN MAJOR COURSES		18-19

\*Courses cannot be used to meet both required and elective categories.

# Appliance Service Technology

## DEGREE-Associate of Science

### Appliance Service Technology

**CERTIFICATES OF ACHIEVEMENT—Appliance Technology**

- Appliance Technician I
- Appliance Technician II

**COLLEGE SKILLS CERTIFICATES—Appliance Technology**

- Heating, Ventilation & Air Conditioning Specialist
- Electrical Appliance Technician
- Refrigeration Technician

The program in Appliance Service Technology offers instruction for two career options. The Appliance Technician I option prepares students for entry-level positions as appliance installers or shop technician trainees. Students selecting the Appliance Technician II option will be prepared for entry-level positions in the appliance service field, with sufficient back-ground to support a rapid transition to the field technician level.

**Associate of Science Degree in Appliance Service Technology**

For the Associate of Science Degree in Appliance Service Technology, complete the coursework listed below as well as the LMC General Education and Graduation requirements. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:		UNITS
APPLI-013	Beginning Electrical Appliances Tech I	3
or		
APPLI-015	Electrical Appliances I	4
APPLI-014	Advanced Electrical Appliances Tech I	3
or		
APPLI-016	Electrical Appliances II	4
APPLI-023	Basic Refrigeration Tech I	3
or		
APPLI-025	Refrigeration I	4
APPLI-024	Advanced Refrigeration Tech I	3
or		
APPLI-026	Refrigeration II	4
APPLI 020	Electrical Appliances Shop Practice	1
APPLI-030	Refrigeration Shop Practice	1
APPLI-035	Appliance Shop Practice-Intermediate	1
APPLI-036	Appliance Shop Practice-Advanced	1
APPLI-046	Principles and Repair of Microwave Ovens	.5
ACREF-045	Basic Heating & Cooling	2
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>18.5-22.5</b>

**Certificate of Achievement – Appliance Service Technology**

For the Certificate of Achievement in Appliance Service Technology, complete the coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

**Appliance Technician I (primarily an evening program)**

REQUIRED COURSES:		UNITS
APPLI-013	Beginning Electrical Appliances Tech I	3
APPLI-014	Advanced Electrical Appliances Tech I	3
APPLI 020	Electrical Appliances Shop Practice	1
APPLI-023	Basic Refrigeration Tech I	3
APPLI-024	Advanced Refrigeration Tech I	3

APPLI-030	Refrigeration Shop Practice	1
APPLI-035	Appliance Shop Practice-Intermediate	1
APPLI-036	Appliance Shop Practice-Advanced	1
APPLI-046	Principles and Repair of Microwave Ovens	.5
ACREF-045	Basic Heating & Cooling Technology	2
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>18.5</b>

**Appliance Technician II (primarily a day program)**

REQUIRED COURSES:		UNITS
APPLI-015	Electrical Appliances I	4
APPLI-016	Electrical Appliances II	4
APPLI-020	Electrical Appliance Shop Practice	5
APPLI-025	Refrigeration I	4
APPLI-026	Refrigeration II	4
APPLI-030	Refrigeration Shop Practice	5
APPLI-035	Appliance Shop Practice-Intermediate	5
APPLI-036	Appliance Shop Practice-Advanced	5
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>36</b>

With the approval of an Appliance Technology instructor, APPLI-170 can be used to satisfy the requirements of some appliance repair courses for the Appliance Technician II option.

**College Skills Certificates in Appliance Service Technology**

**Heating, Ventilation & Air Conditioning Specialist**

REQUIRED COURSES:		UNITS
APPLI-023	Basic Refrigeration Tech I	3
or		
APPLI-024	Advanced Refrigeration Tech I	3
ACREF-045	Basic Heating & Cooling	2
ACREF-073	Basic Refrigeration R1A	2
ACREF-075	HVAC Tech H1A Heating Technology	2
ACREF-076	Basic HVAC H1B Air Conditioning Repair	2
ACREF-077	Air Distribution (Duct) Testing & Repair	2
ACREF-078	HVAC AH1B Residential Load Calculation and Duct Design	1.5
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>14.5</b>

**Electrical Appliance Technician**

REQUIRED COURSES:		UNITS
APPLI-013 or 15	Electrical Appliances I	3-4
APPLI-014 or 16	Electrical Appliances II	3-4
APPLI-020	Electrical Appliances Shop Practice	5
APPLI-035 or 36	Electrical Appliances Adv. Shop Practice	5
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>16-18</b>

**Refrigeration Technician**

REQUIRED COURSES:		UNITS
APPLI-023	Basic Refrigeration Tech I	3
or		
APPLI-025	Refrigeration I	4

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## Graduation Requirements

APPLI-024	Advanced Refrigeration Tech I	3
or		
APPLI-026	Refrigeration II	4
APPLI-030	Refrigeration Shop Practice	5
APPLI-035	Appliance Shop Practice-Intermediate	5
or		
APPLI-036	Appliance Shop Practice-Advanced	5
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>16-18</b>

## Art

### DEGREES—Associate of Arts

Fine Arts

Graphic Communications

### CERTIFICATE OF ACHIEVEMENT

Graphic Communications

The Art Program offers a comprehensive and integrated series of courses that lead to an Associate of Arts Degree in Art, with an emphasis in Fine Arts or Graphic Communications. We also offer a Certificate of Achievement in Graphic Communications. Students start with required core courses that address the fundamentals of art and design and proceed to advanced-level studies in their chosen emphasis. Departmental philosophy integrates discipline, creativity, art history, tools materials, safe studio practices and professionalism across the curriculum.

### Associate of Arts Degree in Fine Arts and Associate of Arts Degree in Graphic Communications

For the Associate of Arts Degree, students must complete the units of coursework listed below as well as the General Education requirements. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:	UNITS	
ART-005	Visual Arts Concepts	3
ART-006, 7, 8 or 9	Western Art History I, II, III or IV	3
or		
ART-016	Asian Art History	3
or		
ART-017	American Art History	3
ART-010	Two-Dimensional Design Concepts	3
ART-011	Three-Dimensional Design Concepts	3
ART-020	Introduction to Drawing (Fine Arts)	3
or		
ART-012	Design Drawing (Graphic Communications)	3
ART-072	Introduction to Digital Photography	3
<b>TOTAL UNITS</b>		<b>18</b>

### Fine Art Electives

#### SELECT A MINIMUM OF 12 ELECTIVE UNITS FROM:

ART-021	Intermediate Drawing	3
ART-030	Figure Drawing	3
ART-040	Introduction to Painting	3
ART-041	Intermediate Painting	3
ART-060	Concepts of Sculpture	3
ART-066	Introduction to Ceramics	3
ART-067	Intermediate Ceramics	3
ART-069	Ceramic Sculpture	3
ART-074	Photo II: Developing a Personal Vision	3
ART-075	Documentary Photography	3
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>30</b>

### Graphic Communications Electives

#### SELECT A MINIMUM OF 12 ELECTIVE UNITS FROM:

ART-015	Graphic Design	3
ART-025	Advertising, Marketing and Publication Design	3
ART-050	Designing with Adobe InDesign	3
ART-054	Adobe Photoshop	3
ART-057	Designing with Adobe Illustrator	3
ART-075	Documentary Photography	3
ART-085	Introduction to Animation	3
ART-086	Animation and 3D Modeling	3
ART-250	Introduction to Digital Art	3
JOURN-160	Photojournalism	3
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>30</b>

### Certificate of Achievement in Graphic Communications

For the Certificate of Achievement in Graphic Communications, complete 30 units of coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

#### REQUIRED COURSES:

ART-005	Visual Arts Concepts	3
ART-010	Two-Dimensional Design Concepts	3
ART-012	Design Drawing	3
ART-015	Graphic Design	3
ART-025	Advertising, Marketing, and Publication Design	3
ART-072	Introduction to Digital Photography	3
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>18</b>

#### AND SELECT A MINIMUM OF 12 ELECTIVE UNITS FROM:

ART-050	Designing with Adobe InDesign	3
ART-054	Adobe Photoshop	3
ART-057	Designing with Adobe Illustrator	3
ART-075	Documentary Photography	3
ART-085	Introduction to Animation	3
ART-086	Animation and 3D Modeling	3
ART-250	Introduction to Digital Art	3
JOURN-110	Writing for the Media	3
JOURN-160	Photojournalism	3
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>30</b>

Note: Computer-based courses in graphic communications require familiarity with basic computer operations.

# Automotive Technology

**DEGREE**—Associate of Science  
Automotive Technology

**CERTIFICATE OF ACHIEVEMENT**—Automotive Technology

## COLLEGE SKILLS CERTIFICATES

- Smog Technician Specialist Certificate
- Air Conditioning Specialist
- Transmission Specialist
- Engine Performance
- Engine Repair & Machining Specialist
- Automotive Chassis Specialist

Automotive Technology provides instruction in engine diagnosis, tune-up, emission control, brakes, front-end, and suspension systems. These courses are designed to prepare students for certification in these areas and for employment as automotive mechanics.

For the Associate of Science Degree in Automotive Technology, complete 24 units of coursework listed below as well as the General Education requirements. Consult a Los Medanos College counselor to develop your education plan.

For the Certificate of Achievement in Automotive Technology, complete 18 units of coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

**SELECT A MINIMUM OF 24 OR 18 UNITS FROM:**

<b>AUTO-035</b>	Automotive Fundamentals	<b>4</b>
<b>AUTO-037</b>	Automotive Engine Machining	<b>4</b>
<b>AUTO-040</b>	Automotive Engine Diagnosis I	<b>4</b>
<b>AUTO-041</b>	Automotive Engine Diagnosis II	<b>4</b>
<b>AUTO-042</b>	Automotive Brakes	<b>4</b>
<b>AUTO-043</b>	Automotive Suspension and Steering	<b>4</b>
<b>AUTO-045</b>	Automotive Laboratory Practice	<b>1.5</b>
<b>AUTO-046</b>	Automotive Electricity and Electronics	<b>4</b>
<b>AUTO-047</b>	Automotive Heating and Air Conditioning	<b>4</b>
<b>AUTO-048</b>	Automatic Transmission and Transaxles	<b>4</b>
<b>AUTO-049</b>	Manual Transmission and Differential	<b>4</b>
<b>AUTO-055</b>	Clean Air Car Course + OBD II	<b>3</b>
<b>AUTO 909*</b>	Automotive Open Lab	<b>1</b>
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>18-24</b>

\*AUTO 900 courses do not necessarily transfer to four-year colleges and universities (please see a counselor regarding transfer information and degree applicability).

## College Skills Certificates in Automotive Technology

### Smog Technician Specialist

REQUIRED COURSES:		UNITS
<b>AUTO-040</b>	Automotive Engine Diagnosis I	<b>4</b>
<b>AUTO-041</b>	Automotive Engine Diagnosis II	<b>4</b>
<b>AUTO-046</b>	Automotive Electricity and Electronics	<b>4</b>

<b>AUTO-055</b>	Clean Air Car Course + OBD II	<b>3</b>
<b>AUTO-057</b>	Smog Update	<b>.5</b>
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>15.5</b>

### Air Conditioning Specialist

REQUIRED COURSES:		UNITS
<b>AUTO-047</b>	Automotive Heating & Air Conditioning	<b>3</b>
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>3</b>

### Transmission Specialist

REQUIRED COURSES:		UNITS
<b>AUTO-048</b>	Automatic Transmission & Transaxles	<b>4</b>
<b>AUTO-049</b>	Manual Transmission & Differential	<b>4</b>
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>8</b>

### Engine Performance

REQUIRED COURSES:		UNITS
<b>AUTO-035</b>	Automotive Fundamentals	<b>4</b>
<b>AUTO-040</b>	Automotive Engine Diagnosis I	<b>4</b>
<b>AUTO-041</b>	Automotive Engine Diagnosis II	<b>4</b>
<b>AUTO-046</b>	Automotive Electricity and Electronics	<b>4</b>
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>16</b>

### Engine Repair & Machining Specialist

REQUIRED COURSES:		UNITS
<b>AUTO-035</b>	Automotive Fundamentals	<b>4</b>
<b>AUTO-037</b>	Automotive Engine Machining	<b>2.5</b>
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>6.5</b>

### Automotive Chassis Specialist

REQUIRED COURSES:		UNITS
<b>AUTO-042</b>	Automotive Brakes	<b>4</b>
<b>AUTO-043</b>	Automotive Suspension	<b>4</b>
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>8</b>

# Biological Science

**DEGREE**—Associate of Science  
Biological Science

For the Associate of Science Degree in Biological Science, complete the units of coursework listed below as well as the LMC General Education requirements. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:		UNITS
<b>BIOSC-020</b>	Principles of Biology: Cellular Processes	<b>5</b>
<b>BIOSC-021</b>	Principles of Biology: Organismic	<b>5</b>
<b>TOTAL UNITS</b>		<b>10</b>

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## Graduation Requirements

**AND SELECT A MINIMUM OF 8 UNITS FROM:**

<b>BIOSC-007</b>	Ecology and the Environment*	<b>4</b>
<b>CHEM-025</b>	General College Chemistry	<b>5</b>
<b>CHEM-026</b>	General College Chemistry	<b>5</b>
<b>CHEM-028</b>	Organic Chemistry	<b>5</b>
<b>CHEM-029</b>	Organic Chemistry*	<b>5</b>
<b>MATH-050</b>	Calculus and Analytic Geometry	<b>4</b>
<b>MATH-060</b>	Calculus and Analytic Geometry*	<b>4</b>
<b>MATH-034</b>	Introduction to Statistics	<b>4</b>
<b>PHYS-035</b>	General College Physics I	<b>4</b>
<b>PHYS-036</b>	General College Physics II	<b>4</b>

**TOTAL UNITS REQUIRED IN MAJOR COURSES** **18**

\* Optional for some Biological specialties. A basic science and math core program is recommended for students majoring in Biological Sciences. However, students are advised to meet with their science advisor to draft a specific program of studies. Transfer requirements may vary depending upon which major specialty in biological science the student will be pursuing at the transfer institution.

# Business

**DEGREES—Associate in Science for Transfer**  
Business Administration



**DEGREES—Associate of Science**  
Accounting  
Small Business Operations  
Office Administration

**CERTIFICATES OF ACHIEVEMENT—Business**  
Accounting  
Office Administration  
Retail Management  
Small Business Operations

**COLLEGE SKILLS CERTIFICATES—Business**  
Fundamental Business Skills  
Business Computer Skills  
Business Literacy Skills  
Basic Clerical  
Administrative Assistant  
Accounting Clerk/Bookkeeper  
Business Transfer Preparation  
Entrepreneurship//Small Business Start-Up  
Small Business Management and Operations  
Basic Medical Clerical/Medical Records Clerk  
Front Office/Medical Billing/Medical Coding  
Legal Secretary

### Associate in Science in Business Administration for Transfer Degree

The Associate of Science in Business Administration for Transfer Degree is designed for students desiring advanced degrees in business

administration. The LMC Business Administration courses meet lower division transfer requirements for business degrees such as accounting, marketing, management, international business, or finance. The curriculum includes the first and second year requirements for transfer to a four-year institution. A baccalaureate degree is the recommended preparation for those considering professional careers in business. To achieve the Associate in Science degree in Business Administration for Transfer from LMC, students must (1) complete the Business Administration major requirements (2) fulfill the CSU General Education requirements and/or IGETC requirements (3) complete 60 college transfer level units and (4) obtain a minimum grade point average of 2.0. Students are strongly advised to meet with a counselor to discuss transfer requirements and lower division major preparation that is needed for their intended school.

The specific program requirements for an AS-T in Business Administration are listed below. Some courses may double count and satisfy both the major and an LMC General Education requirement or Graduation requirement. Students will be able to complete the major, the General Education and Graduation requirements within 60 units.

**REQUIRED CORE COURSES**

<b>BUS -186</b>	Financial Accounting	<b>4</b>
<b>BUS -187</b>	Managerial Accounting	<b>4</b>
<b>ECON-010</b>	Principles of Microeconomics	<b>3</b>
<b>ECON -011</b>	Principles of Macroeconomics	<b>3</b>
<b>BUS-294</b>	Business Law	<b>3</b>

**SELECT ONE OF THE FOLLOWING**

<b>MATH-037</b>	Applied Calculus	<b>4</b>
<b>MATH-034</b>	Introduction to Statistics	<b>4</b>
<b>MATH-035</b>	Finite Mathematics	<b>3</b>

**SELECT TWO OF THE FOLLOWING**

<b>COMSC-040</b>	Introduction to Computers	<b>4</b>
<b>BUS-109</b>	Introduction to Business	<b>3</b>
<b>BUS-059</b>	Business Communications	<b>3</b>

**TOTAL** **27- 28**

Business Program curriculum is designed to accomplish several goals: 1) to prepare students for entry-level careers, 2) to prepare students for career advancement in business, industry, government, and non-profit organizations; 3) to prepare students for entrepreneurship and small business start-ups, operations, management and expansion, 4) to prepare business students to transfer to four-year colleges, and 5) to provide major prep courses for students with bachelor of arts degrees seeking advanced business degrees.

The Business Department offers majors in accounting, small business operations and office administration.

The Business Department provides three ways to achieve your business education and training goals: 1) associate of science degrees, 2) certificates of achievement and/or 3) college skills certificates.

### Accounting Associate of Science Degree and Certificate of Achievement

The associate degree and certificate of achievement curriculum in accounting prepare students for entry-level positions and professional

advancement in public, private, and governmental accounting. Entry-level employment opportunities include positions such as accounts payable/receivable clerk, payroll accountant, accounting paraprofessional, and tax examiner assistant. The Business Department also offers a transfer curriculum to a four-year university

For the Certificate of Achievement in Accounting, complete 23 units of coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

For the Associate of Science Degree in Accounting, complete 23 units of coursework listed below as well as the LMC General Education requirements. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:		UNITS
BUS-185	Computer Assisted Accounting+	3
BUS-186	Financial Accounting+	4
BUS-187	Managerial Accounting+	4
BUS-018	Microsoft Excel for Windows	3
BUS-109	Introduction to Business+	3
<b>TOTAL UNITS</b>		<b>17</b>

**AND SELECT A MINIMUM OF 6 UNITS FROM:**

BUS-027	Small Business Management	3
BUS-294	Business Law+	3
BUS-059	Business Communications	3
BUS-091	Managing/Working in a Diverse Workforce	.5
BUS-092	Business Ethics	.5
BUS-093	Dealing with Difficult People	.5
BUS-095	Developing Customer Service Satisfaction	.5
BUS-096	Time Management and Goal Setting	.5
BUS-160	Personal Finance	3
BUS-170***	OWEE in Business	1-2
BUS-900****	Selected Topics in Business	varies
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>23</b>

\*\*\*Occupational Work Experience Education in Business

\*\*\*\*BUS 900 courses do not necessarily transfer to four-year colleges and universities (please see a counselor regarding transfer information and degree applicability).

### Small Business Operations Associate of Science Degree and Certificate of Achievement

The Small Business Operations associate degree and certificate curriculum is designed to prepare students for success in small business management—starting, operating, and expanding a small business. It is geared to the potential or current entrepreneur and to persons who serve as employees of small business firms.

For the Certificate of Achievement in Small Business Operations, complete 24 units of coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

For the Associate of Science Degree in Small Business Operations, complete 24 units of coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:		UNITS
BUS-181 or BUS-186	Accounting: Applied Principles+	3
	Financial Accounting	4

BUS-027	Small Business Management	3
BUS-035 or BUS-035 A/B/C	Microsoft Office	3
	Microsoft Word/Excel/PowerPoint	4.5
MANGT-075	Managing Human Resources+	3
<b>TOTAL UNITS</b>		<b>12-14.5</b>

**AND SELECT A MINIMUM OF 17 UNITS- DEGREE; OR 12 UNITS- CERTIFICATE FROM:**

BUS-285	Tax Accounting+	3
BUS-018	Microsoft Excel for Windows	3
BUS-109	Introduction to Business+	3
BUS-294	Business Law+	3
BUS-058	Business English	3
BUS-059	Business Communications	3
BUS-091	Managing/Working in a Diverse Workforce	.5
BUS-092	Business Ethics	.5
BUS-093	Dealing with Difficult People	.5
BUS-095	Developing Customer Service Satisfaction	.5
BUS-096	Time Management and Goal Setting	.5
BUS-160	Personal Finance	3
BUS 900***	Selected Topics in Business	varies
ART-015	Graphic Design	3
COMSC-030	Web Site Development-Part 1	1.5
COMSC-031	Web Site Development-Part II	1.5
COMSC-060	Emerging Microcomputer Technologies	4
JOURN-035	Mass Communication	3
MANGT-050	Introduction to Supervision+	3
MANGT-060	Making Effective Decisions+	3
MANGT-065	Mastering Management's Essential Tools+	3
MANGT-070	Relating in Human Terms+	3
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>24-31.5</b>

\*\*\*BUS 900 courses do not necessarily transfer to four-year colleges and universities (please see a counselor regarding transfer information and degree applicability).

### Office Administration Associate of Science Degree and Certificate of Achievement

The Office Administration Program is designed to provide instruction to those interested in professional office skills and technologies to meet the requirements of a constantly changing office environment. Emphasis is placed on state-of-the-art technology, software, office skill development, interpersonal relations, and career planning.

For the Certificate of Achievement in Office Administration, complete 24 units of coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

For the Associate of Science Degree in Office Administration, complete 24 units of coursework listed below as well as the LMC General Education requirements. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:		UNITS
BUS-018	Microsoft Excel for Windows	3
BUS-047	Office Procedures and Records Management	3
BUS-058	Business English (See Note)	3
BUS-059	Business Communication	3

continued on next page ►

## Graduation Requirements

<b>BUS-065</b>	Introduction to Word Processing	<b>3</b>
<b>BUS-091</b>	Managing/Working in a Diverse Workforce	<b>.5</b>
<b>BUS-092</b>	Business Ethics	<b>.5</b>
<b>BUS-093</b>	Dealing with Difficult People	<b>.5</b>
<b>BUS-095</b>	Developing Customer Service Satisfaction	<b>.5</b>
<b>TOTAL UNITS REQUIRED</b>		<b>17</b>

SELECT A MINIMUM OF ANY 7 UNITS FROM COURSES BELOW:

<b>TOTAL UNITS REQUIRED FOR GENERAL OFFICE ADMINISTRATION</b>	<b>24</b>
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ELECTIVES: UNITS

<b>BUS-001</b>	Civil Litigation for Legal Secretaries	<b>3</b>
<b>BUS-002</b>	Legal Office Procedures & Records Mangt.	<b>3</b>
<b>BUS-029</b>	QuickBooks	<b>2</b>
<b>BUS-035C</b>	Microsfot Office PowerPoint	<b>1.5</b>
<b>BUS-045</b>	Office Accounting Essentials	<b>3</b>
<b>BUS-080</b>	Ten-key/Data Entry Skills	<b>1</b>
<b>BUS-081</b>	Office Accounting Essentials-A/R & AP	<b>3</b>
<b>BUS-082</b>	Payroll 1	<b>3</b>
<b>BUS-083</b>	Basic CPT and ICD-9CM Coding	<b>3</b>
<b>BUS-086</b>	Medical Terminology	<b>3</b>
<b>BUS-087</b>	Medical Transcription I	<b>1</b>
<b>BUS-088</b>	Patient Billing/Accounting	<b>2</b>
<b>BUS-090</b>	Advanced Patient Billing	<b>2</b>
<b>BUS-096</b>	Time Management & Goal Setting	<b>.5</b>
<b>BUS-098</b>	Independent Study	<b>1-3</b>
<b>BUS-181</b>	Accounting: Applied Principles	<b>3</b>
<b>BUS-185</b>	Computer Assisted Accounting	<b>3</b>
<b>BUS-186</b>	Financial Accounting	<b>4</b>
<b>MANGT-050</b>	Introduction to Supervision	<b>3</b>
<b>MANGT-060</b>	Making Effective Decisions	<b>3</b>
<b>MANGT-065</b>	Mastering Mangt's Essential Tools	<b>3</b>
<b>MANGT-070</b>	Relating in Human Terms	<b>3</b>
<b>MANGT-075</b>	Managing Human Resources	<b>3</b>

<b>TOTAL UNITS REQUIRED:</b>	<b>24</b>
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Typing Proficiency of 40 WPM (Business Department faculty will evaluate students for this proficiency)

Note: Students who place at the ENGL-100 level on assessment or have completed ENGL-100 are not required to complete BUS-058.

### Business—Retail Management Certificate of Achievement

The Retail Management Program is designed to provide students with a retail management foundation that will enable them, as current or prospective employees, to deal with the challenges of the retail environment. This program meets the requirements of the Western Association of Food Chains (WAFC) Retail Management Certificate program.

For the Certificate of Achievement in Retail Management complete the coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

<b>REQUIRED COURSES:</b>	<b>UNITS</b>	
<b>BUS-003</b>	Business Math	<b>3</b>
or		
<b>MATH-007</b>	Self-Paced Arithmetic Skills	<b>3-3.5</b>
or		
<b>MATH-009</b>	Arithmetic Skills with Applications	<b>4</b>
<b>BUS-181</b>	Accounting: Applied Principles	<b>3</b>

<b>BUS-186</b>	Financial Accounting	<b>4</b>
<b>BUS-026<sup>a</sup></b>	Retailing Operations	<b>3</b>
<b>BUS-033<sup>aa</sup></b>	Marketing	<b>3</b>
<b>BUS-035</b>	Microsoft Office	<b>3</b>
or		
<b>BUS-035A/B/C</b>	Microsoft Office Word/Excel/Powerpoint	<b>3</b>
or		
<b>BUS-018</b>	Microsoft Excel for Windows	<b>3</b>
or		
<b>COMSC-060</b>	Emerging Microcomputer Technologies	<b>4</b>
<b>BUS-058</b>	Business English	<b>3</b>
<b>BUS-059</b>	Business Communications	<b>3</b>
<b>MANGT-050</b>	Introduction to Supervision	<b>3</b>
<b>MANGT-070</b>	Relating in Human Terms	<b>3</b>
<b>MANGT-075</b>	Managing Human Resources	<b>3</b>

<b>TOTAL REQUIRED UNITS IN MAJOR COURSES</b>	<b>30-32</b>
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<sup>a</sup> Currently not offered at LMC, can be taken at DVC (BUSMK256) or Las Positas (Marketing 50).

<sup>aa</sup> Currently not offered at LMC, can be taken at Las Positas (Marketing 60).

Note: Students who have completed English-100 are not required to complete BUS-058.

### College Skills Certificates in Business

Currently, the Business Department offers 12 college skills certificates. These career certificates are designed to help students develop employment skills and provide them with recognition in the short-term while they work towards achieving their long-term goals. As students acquire knowledge and build career skills, they can earn one or more skills certificates.

#### Fundamental Business Skills

<b>REQUIRED COURSES:</b>	<b>UNITS</b>	
<b>BUS-003</b>	Business Math	<b>3</b>
<b>BUS-058</b>	Business English	<b>3</b>

<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>	<b>6</b>
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#### Business Computer Skills

<b>REQUIRED COURSES:</b>	<b>UNITS</b>	
<b>BUS-035</b>	Microsoft Office	<b>3</b>
<b>BUS-051</b>	Computer Keyboarding	<b>1</b>
<b>BUS-080</b>	Ten Key/Data Entry Skills	<b>1</b>

<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>	<b>5</b>
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#### Business Literacy Skills

<b>REQUIRED COURSES:</b>	<b>UNITS</b>	
<b>BUS-109</b>	Introduction to Business	<b>3</b>
<b>BUS-160</b>	Personal Finance	<b>3</b>

<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>	<b>6</b>
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**Basic Clerical**

REQUIRED COURSES:		UNITS
BUS-047	Office Procedures	3
BUS-055	Typing Speed/Accuracy Development	1
BUS-065	Introduction to Word Processing	3
BUS-091	Managing/Working in a Diverse Workforce	.5

TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE **7.5**

Note: Students should complete the Basic Clerical Certificate before pursuing a Administrative Assistant Certificate.

**Administrative Assistant**

REQUIRED COURSES:		UNITS
BUS-059	Business Communications	3
MANGT-050	Introduction to Supervision	3
BUS-018*	Microsoft Excel for Windows	3

TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE **9**

**Accounting Clerk/Bookkeeper**

REQUIRED COURSES:		UNITS
BUS-018	Microsoft Excel for Windows	3
BUS-181	Accounting: Applied Principles	3
BUS-185	Computer Assisted Accounting	3

TOTAL UNITS **9**

AND SELECT A MINIMUM OF 3 UNITS FROM:

BUS-045	Office Accounting Essentials	3
BUS-082	Payroll 1	3
BUS-081	Office Accounting Essentials: A/R & A/P	3

TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE **12**

**Business Transfer Preparation**

REQUIRED COURSES:		UNITS
BUS-186	Financial Accounting	4
BUS-187	Managerial Accounting	4
BUS-109	Introduction to Business	3
BUS-294	Business Law	3
BUS-018	Microsoft Excel for Windows	3
or		
BUS-035	Microsoft Office	3

TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE **17**

**Entrepreneurship/Small Business Start-Up**

REQUIRED COURSES:		UNITS
BUS-018	Microsoft Excel for Windows	3
BUS-027	Small Business Management	3
BUS-181	Accounting: Applied Principles	3
BUS-029	QuickBooks	2

TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE **11**

**Small Business Management and Operations**

REQUIRED COURSES:		UNITS
BUS-027	Small Business Management	3
BUS-294	Business Law	3
MANGT-075	Managing Human Resources	3

TOTAL UNITS **9**

AND SELECT A MINIMUM OF 3 UNITS FROM:

BUS-081	Office Accounting Essentials: A/R & A/P	3
BUS-082	Payroll I	3
BUS-045	Office Accounting Essentials	3

TOTAL UNITS **3**

AND SELECT A MINIMUM OF 3 UNITS FROM:

MANGT-050	Introduction to Supervision	3
MANGT-060	Making Effective Decisions	3
MANGT-065	Mastering Management's Essential Tools	3
MANGT-070	Relating in Human Terms	3

TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE **15**

**Basic Medical Clerical/Medical Records Clerk**

REQUIRED COURSES:		UNITS
BUS-084	Medical Office Procedures/ Records Management	2
BUS-086	Medical Terminology	3
BUS-089	Medical Law & Ethics for the Medical Office	1
BUS-091	Managing/Working in a Diverse Workplace	.5
BUS-093	Dealing with Difficult People	.5

TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE **7**

Note: Students should complete the Basic Medical Clerical/Medical Records Clerk Certificate before pursuing either a Front Office/Medical Billing Coding or Medical Transcription Certificate.

**Front Office/Medical Billing/Medical Coding**

REQUIRED COURSES:		UNITS
BUS-059	Business Communications	3
BUS-083	Basic CPT & ICD-9CM Coding	3
BUS-088	Patient Billing/Accounting	2
BUS-090	Advanced Patient Billing	2

TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE **10**

**Legal Secretary**

REQUIRED COURSES:		UNITS
BUS 001	Civil Litigation for Legal Secretaries	3
BUS-002	Legal Office Procedures and Records Management	3
BUS-058	Business English	3
BUS-035B/C	Microsoft Office Excel/Powerpoint	3
BUS-055	Typing Speed & Accuracy Development	1
BUS-065	Introduction to Word Processing	3
BUS-093	Dealing with Difficult People	.5

TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE **16.5**

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# Chemistry

**DEGREE**—Associate of Science  
Chemistry

For the Associate of Science Degree in Chemistry, complete the coursework listed below as well as the General Education requirements. Consult a Los Medanos College counselor to develop your education plan for the Associate of Science Degree.

REQUIRED COURSES:		UNITS
<b>CHEM-025</b>	General College Chemistry	5
<b>CHEM-026</b>	General College Chemistry	5
<b>CHEM-028</b>	Organic Chemistry	5
<b>CHEM-029</b>	Organic Chemistry	5
<b>MATH-050</b>	Calculus and Analytic Geometry I	4
<b>MATH-060</b>	Calculus and Analytic Geometry II	4
<b>MATH-070</b>	Calculus and Analytic Geometry III	4
<b>PHYS-040</b>	Physics for Scientists and Engineers I	4
<b>PHYS-041</b>	Physics for Scientists and Engineers II	4
<b>PHYS-042</b>	Physics for Scientists and Engineers III	4
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>44</b>

RECOMMENDED ELECTIVE COURSES:		
<b>MATH-075</b>	Linear Algebra	3
<b>MATH-080</b>	Differential Equations	3

# Child Development

**DEGREE**—Associate in Science for Transfer  
Early Childhood Education



**CERTIFICATE OF ACHIEVEMENT**—Child Development

**COLLEGE SKILLS CERTIFICATES**—Child Development

- Assistant
- Associate Teacher
- Specialization: Infant Toddler Care
- Specialization: Curriculum in Early Childhood Education
- Specialization: Special Needs Care & Education
- Specialization: Site Supervisor/Program Director
- Specialization: School Age Child Care
- School-Age Development and Education
- School-Age Associate Teacher

## Certificate of Achievement—Child Development

For the Certificate of Achievement in Child Development, complete the coursework listed below.

For degree, certificate, waiver assistance and educational planning, contact the Department Education Advisor at ext. 3183.

Courses required for the major, with suggested 2-year sequence:

REQUIRED COURSES: FIRST SEMESTER		UNITS
<b>CHDEV-001</b>	Introduction to the Study of Early Childhood Education	3
<b>CHDEV-010</b>	Child Growth and Development	3

REQUIRED COURSES: SECOND SEMESTER		UNITS
<b>CHDEV-020</b>	Child, Family & Community	3
<b>CHDEV-062</b>	Curriculum Foundations for the Young Child	3

REQUIRED COURSES: THIRD SEMESTER		UNITS
<b>CHDEV-050</b>	Teaching in a Diverse Society	3
<b>CHDEV-011</b>	Observation & Assessment	3
<b>Electives**</b>		2-3

REQUIRED COURSES: FOURTH SEMESTER		UNITS
<b>CHDEV-065</b>	Health, Safety and Nutrition for the Young Child	3
<b>CHDEV-090</b>	Supervised Teaching in Local Child Development Programs	4
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>27-28</b>

\*\* CHILD DEVELOPMENT ELECTIVES (MUST TAKE CHDEV-083 IF NO FIELD EXPERIENCE YET):

<b>CHDEV-012</b>	Parenting Seminar	2.5
<b>CHDEV-022</b>	Relationship-Based Discipline Strategies For Children	2
<b>CHDEV-025</b>	Creative Art for the Young Child	2
<b>CHDEV-032</b>	Caring for and Educating School Age Children	3
<b>CHDEV-033</b>	Developmentally and Culturally Appropriate Practice for the School Age Child	3
<b>CHDEV-035</b>	Math and Science for the Young Child	2
<b>CHDEV-040</b>	Infant and Toddler Care and Development	3
<b>CHDEV-041</b>	Developmentally Appropriate Practices For Infants and Toddlers	3
<b>CHDEV-045</b>	Music and Movement for the Young Child	2
<b>CHDEV-055</b>	Introduction to Children with Special Needs	3
<b>CHDEV-057</b>	Developmentally Appropriate Practices for Children with Special Needs	3
<b>CHDEV-060</b>	Language and Literacy for the Young Child	2
<b>CHDEV-077</b>	Working with Drug-Exposed Children from Birth to 5 years of Age	2
<b>CHDEV-083</b>	Field Experience in Early Childhood Programs	2
<b>CHDEV-092</b>	Adult Supervision/Mentor Teacher Training	2
<b>CHDEV-095</b>	Administration of Early Childhood Programs	3
<b>CHDEV-096</b>	Supervision and Leadership in Early Childhood Programs	3

## Associate in Science Degree in Early Childhood Education for Transfer

The Associate in Science Degree in Early Childhood Education for Transfer is a 60-unit degree program designed to prepare students to transfer and study child development, human development, and early childhood education. The program, which requires 25 units of lower

division work in child development is combined with the California State university General Education pattern of 40-42 units. Up to 6 units may be double-counted toward the 25 unit major coursework in the CSU GE pattern so the degree can be achieved in 60 units. Students will be prepared to take upper division courses their first semester after transferring. Typically, students who complete this program will be able to complete their upper division coursework in only two additional years.

The Associate in Science Degree in Early Childhood Education for Transfer also prepares students for entry and mid-level career options in child care, preschool education, special education, and before-and-after school programs. Upon completion of this program, students will be eligible to apply for the Teacher level permit on the Child Development Permit Matrix from the State of California Commission on Teacher Credentialing. Students will complete lower division courses in child growth and development, principles and practices in early childhood education, curriculum, observation, assessment, child/family/community relationships, diversity, health and safety, and a culminating student teaching practicum.

REQUIRED COURSES:		UNITS
CHDEV-010	Child Growth and Development	3
CHDEV-020	Child Family and Community	3
CHDEV-001	Introduction to Principles and Practices in Early Childhood Education	3
CHDEV-062	Curriculum Foundations for the Young Child	3
CHDEV-011	Observation and Assessment	3
CHDEV-090	Student Teaching Practicum in Early Childhood Education	4
CHDEV-065	Health, Safety and Nutrition in Early Childhood Programs	3
CHDEV-050	Teaching in a Diverse Society	3
<b>TOTAL UNITS REQUIRED FOR THE DEGREE:</b>		<b>25</b>

### College Skills Certificates in Child Development

The following college skills certificates include coursework that may apply to the California Child Development Permit Matrix. Upon completion, teaching permits can be applied for through the State of California Commission on Teacher Credentialing. Contact ext. 3183 for application assistance.

#### Assistant

REQUIRED COURSES:		UNITS
CHDEV-001	Introduction to Early Childhood Studies	3
CHDEV-010	Child Growth and Development	3
<b>TOTAL UNITS REQUIRED FOR THE COLLEGE SKILLS CERTIFICATE</b>		<b>6</b>

#### Associate Teacher

REQUIRED COURSES:		UNITS
CHDEV-001	Introduction to Early Childhood Studies	3
CHDEV-010	Child Growth and Development	3
CHDEV-020	Child, Family, and Community	3
CHDEV-062	Curriculum Foundation for the Young Child	3
<b>TOTAL UNITS REQUIRED FOR THE COLLEGE SKILLS CERTIFICATE</b>		<b>12</b>

#### Specialization: Infant Toddler Care

REQUIRED COURSES:		UNITS
CHDEV-040	Infant and Toddler Care and Development	3
CHDEV-041	Developmentally Appropriate Practices For Infants and Toddlers	3
<b>TOTAL UNITS REQUIRED FOR THE COLLEGE SKILLS CERTIFICATE</b>		<b>6</b>

#### Specialization: Curriculum in Early Childhood Education

SELECT 3 COURSES FROM:		UNITS
CHDEV-022	Relationship-Based Discipline Strategies for Children	2
CHDEV-025	Creative Arts for the Young Child	2
CHDEV-050	Teaching a Diverse Society	3
<b>TOTAL UNITS REQUIRED FOR THE COLLEGE SKILLS CERTIFICATE</b>		<b>7</b>

#### Specialization: Special Needs Care & Education

REQUIRED COURSES:		UNITS
CHDEV-055	Introduction to Children with Special Needs	3
CHDEV-057	Developmentally Appropriate Practices for Children with Special Needs	3
<b>TOTAL UNITS REQUIRED FOR THE COLLEGE SKILLS CERTIFICATE</b>		<b>6</b>

#### Specialization: Site Supervisor/Program Director

REQUIRED COURSES:		UNITS
CHDEV-095	Administration of Early Childhood Programs	3
CHDEV-096	Supervision and Leadership in Early Childhood Programs	3
<b>TOTAL UNITS REQUIRED FOR THE COLLEGE SKILLS CERTIFICATE</b>		<b>6</b>

#### Specialization: School Age Child Care

REQUIRED COURSES:		UNITS
CHDEV-032	Caring for and Educating School Age Children	3
CHDEV-033	Developmentally and Culturally Appropriate Practice for the School Age Child	3
<b>TOTAL UNITS REQUIRED FOR THE COLLEGE SKILLS CERTIFICATE</b>		<b>6</b>

#### School-Age Development and Education

REQUIRED COURSES:		UNITS
CHDEV-010	Child Growth and Development	3
CHDEV-020	Child, Family and Community	3
CHDEV-022	Relationship-Based Discipline Strategies for Children	2
CHDEV-032	Caring for and Educating School Age Children	3
CHDEV-033	Developmentally Appropriate Practice for the School Age Child	3
CHDEV-050	Teaching in a Diverse Society	3
<b>TOTAL UNITS REQUIRED FOR THE COLLEGE SKILLS CERTIFICATE</b>		<b>17</b>

**School-Age Associate Teacher**

REQUIRED COURSES:		UNITS
<b>CHDEV-010</b>	Child Growth and Development	<b>3</b>
<b>CHDEV-020</b>	Child, Family and Community	<b>3</b>
<b>CHDEV-032</b>	Caring for and Educating School Age Children	<b>3</b>
<b>CHDEV-033</b>	Developmentally Appropriate Practice for the School Age Child	<b>3</b>
<b>TOTAL UNITS REQUIRED FOR THE COLLEGE SKILLS CERTIFICATE</b>		<b>12</b>

# Communication Studies

**DEGREE**—Associate in Arts Degree for Transfer  
Communication Studies



The Associate in Arts in Communication Studies for Transfer at Los Medanos College is designed to prepare students to transfer and study at a California State University. The program, which requires a minimum of 18 units of lower division work in Communication; as determined by the community college district; and obtainment of a minimum grade point average of 2.0 across all coursework. Students must earn a C or better in all courses required for the major and in all CSU transferable coursework in the CSU GE (California State University, General Education) pattern to prepare students to take upper division courses at a CSU their first semester on campus. Typically, students who complete this degree will be able to complete their upper division coursework at their CSU in only two additional years. Students will complete lower division courses in public speaking, argumentation, intercultural, interpersonal, and have their choice of preparing for a more traditional degree in communication studies or preparation for a degree in communications with an emphasis in Journalism. Students interested in journalism should also review the Los Medanos College Associate Degree in Journalism.

REQUIRED COURSES:		UNITS
<b>SPCH-110</b>	Oral Communication	<b>3</b>
<b>SPCH-120</b>	Argumentation	<b>3</b>
<b>SPCH-130</b>	Interpersonal Communication	<b>3</b>
<b>TOTAL UNITS</b>		<b>9</b>

SELECT TWO COURSES:		UNITS
<b>SPCH-160</b>	Debate Practicum	<b>3</b>
or		
<b>SPCH-150</b>	Intercultural Communication	<b>3</b>
or		
<b>JOURN-035</b>	Mass Communication	<b>3</b>
<b>TOTAL UNITS</b>		<b>6</b>

SELECT ONE COURSE:		UNITS
<b>ENGL-220</b>	Critical Inquiry and Analysis	<b>3</b>
or		
<b>ENGL-221</b>	Advanced Composition and Critical Thinking	<b>3</b>
or		
<b>JOURN-010</b>	Writing for the Media	<b>3</b>
<b>TOTAL UNITS FOR THE DEGREE:</b>		<b>18</b>

# Computer Science

**DEGREE**—Associate of Science  
Computer Science  
Computer Support Specialist-  
Networking and Security

**CERTIFICATE OF ACHIEVEMENT**—Computer Science  
Computer Support Specialist (Basic)  
Computer Support Specialist (Advanced)  
Microcomputer Systems Specialist  
Networking and Security (Basic)  
Networking and Security (Advanced)

**COLLEGE SKILLS CERTIFICATES**—Computer Science  
Foundation  
Core Competencies  
Game Design  
PC Repair Technician (A+ Certification)  
Web Design

The **Computer Science AS Degree** is designed for students desiring advanced degrees in **computer science** or in **computer information systems**. The LMC Computer Science courses meet lower division transfer requirements for these degrees.

The **Computer Support Specialist** Basic and Advanced Certificates of Achievement program will prepare students for jobs as network support specialists, desktop support specialists, and software and/or hardware support specialists. These jobs require excellent customer service, communication and computer skills and can be found in a variety of organizations - large and small - in the private or public sectors.

The **Networking and Security** Basic and Advanced Certificates of Achievement program will prepare students for jobs in computer forensics and/or networking. These jobs require excellent technical skills and the ability to investigate and solve problems or crimes. Most organizations require network specialists. Given the rise in computer crimes, viruses, and computer hacking, the need for computer forensics professionals has increased in the government and in the private sector.

**Associate of Science Degree in Computer Science**

REQUIRED COURSES:		UNITS
COMSC-040	Introduction to Computers	4
COMSC-124	Program Design & Data Structures	4
COMSC-125	Assembly Language Programming/ Computer Organization	4
MATH-050	Calculus I	4
MATH-060	Calculus II	4
MATH-070	Calculus III	4
MATH-075	Linear Algebra	3
<b>TOTAL UNITS</b>		<b>27</b>

**SELECT FROM ANY ONE OF THE PROGRAMMING TRACKS (6 UNITS)**

COMSC-044	C++, Part I	3
COMSC-048	C++, Part II	3
or		
COMSC-051	Java Programming, Part I	3
COMSC-052	Java Programming, Part II	3
<b>TOTAL UNITS FOR THE MAJOR:</b>		<b>33</b>

**Associate of Science Degree in Computer Support Specialist**

REQUIRED COURSES:		UNITS
COMSC-010	Introduction to Computer Networking	2
COMSC-012	Introduction to Network Security	2
COMSC-037	Help Desk-Customer Technical Support	3
COMSC-040	Introduction to Computers	4
COMSC-056	Programming Logic and Design	3
COMSC-060	Microcomputers Applications & Emerging Technologies	4
COMSC-061	Advanced Microcomputer Applications	3
COMSC-080	Survey of Operating Systems	3
COMSC-090	PC Repair (Hardware)	3
COMSC-091	PC Repair (Software)	3
COMSC-123	Computer Ethics	3
<b>TOTAL UNITS FOR THE MAJOR:</b>		<b>33</b>

**Associate of Science Degree in Networking and Security**

REQUIRED COURSES:		UNITS
COMSC-010	Introduction to Computer Networking	2
COMSC-011	Introduction to Networking Operating Systems	2
COMSC-012	Introduction to Network Security	2
COMSC-037	Help Desk-Customer Technical Support	3
COMSC-040	Introduction to Computers	4
COMSC-080	Survey of Operating Systems	3
COMSC-120	Introduction to Computer Forensics	3
COMSC-121	Computer Forensics Investigations and Analysis	3
COMSC-123	Computer Ethics	3
<b>TOTAL UNITS</b>		<b>25</b>

ELECTIVES- SELECT TWO ELECTIVES FROM THE LIST OF PROGRAMMING APPLICATIONS		UNITS
COMSC-041	Programming with VB.NET	3
COMSC-044	C++, Part I	3
COMSC-051	Java Programming	3
COMSC-056	Programming Logic and Design	3
COMSC-124	Program Design & Data Structures	4
<b>TOTAL UNITS FOR THE MAJOR:</b>		<b>31-32</b>

For an associate of science degree, students must complete General Education and Graduation requirements.

**Certificate of Achievement in Computer Support Specialist (Basic)**

REQUIRED COURSES:		UNITS
COMSC-010	Introduction to Computer Networking	2
COMSC-037	Help Desk-Customer Technical Support	3
COMSC-040	Introduction to Computers	4
COMSC-090	PC Repair (Hardware)	3
COMSC-091	PC Repair (Software)	3
COMSC-092	A+ Certification Exam Prep	1.5
<b>TOTAL UNITS FOR THIS CERTIFICATE:</b>		<b>16.5</b>

**Certificate of Achievement in Computer Support Specialist (Advanced)**

REQUIRED COURSES:		UNITS
COMSC-010	Introduction to Computer Networking	2
COMSC-012	Introduction to Network Security	2
COMSC-037	Help Desk-Customer Technical Support	3
COMSC-040	Introduction to Computers	4
COMSC-056	Programming Logic and Design	3
COMSC-060	Information Technologies	4
COMSC-061	Advanced Microcomputer Applications	3
COMSC-080	Survey of Operating Systems	3
COMSC-090	PC Repair (Hardware)	3
COMSC-091	PC Repair (Software)	3
COMSC-123	Computer Ethics	3
<b>TOTAL UNITS FOR THIS CERTIFICATE</b>		<b>33</b>

**Certificate of Achievement in Microcomputer Systems Specialist****Level One**

REQUIRED COURSES:		UNITS
COMSC-040	Introduction to Computers	4
COMSC-060	Microcomputer Applications and Emerging Technologies	4
COMSC-061	Advanced Microcomputer Applications	3
<b>TOTAL UNITS REQUIRED IN LEVEL ONE COURSES</b>		<b>11</b>

**Level Two (requires completion of Level One)**

REQUIRED COURSES:		UNITS
COMSC-030	Web Site Development Part I	1.5
COMSC-031	Web Site Development Part II	1.5
COMSC-056	Programming Logic and Design	3
COMSC-080	A Survey of Operating Systems	3
<b>TOTAL UNITS</b>		<b>9</b>

AND SELECT ONE OF THE FOLLOWING PROGRAMMING COURSES FROM:

COMSC-041	Programming with Visual Basic.net	3
COMSC-044	Introduction to C++ Programming Part I	3
COMSC-051	Introduction to Java Part I	3
<b>TOTAL UNITS REQUIRED IN LEVEL TWO COURSES</b>		<b>12</b>

AND SELECT A MINIMUM OF 10 UNITS FROM THE REMAINING COMPUTER SCIENCE COURSES.

COMSC-011	Intro to Network Operating Systems	2
COMSC-012	Intro to Network Security	2
COMSC-032	Web Site Development- Dreamweaver/Flash	3
COMSC-037	Help Desk Customer Technical Support	3
COMSC-048	Intro to C++ Programming Part II	3
COMSC-052	Java for Programmers, Part II	3
COMSC-053	Advanced Visual Basic.NET	3
COMSC-090	PC Repair – Hardware (A+ Certification)	3
COMSC-091	PC Repair – Software (A+ Certification)	3
COMSC-110	Gaming: An Introduction	3
COMSC-111	Gaming: Beginning Illustration & Storyboarding	3
COMSC-112	Gaming: Beginning Game Design	3
COMSC-120	Computer Forensics	3
COMSC-121	Computer Forensics Investigations and Analysis	3
COMSC-123	Introduction to Computer Ethics	3
COMSC-124	Programming Design and Data Structures	4
COMSC-125	Assembly Language Programming/ Computer Organization	4
<b>TOTAL UNITS</b>		<b>10</b>

**TOTAL UNITS FOR THIS CERTIFICATE 33**

**Certificate of Achievement in Networking and Security (Basic)**

REQUIRED COURSES	UNITS	
COMSC-010	Introduction to Computer Networking	2
COMSC-011	Introduction to Networking Operating Systems	2
COMSC-012	Introduction to Network Security	2
COMSC-040	Introduction to Computers	4
COMSC-080	Survey of Operating Systems	3
COMSC-120	Introduction to Computer Forensics	3
<b>TOTAL UNITS FOR THIS CERTIFICATE</b>		<b>16</b>

**Certificate of Achievement in Networking and Security (Advanced)**

REQUIRED COURSES	UNITS	
COMSC-010	Introduction to Computer Networking	2
COMSC-011	Introduction to Networking Operating Systems	2
COMSC-012	Introduction to Network Security	2
COMSC-037	Help Desk-Customer Technical Support	3
COMSC-040	Introduction to Computers	4
COMSC-080	Survey of Operating Systems	3
COMSC-120	Introduction to Computer Forensics	3
COMSC-121	Computer Forensics Investigations & Analysis	3
COMSC-123	Computer Ethics	3

ELECTIVES – SELECT TWO ELECTIVES FROM THE LIST OF PROGRAMMING APPLICATIONS:

COMSC-041	Programming with VB.NET	3
COMSC-044	C++, Part I	3
COMSC-051	Java Programming	3
COMSC-056	Programming Logic and Design	3
COMSC-124	Program Design & Date Structures	4

**TOTAL UNITS FOR THIS CERTIFICATE 31-32**

**College Skills Certificates in Computer Science**

**Foundation**

REQUIRED COURSES:	UNITS	
COMSC-040	Introduction to Computers	4
COMSC-060	Microcomputer Applications and Emerging Technologies	4
COMSC-061	Advanced Microcomputer Applications	3
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>11</b>

**Core Competencies**

REQUIRED COURSES:	UNITS	
COMSC-030	Web Site Development Part I	1.5
COMSC-031	Web Site Development Part II	1.5
COMSC-056	Programming Logic and Design	3
COMSC-080	A Survey of Operating Systems	3
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>9</b>

AND SELECT ONE OF THE FOLLOWING PROGRAMMING COURSES FROM:

COMSC-041	Programming with Visual Basic.net	3
COMSC-044	Introduction to C++ Programming Part I	3
COMSC-051	Introduction to Java Part I	3
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>12</b>

**Game Design**

REQUIRED COURSES:	UNITS	
COMSC-110	Gaming: An Introduction	3
COMSC-111	Gaming: Beginning Illustration and Storyboarding	3
COMSC-112	Gaming: Beginning Game Design	3
ART-027	Introduction to Cartooning	3

ART-054	Adobe Photoshop	3
<b>TOTAL UNITS REQUIRED FOR THE COLLEGE SKILLS CERTIFICATE</b>		<b>15</b>

**PC Repair Technician (A+ Certification)**

REQUIRED COURSES:		UNITS
COMSC-090	PC Repair - Hardware	3
COMSC-091	PC Repair – Software	3
COMSC-092	A+ Certification Exam Preparation	1.5
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>7.5</b>

**Web Design**

REQUIRED COURSES:		UNITS
COMSC-030	Web Site Development Part I	1.5
COMSC-031	Web Site Development Part II	1.5
COMSC-032	Web Site Development – Dreamweaver and Flash	3
COMSC-040	Introduction to Computers	4
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>10</b>

# Drama

**DEGREE**–Associate of Arts  
Acting

**DEGREE**–Associate in Arts Degree for Transfer   
Theatre Arts

The Drama program is designed to develop strong academic and artistic foundations in voice, movement, and acting techniques as well as theatrical and film analysis and history. The curriculum is designed after our local transfer institution, CSU Eastbay. Upon completion of the degree students will be prepared to enter the 4-year academic institution with the knowledge and professionalism to succeed in the specialized degree for Acting, which it offers.

**Associate of Arts in Acting**

For the Associate of Arts Degree in Acting, complete the coursework listed below as well as the General Education requirements. Consult a Los Medanos College counselor to develop your education plan

REQUIRED COURSES:		UNITS
<b>Drama 15</b> or <b>Drama 16</b>	Multicultural Perspectives in Theatre	3
<b>Drama 20</b>	Theatre Appreciation	3
<b>Drama 21</b>	Principles of Acting 1	3
<b>Drama 22</b>	Principles of Acting 2	3
<b>Drama 23</b>	Principles of Voice and Dialects	3
<b>Drama 23</b>	Principles of Improvisation and Movement	3
<b>Drama 52</b>	Directing and Collaboration	3
<b>TOTAL UNITS FOR THE DEGREE:</b>		<b>18</b>

**Associate in Arts Degree in Theatre Arts for Transfer**

Associate in Arts Degree in Theatre Arts for Transfer at Los Medanos College is a 60-unit degree program designed to prepare students to transfer and study theatre at a California State University. The program, which requires 18 units of lower division work in Theatre, is combined with the California State General Education Pattern to prepare students to take upper division courses at a California State University. Typically, students who complete this program will be able to complete their upper division coursework at their chosen CSU in two additional years. Students obtaining a degree must earn a minimum 2.0 GPA for all course work and achieve a minimum grade of C or higher for all major course work. Please contact an advisor or counselor for advice on course selection.

REQUIRED COURSES:		UNITS
<b>DRAMA-016</b>	Theatre Appreciation	3
<b>DRAMA-020</b>	Principles of Acting I	3
<b>DRAMA-050</b>	Theatrical Production I: Acting for Performance	3
<b>TOTAL UNITS</b>		<b>9</b>
SELECT THREE COURSES:		UNITS
<b>DRAMA-021</b>	Principles of Acting II	3
<b>DRAMA-040</b>	Theatrical Stagecraft	3
<b>DRAMA-041</b>	Theatrical Design	3
<b>DRAMA-051</b>	Theatrical Production II: Intermediate Acting for Performance	3
<b>DRAMA-052</b>	Directing and Collaborative Performance	3
<b>TOTAL UNITS FOR THE DEGREE:</b>		<b>18</b>

# Electrical /Instrumentation Technology

**DEGREES**–Associate of Science  
Electrical Technology  
Instrumentation Technology

**CERTIFICATES OF ACHIEVEMENT**  
Electrical Technology  
Instrumentation Technology

LMC is in a unique position to offer an outstanding, up-to-date curriculum that has been designed by industry for industry. No other college in this area provides similar education and training needed to obtain these high-skill, high-wage and high-demand jobs.

The ETEC program enables students to graduate with a certificate of achievement in four semesters (two years). There are two areas of specialization: electrical technician or instrumentation technician. The electrical technician specialization is designed to train electricians to

continued on next page ►

## Graduation Requirements

maintain complex electrical automation systems used in the manufacturing and power generation industry. The instrumentation technician specialization is designed to train instrument technicians to maintain the process measurement and control systems used in refineries, chemical plants, biotech plants, pharmaceutical plants, water and waste treatment plants.

### Certificate of Achievement

Courses in the first three semesters are common to both areas of specialization. In the fourth semester, the courses for each specialization vary, with the electrical technicians concentrating on the skills needed for electrical maintenance while the Instrumentation Technicians concentrate on the measurement and control of processes.

For the certificate of achievement, complete the coursework listed below. Consult a Los Medanos College counselor to develop an education plan.

### Associate of Science Degree

For the Associate of Science Degree complete the coursework listed below as well as the General Education requirements. Consult a Los Medanos College counselor to develop your education plan.

#### Program Entry Skills

RECOMMENDED COURSES:		UNITS
MATH-012	Pre-Algebra	4
ENGL-090	Integrated Reading, Writing, and Critical Thinking	5

REQUIRED COURSES: FIRST SEMESTER		UNITS
ETEC-010	Direct Current Circuits	4
ETEC-012	Alternating Current Circuits	4
MATH-025	Elementary Algebra	5
TOTAL UNITS		13

REQUIRED COURSES: SECOND SEMESTER		UNITS
ETEC-020	Electric Motor Control	3
ETEC-022	Semiconductor Devices	2
ETEC-024	Digital Devices	2
PHYS-015	Introduction to Physics	4
TOTAL UNITS		11

REQUIRED COURSES: THIRD SEMESTER		UNITS
ETEC-030	Programmable Logic Controllers	4
ETEC-032	Instrumentation Process Measurement	3
ETEC-034	Instrument Calibration	1
CHEM-006	Introduction to Inorganic and Physical Chemistry (for Instrumentation Specialization only)	4
TOTAL UNITS		8-12
TOTAL UNITS REQUIRED IN MAJOR COURSES:		32-36

### Electrical Specialization

REQUIRED COURSES: FOURTH SEMESTER		UNITS
ETEC-040	National Electrical Code	3
ETEC-042	Wiring Methods and Code Application	1
ETEC-044	Power Distribution & Transformers	3
ETEC-046	DC & AC Motors & Generators	3
TOTAL UNITS REQUIRED IN MAJOR COURSES - ELECTRICAL SPECIALIZATION		42

### Instrumentation Specialization

REQUIRED COURSES: FOURTH SEMESTER		UNITS
ETEC-050	Instrumentation Process Control	3
ETEC-052	Applied Process Control	1
ETEC-056	Code for instrument Application	1
ETEC-058	Analytical Instrumentation	2
ETEC-059	System Integration & Troubleshooting	2
TOTAL UNITS REQUIRED IN MAJOR COURSES - INSTRUMENTATION SPECIALIZATION		45

# Emergency Medical Services

### COLLEGE SKILLS CERTIFICATES

- Emergency Medical Services
- Emergency Medical Services Recertification

### Emergency Medical Services

REQUIRED COURSES:		UNITS
EMS-010	Emergency Medical Technician I	6
TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE		6

### Emergency Medical Services Recertification

REQUIRED COURSES:		UNITS
EMS-011	Emergency Medical Technician I Recertification	1
TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE		1

# Engineering

### DEGREE—Associate of Science Engineering

Engineers design and oversee the construction of the structures, vehicles, devices, and processes that solve the technological problems facing society. Engineering is a profession with both licensing requirements and a code of ethics.

The LMC Engineering Program offers a solid foundation for upper division studies in most engineering fields, including mechanical engineer-

ing, civil engineering, electrical engineering, aerospace engineering, industrial engineering, and many other engineering disciplines. Students who complete the program will have finished most or all of the lower division courses required for transfer to four-year engineering programs. Graduates of the Engineering Program at LMC will also be able to: identify and solve engineering problems, perform and interpret experiments, produce designs to meet various needs, demonstrate professional ethics, communicate effectively, judge how engineering projects affect society and the environment, engage in lifelong learning, and use the tools and techniques necessary for modern engineering practice.

For the Associate of Science Degree in Engineering, complete 55 units of coursework listed below as well as the General Education requirements. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:		UNITS
<b>ENGIN-010</b>	Introduction to Engineering	<b>3</b>
<b>ENGIN-020</b>	Programming with C++ for Engineers and Scientists	<b>4</b>
or		
<b>ENGIN-022</b>	Programming with MATLAB for Engineers and Scientists	<b>4</b>
<b>ENGIN-025</b>	Engineering Graphics	<b>3</b>
<b>ENGIN-030</b>	Materials Science	<b>4</b>
<b>ENGIN-045</b>	Engineering Circuits	<b>3</b>
<b>CHEM-025</b>	General College Chemistry	<b>5</b>
<b>PHYS-040</b>	Physics for Scientists and Engineers I	<b>4</b>
<b>PHYS-041</b>	Physics for Scientists and Engineers II	<b>4</b>
<b>PHYS-042</b>	Physics for Scientists and Engineers III	<b>4</b>
<b>MATH-050</b>	Calculus and Analytic Geometry I	<b>4</b>
<b>MATH-060</b>	Calculus and Analytic Geometry II	<b>4</b>
<b>MATH-070</b>	Calculus and Analytic Geometry III	<b>4</b>
<b>MATH-080</b>	Differential Equations	<b>3</b>
<b>TOTAL UNITS</b>		<b>49</b>

**AND SELECT TWO RESTRICTED ELECTIVES FROM:**

<b>ENGIN-036</b>	Engineering Statics	<b>3</b>
<b>ENGIN-038</b>	Manufacturing Processes	<b>3</b>
<b>ENGIN-046</b>	Engineering Dynamics	<b>3</b>
<b>MATH-075</b>	Linear Algebra	<b>3</b>
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>55</b>

The courses required for transfer vary depending on the transfer destination institution and the desired engineering discipline.

IGETC is NOT appropriate for this major. Students interested in engineering should meet with a counselor to plan their schedules as soon as possible.

# Fire Technology

## DEGREE—Associate of Science

Fire Technology

## CERTIFICATE OF ACHIEVEMENT

Fire Technology

## COLLEGE SKILLS CERTIFICATE

Basic Fire Academy

Fire Prevention

Fire Protection

Los Medanos College offers a degree and certificates including Basic Fire Academy. The programs are designed to provide educational opportunities for persons who are seeking employment or advancement in public or private fire protection agencies as well as persons who are pursuing a higher degree in fire administration or fire protection engineering.

For the Associate of Science Degree in Fire Technology, complete

21 units of coursework listed below as well as the General Education requirements. Consult a Los Medanos College counselor to develop your education plan.

For the Certificate of Achievement in Fire Technology, complete

21 units of coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:		UNITS
<b>FIRE-101</b>	Fire Protection Organization	<b>3</b>
<b>FIRE-102</b>	Fire Behavior and Combustion	<b>3</b>
<b>FIRE-103</b>	Fire Protection Equipment & Systems	<b>3</b>
<b>FIRE-104</b>	Building Construction for Fire Protection	<b>3</b>
<b>FIRE-105</b>	Fire Prevention	<b>3</b>
<b>EMS-010</b>	Emergency Medical Technician I	<b>6</b>
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>21</b>

The Basic Fire Academy program prepares students for the California State Firefighter I Certificate. Prerequisites for the Basic Fire Academy include: 1. Successful completion (C grade or better) in Fire 101 and Fire 107, 2. a positive evaluation (sports physical) from an approved medical facility, 3. satisfactory score on the Candidate Physical Agility Test (CPAT) or successful completion of Fire 106 and 4. Proof of medical insurance

For the College Skills Certificate in Fire Prevention, or Fire Protection, complete the 15 units of coursework listed below. These skills certificates are in support of those students wishing to direct their efforts in seeking employment or advancement in a specific division within the fire service.

## College Skills Certificate in Fire Technology

### Basic Fire Academy

REQUIRED COURSES:		UNITS
<b>FIRE-120</b>	Basic Academy	<b>15</b>
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>15</b>

**Fire Prevention Skills Certificate**

REQUIRED COURSES:		UNITS
<b>FIRE-103</b>	Fire Protection Systems	<b>3</b>
<b>FIRE-104</b>	Building Construction Fire	<b>3</b>
<b>FIRE-105</b>	Fire Prevention	<b>3</b>

SELECT 6 UNITS FROM THE FOLLOWING:

<b>FIRE-101</b>	Fire Protection Organization	<b>3</b>
<b>FIRE-102</b>	Fire Behavior	<b>3</b>
<b>FIRE-107</b>	Firefighter Safety	<b>3</b>

TOTAL UNITS REQUIRED FOR THE COLLEGE SKILLS CERTIFICATE **15**

**Fire Protection Skills Certificate**

REQUIRED COURSES:		UNITS
<b>FIRE-101</b>	Fire Protection Organization	<b>3</b>
<b>FIRE-102</b>	Fire Behavior	<b>3</b>
<b>FIRE-107</b>	Firefighter Safety	<b>3</b>

SELECT 6 UNITS FROM THE FOLLOWING:

<b>FIRE-103</b>	Fire Protection Systems	<b>3</b>
<b>FIRE-104</b>	Building Construction Fire	<b>3</b>
<b>FIRE-105</b>	Fire Prevention	<b>3</b>

TOTAL UNITS REQUIRED FOR THE COLLEGE SKILLS CERTIFICATE **15**

# Journalism

**DEGREE**—Associate of Art  
Journalism

This two year program of study leads to transfer to a four year college where students can continue their education and pursue a journalism or communication major. It can also prepare students desiring a more immediate entry into the work force for an entry level position with a community newspaper or other media organization.

For students following either pathway, the program provides practical training for careers in print and online journalism, broadcasting, advertising and public relations. The required courses for the major are listed below in a recommended sequence.

For the Associate of Art Degree in Journalism, complete 21 units of coursework listed below as well as the General Education and graduation requirements. Consult a Los Medanos College counselor to develop your education plan.

REQUIREMENTS: Major and elective requirements in recommended sequence

REQUIRED COURSES: FIRST SEMESTER		UNITS
<b>JOURN-110</b>	Writing for the Media	<b>3</b>
<b>ELECTIVE</b>	Select from accompanying list	<b>3</b>

REQUIRED COURSES: SECOND SEMESTER		UNITS
<b>JOURN-015A</b>	Media Writing Practicum I	<b>1</b>
or		
<b>JOURN-016A</b>	Visual Storytelling Practicum I	<b>1</b>
<b>JOURN-130</b>	Production Practicum I	<b>3</b>
<b>ELECTIVE</b>	Select from accompanying list	<b>3</b>

REQUIRED COURSES: 3RD SEMESTER		UNITS
<b>JOURN-015B</b>	Media Writing Practicum II	<b>1</b>
or		
<b>JOURN-016B</b>	Visual Storytelling Practicum II	<b>1</b>
<b>JOURN-131</b>	Production Practicum II	<b>3</b>

REQUIRED COURSES: FOURTH SEMESTER		UNITS
<b>JOURN-015C</b>	Media Writing Practicum	<b>1</b>
OR		
<b>JOURN-016C</b>	Visual Storytelling Practicum	
or		

The beginning journalism practicum in the other course sequence (15-A or 16-A)

<b>JOURN-035</b>	<b>Mass Communication</b>	<b>3</b>
TOTAL REQUIRED UNITS IN MAJOR COURSES		<b>21</b>

For those with previous publication experience, an additional three units of Publication Production II may be substituted for Publication Production I with the permission of the Journalism Department Chair.

**Approved Electives for Journalism Majors:**

- ART-015:** Graphic Design, **3 units**
- ART-020:** Introduction to Drawing, **3 units**
- ART-025:** Advertising, Marketing and Publication Design, **3 units**
- ART-050:** Designing with Adobe InDesign, **3 units**
- ART-054:** Adobe Photoshop, **3 units**
- ART-057:** Designing with Adobe Illustrator, **3 units**
- ART-072:** Introduction to Digital Photography, **3 units**
- ART-075/JOURN-160:** Documentary Photography/Photojournalism, **3 units**
- COMSC-030:** Web Site Development - Part I, **1.5 units**
- COMSC-031:** Web Site Development - Part II, **1.5 units**
- COMSC-032:** Web Site Development - Dreamweaver and Flash, **3 units**
- ENGL-111:** Creative Writing, **3 units**
- LIBST-014:** Library Research and Information Literacy Skills, **1 unit**
- LIBST-017:** Introduction to Internet Information Resources, **.5 units**
- LIBST-018:** Internet Information Resources – Advanced Search Techniques and Strategies, **.5 units**

Or other related courses approved by Journalism Department Chair

# Kinesiology

**DEGREE**—Associate in Arts Degree for Transfer  
Kinesiology



The Associate in Arts in Kinesiology for Transfer at Los Medanos College prepares students to transfer into a curriculum at a 4 year institution to

pursue a baccalaureate degree in kinesiology or physical education. This major will introduce students to many areas of study including health and fitness, physical education, therapeutic/sport medicine, and coaching/sport instruction. Curriculum in this degree will also provide coursework necessary to prepare students for national certifications in the health/fitness industry such as personal training, group fitness instructor, and lifestyle/weight management consultant.

To achieve the Associate in Arts in Kinesiology for Transfer from Los Medanos College students must (1) complete the 24-25 units of kinesiology degree major emphasis requirements; (2) fulfill requirements of either the CSU-General Education; and/or The Intersegmental General Education Transfer Curriculum (IGETC) (3) complete 60 semester units college transfer level units; and (4) obtain a minimum grade point average of 2.0. Note: students must earn a "C" or better in all courses required in the major area of emphasis.

REQUIRED COURSES:		UNITS
PE 100	Introduction to Kinesiology	3
BIOSC 040	Human Anatomy	5
BIOSC 045	Human Physiology	5

**MOVEMENT BASED COURSES – (3 MAXIMUM):**

SELECT A MAXIMUM OF ONE(1) COURSE FROM ANY THREE (3) OF THE FOLLOWING AREAS FOR A MAXIMUM OF THREE (3) UNITS.

**Aquatics**

PE 017	Lap Swimming	1
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**Combative**

PE 033	Cardio Kickboxing	1
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**Dance**

PE 053	Beginning Jazz Dance	1
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**Fitness**

PE 004	Pilates and More	1
PE 008	Weight Training	1
PE 010	Circuit Training	1
PE 057	Yoga for Health and Fitness	1

**Individual Sports**

PE 030	Tennis	1
PE 042	Golf	1

**Team Sports**

PE 014	Volleyball	1
PE 026	Soccer	1
PE 046	Basketball	1

SELECT TWO (2) OF THE FOLLOWING:

MATH 034	Introduction to Statistics	4
BIOSC 010	General Biology	4
CHEM 007	Intro to General, Organic and Biochemistry	4
or		
CHEM 025	General College Chemistry	5

PHYS 015	Introduction to Physics	4
or		
PHYS 035	College Physics I	4
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>24-25</b>

A minimum of 40-42 units of general education coursework is also required by the CSU General Education-Breadth Requirements in the catalog.

## Liberal Arts

**DEGREES—Associate of Arts**

- Liberal Arts: Arts and Humanities
- Liberal Arts: Behavioral Science and Social Science
- Liberal Arts: Math and Science

The liberal arts major provides a rich educational experience through coursework in a broad range of academic disciplines. Liberal arts provide excellent preparation for university transfer and/or a wide range of careers.

Students graduating with a liberal arts major are able to: read critically and communicate effectively as a writer and a speaker; understand the connections among academic disciplines and apply interdisciplinary approaches to problem solving; think critically and creatively; consider the ethical implications of knowledge; and possess a worldview informed by diverse social, multicultural and global perspectives.

Therefore, the broad based interdisciplinary nature of liberal arts provides a knowledge base and the communication and critical thinking skills necessary for many careers and occupations. The liberal arts major provides solid preparation for upper division work following transfer more specifically, for university programs in teaching and prelaw and for careers such as business, government and communication. With proper course selection (see a counselor), LMC's liberal arts major articulates with CSU's popular upper division liberal studies major, which is the path to a teaching credential program.

The Liberal Arts major incorporates many General Education requirements, so students need only to pass a few additional courses in order to complete the major. The major has three emphasis options: arts and humanities; behavioral science and social science; math and science.

**Liberal Arts: Arts and Humanities**

SELECT 18-20 UNITS FROM:

- Art 5, 6, 7, 8, 9
- Academic and Career Service 10
- Chinese 30, 40
- Drama 15, 16, 30, 70
- Education 40
- English 100, 111, 127, 128, 129, 132, 133, 205, 220, 221, 230, 231
- Filipino 60, 61

continued on next page ►

- French 60, 61, 62
- Humanities 19, 20, 21, 22, 24, 30
- Italian 60, 61
- Journalism 35, 110
- Music 10, 12, 15
- Philosophy 2, 33, 40, 41, 42
- Recording Arts 10, 15
- Sign Language 65, 66, 67, 68, 72
- Spanish 50, 51, 52, 53

**Liberal Arts: Behavioral Science and Social Science**

SELECT 18 UNITS FROM:

- Academic and Career Service 10
- Administration of Justice 110
- Anthropology 5, 6, 7
- Business 109, 294
- Child Development 10, 20, 50
- Economics 5, 10, 11
- Education 40
- History 29, 30, 31, 33, 34, 35, 38, 39, 40, 46, 47, 52
- Philosophy 33
- Political Science 10, 20, 33, 43
- Psychology 10, 11, 12, 14, 17
- Social Science 45
- Sociology 12, 15, 16, 17

**Liberal Arts: Math and Science**

SELECT 18-20 UNITS SELECT FROM:

- Astronomy 10, 11
- Biological Science 5, 7, 10, 20, 21, 30, 40, 45, 50
- Chemistry 6, 7, 8, 25, 26, 28, 29
- Computer Science 40
- Engineering 10
- Math 34, 35, 37, 40, 50, 60, 70, 75, 80
- Nutrition 55
- Physical Science 5
- Physics 15, 35, 36, 40, 41, 42

# Management and Supervision

**DEGREES**—Associate of Science  
Management and Supervision

**CERTIFICATE OF ACHIEVEMENT**  
Management and Supervision

- COLLEGE SKILLS CERTIFICATES**
- Communication Skills for Managers
  - Decision Making Skills for Managers
  - Human Resource Management Skills

- Leaderships Skills for Managers
- Planning Skills for Managers

The Management and Supervision Program is designed to provide students with comprehensive knowledge of supervisory principles and applications, knowledge of human relations, and communication skills. The curriculum is designed to prepare students for entry level positions in management/supervision and to prepare current lead workers, first line supervisors, and middle managers for promotion to higher level positions in business, industry, government, and/or nonprofit organizations.

For the Certificate of Achievement in Management and Supervision, complete 24 units of coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

For the Associate of Science Degree in Management and Supervision, complete 24 units of coursework listed below as well as the general education requirements. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:		UNITS
<b>MANGT-050</b>	Introduction to Supervision	<b>3</b>
<b>BUS-059**</b>	Business Communications	<b>3</b>
<b>MANGT-060</b>	Making Effective Decisions	<b>3</b>
<b>MANGT-065</b>	Mastering Management's Essential Tools	<b>3</b>
<b>MANGT-070</b>	Relating in Human Terms	<b>3</b>
<b>TOTAL UNITS</b>		<b>15</b>

AND SELECT A MINIMUM OF 9 UNITS FROM:

<b>BUS-018</b>	Microsoft Excel for Windows	<b>3</b>
<b>BUS-027</b>	Small Business Management	<b>3</b>
<b>BUS-035</b>	Microsoft Office	<b>3</b>
<b>BUS-035 A/B/C</b>	MS Word/Excel/PowerPoint (each)	<b>1.5</b>
<b>BUS-058</b>	Business English	<b>3</b>
<b>BUS-065</b>	Introduction to Word Processing	<b>3</b>
<b>BUS-109</b>	Introduction to Business	<b>3</b>
<b>BUS-294</b>	Business Law	<b>3</b>
<b>COMSC-040</b>	Introduction to Computers	<b>4</b>
<b>MANGT-075</b>	Managing Human Resources	<b>3</b>
<b>MANGT-170***</b>	OWEE in Management	<b>1-3</b>

Or select other business, management, or real estate courses. Students should consult with a Business Program faculty advisor for help in selecting courses that will best suit their individual needs.

**TOTAL UNITS REQUIRED IN MAJOR COURSES 24**

\*\*\*Occupational Work Experience Education in Management

## College Skills Certificates in Management and Supervision

Currently, the Business Department offers 5 college skills certificates. These career certificates are designed to help students develop employment skills and provide them with recognition in the short-term while they work towards achieving their long-term goals. As students

acquire knowledge and build career skills, they can earn one or more skills certificates.

### Communication Skills for Managers

REQUIRED COURSES:	UNITS
MANGT-050 Introduction to Supervision	3
BUS-059 Business Communications	3
<b>TOTAL REQUIRED UNITS FOR COLLEGE SKILLS CERTIFICATE</b>	<b>6</b>

### Decision Making Skills for Managers

REQUIRED COURSES:	UNITS
MANGT-050 Introduction to Supervision	3
MANGT-060 Making Effective Decisions	3
<b>TOTAL REQUIRED UNITS FOR COLLEGE SKILLS CERTIFICATE</b>	<b>6</b>

### Human Resource Management Skills

REQUIRED COURSES:	UNITS
MANGT-050 Introduction to Supervision	3
MANGT-075 Managing Human Resources	3
<b>TOTAL REQUIRED UNITS FOR COLLEGE SKILLS CERTIFICATE</b>	<b>6</b>

### Leadership Skills for Managers

REQUIRED COURSES:	UNITS
MANGT-050 Introduction to Supervision	3
MANGT-070 Relating in Human Terms	3
<b>TOTAL REQUIRED UNITS FOR COLLEGE SKILLS CERTIFICATE</b>	<b>6</b>

### Planning Skills for Managers

REQUIRED COURSES:	UNITS
MANGT-050 Introduction to Supervision	3
MANGT-065 Mastering Management's Essential Tools	3
<b>TOTAL REQUIRED UNITS FOR COLLEGE SKILLS CERTIFICATE</b>	<b>6</b>

## Mathematics

### DEGREE--Associate of Science Mathematics

For the Associate of Science Degree in Mathematics, complete the units of coursework listed below as well as the General Education and graduation requirements. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:	UNITS
MATH-034* Introduction to Statistics or PHYSICS 040, 041, 042	4
MATH-050 Calculus and Analytic Geometry I	4
MATH-060 Calculus and Analytic Geometry II	4
MATH-070 Calculus and Analytic Geometry III	4
MATH-075 Linear Algebra	3
MATH-080 Differential Equations	3
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>	<b>22</b>

\*If the student is oriented toward mathematics, physics, chemistry, or engineering, the engineering sequence (Physics 40, 41, and 42) is recommended. Otherwise, the general physics sequence may be appropriate (Physics 35 and 36).

Note: A course in computer use and operations such as COMSC 60 is strongly recommended. Some transfer institutions may require a programming class for a math major. Check with the college you plan to transfer to see if you will need to take a programming class.

The basic sequence of recommended courses is for students seeking a career in mathematics or in a related mathematics field. Students are advised to consult with a counselor or math instructor relative to specific requirements for particular transfer institutions.

## Music

### DEGREE--Associate of Arts Music

### CERTIFICATES OF ACHIEVEMENT--Music

- Commercial – Business Management
- Commercial – Performance
- Commercial – Pedagogy

For the Associate of Arts Degree in Music, complete the coursework listed below as well as the General Education requirements. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:	UNITS
MUSIC-005 or 6 Recital Class (2 semesters)	2
MUSIC-013 Musicianship I	2
MUSIC-014 Musicianship II	2
MUSIC-015 Basic Music (or pass theory placement exam)	3
MUSIC-016 Fundamentals of Music Theory	3
MUSIC-017 Harmony	4
MUSIC-018 Advanced Harmony	4
MUSIC-031 Piano I	1.5
MUSIC-032 Piano II	1.5
or	
MUSIC-033A Intermediate Piano	1.5
MUSIC-033B Advanced Piano	1.5
MUSIC-081 Introduction to Improvisation	1
<b>TOTAL UNITS</b>	<b>24</b>

### Music Major Ensemble Requirements

AND SELECT A MINIMUM OF SIX SEMESTERS FROM:

MUSIC-040 Concert Band*	2
MUSIC-050, 052, 054 Chamber Ensembles	(each) 1
MUSIC-060 College Chorus*	2
MUSIC-066 Gospel Choir	1
MUSIC-070 Jazz Ensemble	2
MUSIC-074 Jazz Studio	1
MUSIC-077 Chamber Chorale	1
MUSIC-082 Jazz/Funk/Latin Workshop	1
MUSIC-250 Night Jazz Band	1
<b>TOTAL UNITS</b>	<b>6-12</b>
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>	<b>30-36</b>

## Graduation Requirements

NOTE: Summer Ensembles will not fulfill the above requirements.

STUDENTS WITH AN ADVANCED GUITAR OR ADVANCED PIANO EMPHASIS MAY CHOOSE TO FULFILL THE ENSEMBLE REQUIREMENT BY COMPLETING FOUR SEMESTERS OF THE FOLLOWING:

<b>MUSIC-033A/B</b>	Intermediate/Advanced Piano	
or		
<b>MUSIC-037</b>	Advanced Guitar	
and		

Select two additional semesters from any performance class.

(See list of music major ensemble requirements, page 69)

NOTE: Summer ensembles will not fulfill the above requirements.

### Music Business Management Certificate of Achievement

REQUIRED COURSES:		UNITS
<b>BUS-186</b>	Principles of Financial Accounting	3
<b>BUS-027</b>	Small Business Management	3
<b>BUS-294</b>	Business Law	3
<b>MUSIC-012</b>	Popular Music in American Culture	3
<b>MUSIC-013</b>	Musicianship I	2
<b>MUSIC-015</b>	Basic Music (or pass theory placement exam)	3
<b>MUSIC-028</b>	Songwriting I	1
<b>MUSIC-030</b>	Basic Keyboard Skills	1.5
<b>MUSIC-081</b>	Introduction to Improvisation	1
or		
<b>MUSIC-082</b>	Jazz/Funk/Latin Workshop	(each) 1
<b>MUSIC-089</b>	Music and Recording Industry Business	2
<b>MUSIC-093</b>	Studio Music Production I	2
<b>RA-010</b>	Introduction to Recording Arts	2
<b>RA-021</b>	The Role of the Producer (Basic Session Producing)	2
<b>Any performance classes</b>		4-8
(See list of music major ensemble requirements, page 69)		
<b>TOTAL UNITS</b>		<b>32.5-36.5</b>

AND SELECT TWO COURSES FROM:

<b>MUSIC-034</b>	Jazz/Rock Keyboard	1.5
<b>MUSIC-065</b>	Class Voice	1
<b>MUSIC-067</b>	Jazz and Popular Vocal Technique	1
or		

Two additional group performance-oriented courses in addition to those completed for the core requirement.

**TOTAL UNITS REQUIRED IN MAJOR COURSES 34.5-39**

### Music Performance Certificate of Achievement

For the Certificate of Achievement in Music—Commercial – Music Performance, complete the coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:		UNITS
<b>MUSIC-010</b>	Music Literature	3
<b>MUSIC-012</b>	Popular Music in American Culture	3
<b>MUSIC-013</b>	Musicianship I	2
<b>MUSIC-015</b>	Basic Music (or pass theory placement exam)	3
<b>MUSIC-016</b>	Fundamentals of Music Theory	3
<b>MUSIC-028</b>	Songwriting I	1

<b>MUSIC-030</b>	Basic Keyboard Skills	1.5
<b>MUSIC-038</b>	Studio Musicianship	1
<b>MUSIC-081</b>	Introduction to Improvisation	1
or		
<b>MUSIC-082</b>	Jazz/Funk/Latin Workshop	(each) 1
<b>MUSIC-089</b>	Music and Recording Industry Business	2
<b>MUSIC-093</b>	Studio Music Production I	2
<b>MUSIC-094</b>	Studio Music Production II	2
or		
<b>MUSIC-095</b>	Studio Music Production III	2
<b>RA-010</b>	Introduction to Recording Arts	2
<b>Any performance classes</b>		4-8

(See list of music major ensemble requirements, page 69)

**TOTAL UNITS 27.5-34.5**

AND SELECT TWO COURSES FROM:

<b>MUSIC-034</b>	Jazz/Rock Keyboard	1.5
<b>MUSIC-065</b>	Class Voice	1
<b>MUSIC-067</b>	Jazz and Popular Vocal Techniques	1
or		

Two additional group performance-oriented courses in addition to those completed for the core requirement.

**TOTAL UNITS REQUIRED IN MAJOR COURSES 29.5-37**

### Music Pedagogy Certificate of Achievement

For the Certificate of Achievement in Music—Commercial – Pedagogy, complete the coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:		UNITS
<b>MUSIC 57</b>	Private Lessons (2 semesters)	2
<b>MUSIC 10</b>	Music Literature	3
<b>MUSIC 12</b>	Popular Musics in America	3
<b>MUSIC 13</b>	Musicianship I	2
<b>MUSIC 14</b>	Musicianship II	2
<b>MUSIC 15</b>	Basic Music (or pass theory placement exam)	3
<b>MUSIC 16</b>	Fundamentals of Music Theory	3
<b>MUSIC 17</b>	Fundamentals of Music Harmony	4
<b>MUSIC 28</b>	Songwriting I	1
<b>MUSIC 81</b>	Introduction to Improvisation	1
or		
<b>MUSIC 82, 83, or 84</b>	Jazz/Funk/Latin Workshop	(each) 1
<b>MUSIC 89</b>	Music Business Management	2
<b>MUSIC 93</b>	Intro to MIDI	2
<b>Any performance classes</b>		4-8
(See list of music major ensemble requirements, page 69)		

SELECT A MINIMUM OF TWO SEMESTERS OF LEVEL APPROPRIATE PIANO CLASSES (TOTAL 3 UNITS) MUSIC 30, 31, 32, 33A, 33B.

AND SELECT TWO OF THE FOLLOWING:

<b>MUSIC 34</b>	Jazz/Rock Keyboard	1.5
<b>MUSIC 65</b>	Class Voice	1
<b>MUSIC 67</b>	Jazz and Popular Vocal Technique	1

**Two additional group performance-oriented courses in addition to those completed for the core requirement.**

TOTAL UNITS REQUIRED IN MAJOR COURSES **35.5-39.5**

**Music career possibilities include:**

- 1) **Professional musician** — conductor, concert artist, studio musician, symphony orchestra member, opera singer, composer, accompanist, arranger;
- 2) **Teaching music** — band director, orchestra director, choir director, private instructor, music teacher (elementary through college in public or private schools);
- 3) **Commercial** — instrument sales, instrument repair, pop singer, orchestrator, arranger, music publisher, music activities producer, agent-manager, songwriter;
- 4) **Radio, TV, recording industry** — disc jockey, recording artist, recording engineer, movie, TV, radio music director (see also Recording Arts section);
- 5) **Church-related** — minister of music, organist, and choir director;
- 6) **Other** — music therapist, music librarian, piano tuner, acoustical engineer, music personnel manager, accompanist, music critic, music software writer/technician.

Students pursuing an associate degree will find it difficult to complete all of the general education requirements and the program requirements in two years. Students should budget time and plan carefully. Instructors in the music area will assist students in determining the proper sequence of classes.

# Nursing

**DEGREES**—Associate of Science

**ADN**—Registered Nursing

**ADN**—LVN to RN

**CERTIFICATE OF ACHIEVEMENT**—Vocational Nursing

All students who meet admissions requirements are eligible to apply to the nursing programs. Criteria and complete information on the selection process as well as the philosophy and objectives of each program are described in the Nursing Applicant Handbook, which is available in the LMC Bookstore and on the LMC web site ([www.losmedanos.edu/nursing](http://www.losmedanos.edu/nursing))

The handbook also contains complete information on all options for advanced placement. Please refer to the Handbook and Nursing Department website for updates and estimated costs for the program.

## Registered Nursing

The registered nursing program requires two academic years beyond completion of the prerequisite courses and General Education requirements. Completion of prerequisite courses and required GPA are required for admission eligibility to the program. Only those students formally admitted to the program may enroll in registered nursing courses. Students may, however, enroll in other non-nursing courses designated as part of the registered nursing curriculum while awaiting admission to the program.

Completion of the Registered Nursing Program at Los Medanos College qualifies students to take the State Board Examination (NCLEX-RN) for licensure as a Registered Nurse (RN).

## ADN Program Curriculum

REQUIRED COURSES: PREREQUISITES		UNITS
<b>ENGL-100</b>	College Composition	<b>3</b>
<b>MATH-030</b>	Intermediate Algebra	<b>4</b>
<b>BIOSC-040</b>	Human Anatomy	<b>5</b>
<b>BIOSC-045</b>	Human Physiology	<b>5</b>
<b>BIOSC-050</b>	Intro to Microbiology	<b>4</b>
<b>PSYCH-010 or 11</b>	General Psychology	<b>3</b>
<b>TOTAL UNITS</b>		<b>24</b>

REQUIRED BY THE BOARD OF REGISTERED NURSING		UNITS
<b>SPCH-110</b>	Oral Communication	<b>3</b>

ADVISORY COURSE		UNITS
<b>RNURS-001</b>	Nursing Career Seminar	<b>0.3</b>

## Registered Nursing Curriculum

REQUIRED COURSES: FIRST SEMESTER		UNITS
<b>RNURS-022</b>	Foundations of Nursing Practice	<b>9.5</b>
<b>RNURS-023</b>	Nursing Skills Simulation I	<b>1</b>
<b>RNURS-024</b>	Pharmacology for RN Program I	<b>1</b>

REQUIRED COURSES: SECOND SEMESTER		UNITS
<b>RNURS-026</b>	Nursing in Health and Illness I	<b>9.5</b>
<b>RNURS-027</b>	Nursing Skills Simulation II	<b>1</b>
<b>RNURS-028</b>	Pharmacology for RN Program II	<b>1</b>

REQUIRED COURSES: THIRD SEMESTER		UNITS
<b>RNURS-031</b>	Nursing in Health & Illness II	<b>9.5</b>
<b>RNURS-033</b>	Nursing Skills Simulation III	<b>1</b>
<b>RNURS-034</b>	Pharmacology for RN Program III	<b>1</b>

REQUIRED COURSES: FOURTH SEMESTER		UNITS
<b>RNURS-030</b>	Leadership/Management/Professionalism	<b>1</b>
<b>RNURS-036</b>	Nursing in Health & Illness III	<b>9.5</b>
<b>RNURS-038</b>	Nursing Skills Simulation IV	<b>1</b>
<b>RNURS-039</b>	Pharmacology for RN Program IV	<b>1</b>
<b>TOTAL UNITS REQUIRED IN NURSING CURRICULUM</b>		<b>47</b>

## LVN to RN Program

The LVN to RN program for California Licensed Vocational Nurses requires successful completion of all prerequisites, required GPA, the second-year RN curriculum, and General Education requirements.

Only those students formally admitted to the program may enroll in the registered nursing courses. Students may, however, enroll in those non-nursing courses designated below as part of the registered nursing curriculum, while awaiting admission to the program. Please refer to the Nursing Application Handbook for current admission eligibility criteria and updates.

continued on next page ►

## Graduation Requirements

Completion of the LVN to RN Program at Los Medanos College qualifies students to take the State Board Examination (NCLEX-RN) for licensure as Registered Nurse.

### LVN to RN Program Curriculum

REQUIRED COURSES: PREREQUISITES		UNITS
ENGL-100	College Composition	3
MATH-030	Intermediate Algebra	4
BIOSC-040	Human Anatomy	5
BIOSC-045	Human Physiology	5
BIOSC-050	Intro to Microbiology	4
PSYCH-010 or 11	General Psychology	3
<b>TOTAL UNITS</b>		<b>24</b>
REQUIRED COURSES: GRADUATION REQUIREMENTS		UNITS
General Education Courses (two)- see college counselor		6

REQUIRED BY THE BOARD OF REGISTERED NURSING		UNITS
SPCH-110	Oral Communication	3

### Registered Nursing Curriculum

REQUIRED COURSES:		UNITS
RNURS-020	Transition to RN Program Third Semester	.3
RNURS-031	Nursing in Health & Illness II	9.5
RNURS-033	Nursing Skills Simulation III	1
RNURS-034	Pharmacology for RN Program III Fourth Semester	1
RNURS-030	Leadership/Management/Professionalism	1
RNURS-036	Nursing in Health & Illness III	9.5
RNURS-038	Nursing Skills Simulation IV	1
RNURS-039	Pharmacology for RN Program IV	1
<b>TOTAL UNITS REQUIRED IN REGISTERED NURSING CURRICULUM</b>		<b>24.3</b>

### Vocational Nursing

The Vocational Nursing Program is three semesters in length. The Certificate of Achievement is awarded upon successful completion of the program. Completion of prerequisite courses and required GPA are required for admission eligibility to the program. Only those students formally admitted to the program may enroll in Vocational Nursing courses.

Completion of the vocational nursing program qualifies students to take the State Board Examination (NCLEX-PN) for licensure as a vocational nurse (LVN).

### Certificate of Achievement -Vocational Nursing

RECOMMENDED COURSES		UNITS
RNURS-001	Nursing Careers Seminar	0.3
VONUR-020	Clinical Pharmacology and skills for Medication Administration for Healthcare Occupations	3

REQUIRED COURSES: PREREQUISITES		UNITS
BIOSC-030	Intro to Anatomy and Physiology	3
COMSC-049	Computer Literacy	1.5
ENGL-090	Integrated Reading, Writing, and Critical Thinking	5
MATH-025	Elementary Algebra	4
NUTRI-055	Introduction to Nutrition	3
VONUR-008	Medical Terminology	1
<b>TOTAL UNITS REQUIRED FOR PREREQUISITE COURSES</b>		<b>17.5</b>

REQUIRED COURSES: FIRST SEMESTER		UNITS
VONUR-004	Introduction to Clinical Pharmacology	1
VONUR-005	Fundamentals of Vocational Nursing	6
VONUR-006	Fundamentals of Vocational Nursing Practice	6
VONUR-007	Vocational Nursing Role Relationships	1

REQUIRED COURSES: SECOND SEMESTER		UNITS
VONUR-010	Intermediate Core Concepts in Clinical Pharmacology	1
VONUR-011	Medical Surgical Nursing	5
VONUR-012	Medical Surgical Nursing Practice	6

REQUIRED COURSES: THIRD SEMESTER		UNITS
VONUR-015	Advanced Core Concepts in Clinical Pharmacology	1
VONUR-016	Family Centered Nursing	5
VONUR-017	Family Centered Nursing Practice	6
VONUR-018	Professional Issues in Vocational Nursing	1
<b>TOTAL UNITS REQUIRED FOR VOCATIONAL NURSING CURRICULUM</b>		<b>39</b>

# Process Technology

## DEGREE--Associate of Science

Process Technology

## CERTIFICATE OF ACHIEVEMENT

Process Technology

The Process Technology Program is designed to provide students with skills necessary to succeed in the chemical and refining industries. "Process technicians" are skilled plant operators who safely run the refineries and chemical plants on a 24 hours per day / 365 days per year basis. The curriculum is a combination of hands-on laboratory experiences, classroom lectures, and industrial site visits.

For the Associate of Science Degree in Process Technology, complete 35 units of coursework listed below as well as the General Education requirements. Consult a Los Medanos College counselor to develop your education plan for the Associate of Science Degree.

For the Certificate of Achievement in Process Technology, complete 35 units of coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

RECOMMENDED COURSES: PROGRAM ENTRY		UNITS
<b>MATH-025</b>	Elementary Algebra	5
<b>ENGL-090</b>	Integrated Reading, Writing, and Critical Thinking	5

REQUIRED COURSES:		UNITS
<b>PTEC-007</b>	Industrial Technology Career Skills	1
<b>PTEC-010</b>	Introduction to Process Technology	3
<b>PTEC-012</b>	Petrochemical Safety, Health and Environment	1
<b>PTEC-024</b>	Process Instrumentation	3
<b>PTEC-025</b>	Process Technology I – Equipment	3
<b>PTEC-027</b>	Applied Instrumentation	1
<b>PTEC-035</b>	Process Technology II – Systems	3
<b>PTEC-044</b>	Petrochemical Simulation Laboratory	1
<b>PTEC-045</b>	Process Technology III – Operations	3
<b>PTEC-048</b>	Process Trouble Shooting	3
<b>PTEC-060</b>	Industrial Technology Employment Preparation	1
<b>MATH-030*</b>	Intermediate Algebra	4
<b>CHEM-006</b> or	Introduction to Inorganic and Physical Chemistry	4
<b>CHEM-007</b>	Introduction General, Organic and Biochemistry	4
<b>PHYS-015**</b>	Introduction to Physics	4
<b>TOTAL UNITS</b>		<b>35</b>

**TOTAL UNITS REQUIRED IN MAJOR COURSES** 35

\*Math 30 also satisfies the Math requirement for the AS Degree.  
 \*\* Physics 15 also satisfies the Physical Science requirement for the AS Degree.

# Physics

## DEGREE—Associate in Science for Transfer

The Associate in Science in Physics for Transfer Degree at Los Medanos College prepares students to transfer into a curriculum at a 4 year institution to pursue a baccalaureate degree in physics. This major will introduce students to many areas of study including engineering, physics, chemistry, astronomy, geology, and certain specialized majors such as architecture.

To achieve the Associate in Science in Physics for Transfer from Los Medanos College students must (1) complete the physics degree requirements; (2) fulfill CSU-General Education requirements; or IGETC (3) complete 60 college transferrable units; and (4) obtain a minimum grade point average of 2.0.

REQUIRED COURSES:		UNITS
<b>PHYS 040</b>	Physics for Scientists and Engineers I	4
<b>PHYS 041</b>	Physics for Scientists and Engineers II	4

<b>PHYS 042</b>	Physics for Scientists and Engineers III	4
<b>MATH 050</b>	Calculus and Analytic Geometry I	4
<b>MATH 060</b>	Calculus and Analytic Geometry II	4
<b>MATH 070</b>	Calculus and Analytic Geometry III	4
<b>TOTAL UNITS</b>		<b>24</b>

A minimum of 36 units of general education coursework is also required by the CSU General Education-or IGETC Breadth Requirements in the catalog.

PHYSICS TRANSFER MAJOR REQUIREMENTS:	UNITS
<b>Physics Program Requirements</b>	<b>24</b>
<b>General Education-Breadth Requirements</b>	<b>36</b>

8 units may double count toward the 24 unit major preparation and the CSU GE pattern. The major requires 60 total units; double counting units does not lower the required unit count for the degree. The balance of double counted units would be made up with CSU or IGETC transferable elective classes. If you are double counting units between the major and the CSU GE or IGETC pattern, you must take an additional 8 elective units to reach the 60-unit requirement for the Associate in Science in Physics for Transfer. See a counselor or department faculty for more information on suggested electives.

# Psychology

## DEGREE—Associate in Arts for Transfer

### Psychology

The psychology major at Los Medanos College will provide students with an introduction to the field of psychology. This major will focus on behavior and its contributions to understanding social evolution, interpersonal relationships and healthy and disordered functioning. Students will be exposed to psychology as the scientific study of thought, feeling and behavior and as a helping profession dedicated to solving human problems.

Psychology includes a variety of subfields, including clinical, counseling, developmental, forensic, social, cognitive, biological, industrial, health, educational and school psychology. Most career options require more than two years of college study. The Associate in Arts Degree in Psychology for Transfer provides preparation for transfer to psychology programs at four-year institutions. Transferring, completion of a bachelor's degree in psychology can lead to careers as psychotherapists, college professors, scientific researchers, administrations and business consultants.

To achieve the Associate in Arts Degree in Psychology for Transfer from LMC, students must (1) complete the psychology major requirements (2) fulfill requirements of either the CSU-General Education (3) complete 60 units college transfer level units and (4) obtain a minimum grade point average of 2.0.

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## Graduation Requirements

REQUIRED COURSES:		UNITS
<b>MATH-034</b>	Introduction to Statistics	<b>4</b>
<b>PSYCH-011</b>	General Psychology	<b>3</b>
<b>PSYCH-017</b> or <b>SOCIO-017</b>	Introduction to Research	<b>3</b>
<b>BIOSC-010</b>	Introduction to Biology	<b>4</b>
<b>SOCIO-015</b>	Introduction to Sociology	<b>3</b>
<b>TOTAL UNITS</b>		<b>17</b>
<b>SELECT ONE COURSE:</b>		
<b>PSYCH-010</b>	Individual and Social Processes	<b>3</b>
or		
<b>PSYCH-012</b> or <b>SOCIO-012</b>	Marriage and Family	<b>3</b>
<b>TOTAL UNITS</b>		<b>3</b>
<b>TOTAL UNITS REQUIRED FOR DEGREE</b>		<b>20</b>

# Real Estate

**DEGREES**—Associate of Science  
Real Estate

**CERTIFICATE OF ACHIEVEMENT**  
Real Estate

**COLLEGE SKILLS CERTIFICATE**  
Real Estate Sales

LMC offers students the choice of pursuing a degree or a certificate in real estate. The degree and certificate programs include business courses as well as skills in real estate. The Real Estate Program provides students with the theory, knowledge and skills necessary for entry level real estate positions, and will prepare students for state licensing.

REQUIRED COURSES:		UNITS
<b>REAL-005*</b>	Real Estate Principles	<b>3</b>
<b>REAL-020*/**</b>	Real Estate Practice	<b>3</b>
<b>REAL-025**/**</b>	Real Estate Finance	<b>3</b>
<b>TOTAL UNITS</b>		<b>9</b>
<b>AND SELECT 18 UNITS OF ELECTIVE COURSES FROM:</b>		
<b>BUS-018</b>	Microsoft Excel for Windows	<b>3</b>
<b>BUS-109</b>	Introduction to Business	<b>3</b>
<b>BUS-181***</b>	Accounting: Applied Principles	<b>3</b>
<b>BUS-186**</b>	Financial Accounting	<b>4</b>
<b>BUS-294</b>	Business Law*	<b>3</b>
<b>BUS-027</b>	Small Business Management	<b>3</b>
<b>BUS-185</b>	Computerized Assisted Accounting	<b>3</b>
<b>BUS-029</b>	QuickBooks	<b>2</b>
<b>Any Management course</b>		<b>3</b>
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES.</b>		<b>27</b>

\*Required for California Real Estate Sales License

\*\*Required for California Real Estate Broker's License

\*\*\*Electives for California Real Estate Sales License

\*\*\*\*Electives for California Real Estate Sales and Broker's License

□Courses currently not offered at LMC, can be taken at DVC. REAL-010 equivalent to RE-161, REAL 015 equivalent to RE-162, consult with a Business faculty advisor.

The Real Estate courses prepare the student to complete the California State Broker's License Examination.

## College Skills Certificate in Real Estate

This career certificate is designed to help students develop employment skills and provide them with recognition in the short-term while they work towards achieving their long-term goals.

### Real Estate Sales

REQUIRED COURSES:		UNITS
<b>REAL-005</b>	Real Estate Principles	<b>3</b>
<b>REAL-020</b>	Real Estate Practice	<b>3</b>
<b>TOTAL UNITS</b>		<b>6</b>

**AND SELECT A MINIMUM OF 3 UNITS FROM:**

<b>REAL-025</b>	Real Estate Finance	<b>3</b>
<b>BUS-045</b>	Office Accounting Essentials	<b>3</b>
<b>BUS-181</b>	Accounting: Applied Principles	<b>3</b>
<b>BUS-186</b>	Financial Accounting	<b>3</b>
<b>BUS-294</b>	Business Law+	<b>3</b>

**TOTAL REQUIRED UNITS FOR COLLEGE SKILLS CERTIFICATE** **9**

# Recording Arts

**DEGREE**—Associate of Arts  
Recording Arts

**CERTIFICATE OF ACHIEVEMENT**  
Recording Arts

The Recording Arts Program at LMC is the finest of its kind in the U.S.A. Curriculum is designed in cooperation with audio engineers, producers, and other recording arts professionals. The interdisciplinary program includes courses in music, audio engineering, and business. Faculty, comprised of recording engineers and other prominent professionals from the audio industry, prepare students technically and intellectually to compete in the recording industry job market.

For the Associate of Arts Degree in Recording Arts, complete 32 units of coursework listed below as well as the General Education and requirements. Consult a Los Medanos College counselor to develop your education plan.

For the Certificate of Achievement in Recording Arts, complete 32 units of coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:	UNITS
RA-010 Recording Arts I	3
RA-012 Sound Reinforcement	3
RA-015 Music Fundamentals for Audio Professionals	3
RA-020 Recording Arts II	3
RA-021 The Role of the Producer	2
RA-025 Basic Tracking Sessions	3
RA-030 Recording Arts III	3
RA-032 Recording Arts Workshop	(min) 1
RA-035 Protocols Production & Editing	3
RA-040 Recording Arts IV	3
<b>TOTAL UNITS</b>	<b>27</b>

**AND SELECT A MINIMUM OF 5 UNITS FROM:**

ETEC-010 Direct Current Circuits	3
MUSIC-015 Basic Music	3
MUSIC-089 Music and Recording Industry Business	2
MUSIC-093 Studio Music Production I	2
MUSIC-094 Studio Music Production II	2
MUSIC-095 Studio Music Production III	2
RA-033 Summer Recording Arts Workshop	3
or	
<b>Electives approved by Recording Arts Department Chair</b>	
<b>TOTAL UNITS</b>	<b>5</b>

**TOTAL UNITS REQUIRED IN MAJOR COURSES 32**

# Sociology

## DEGREE--Associate in Arts Degree for Transfer Sociology

The sociology major at Los Medanos College will provide students with an introduction to the field of sociology. This major will focus on the principles and theoretical perspectives of sociology. Students will be provided an opportunity to examine how sociological phenomena can influence social institutions and social behavior. The sociological examination of the various modes of inquiry will develop an awareness of the importance as well as the complexity of collecting and reporting research data.

Most career options require more than two years of college study. This associate degree provides preparation for transfer to sociology programs at four year institutions. Transferring and the completion of the baccalaureate degree and graduate studies in sociology can lead to a variety of careers in social services, college and university teaching and research, administration and government fields and business consultants.

To achieve the Associate of Arts in Sociology for Transfer from Los Medanos College, students must: 1. complete the Sociology major requirements, 2. fulfill requirements of either the CSU-General Education or the IGETC general education pattern, 3. complete 60 units of college transfer level courses, and 4. obtain a minimum grade point average of 2.0.

REQUIRED COURSES:	UNITS
SOCIO-015 Introduction to Sociology	3
MATH-034 Introduction to Statistics	4
<b>SOCIO-017 or PSYCH-017</b>	
Introduction to Research	3
<b>SOCIO-012 or PSYCH-012</b>	
Marriage and Family	3
SOCIO-016 Introduction to Social Problems	3
PSYCH-011 General Psychology	3
<b>TOTAL UNITS REQUIRED FOR DEGREE</b>	<b>19</b>

# Travel Marketing

**DEGREE--Associate of Science**  
Travel Marketing

**CERTIFICATE OF ACHIEVEMENT**  
Travel Marketing

**COLLEGE SKILLS CERTIFICATES**  
Travel Marketing  
Home-Based Travel Specialist  
Cruise Specialist

## Travel Marketing Associate Degree and Certificate of Achievement

This 21-unit certificate provides a well-rounded education and includes a selection of courses designed to prepare students for placement in a position as a travel professional in the travel industry. Opportunities include employment as a full-service travel consultant in a travel agency or a travel specialist in the selected area of specialization. This certificate can be completed in two semesters.

In addition to the 21 units of courses in the Travel Marketing Certificate of Achievement, complete the Los Medanos College General Education requirements for an Associate of Science Degree in Travel Marketing. This degree can lead to placement in positions of greater responsibility in the travel industry. Consult a Los Medanos College counselor to develop your personal education plan.

REQUIRED COURSES:	UNITS
TRAVL-072 Introduction to Travel	3
TRAVL-076 Travel Sales and Marketing	3
TRAVL-077 Customized Vacation Planning	2
TRAVL-095 Advanced Travel Concepts	3
<b>TOTAL UNITS</b>	<b>11</b>

**AND SELECT 3 UNITS OF DESTINATION SPECIALIST GEOGRAPHY COURSES FROM:**

TRAVL-074 North American Destination Specialist	3
TRAVL-075 Western Europe Destination Specialist	3
TRAVL-083 Hawaii Destination Specialist	1.5
TRAVL-084 Caribbean Destination Specialist	1.5
TRAVL-085 South Pacific Destination Specialist	1.5
TRAVL-087 Mexico Destination Specialist	1.5
TRAVL-096 Alaska Destination Specialist	1.5

## Graduation Requirements

**AND SELECT A MINIMUM OF 7 ELECTIVE UNITS FROM:**

TRAVL-074	North American Destination Specialist	3
TRAVL-075	Western Europe Destination Specialist	3
TRAVL-082	All About Cruising	3
TRAVL-083	Hawaii Destination Specialist	1.5
TRAVL-084	Caribbean Destination Specialist	1.5
TRAVL-085	South Pacific Destination Specialist	1.5
TRAVL-087	Mexico Destination Specialist	1.5
TRAVL-096	Alaska Destination Specialist	1.5
TRAVL-101	Home-Based Travel – Is it for You?	.5
TRAVL-102	Establishing a Home-Based Travel Business	.5
TRAVL-103	Marketing and Promoting a Home-Based Travel Business	.5
TRAVL-104	Resources for the Home-Based Travel Professional	.5
TRAVL-105	Business and Financial Plans for Home-Based Travel	.5
TRAVL-106	Home-Based Travel and the Law	.5
TRAVL-170	Cooperative Education in Travel (Travel Internship)	1-2
TRAVL 900*	Selected Topics in Travel	.3 –3
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>21</b>

\*TRAVL 900 courses do not necessarily transfer to four-year colleges and universities (please see counselor regarding transfer information and degree applicability).

### College Skills Certificates in Travel

#### Travel Marketing

This 12-unit certificate provides a good foundation for placement in an entry-level position in the travel industry, such as a travel assistant in a travel agency. Required courses are not offered every semester, so careful planning will minimize the amount of time to complete this certificate.

REQUIRED COURSES :	UNITS	
TRAVL-072	Introduction to Travel	3
TRAVL-076	Travel Sales and Marketing	3
TRAVL-095	Advanced Travel Concepts	3
<b>TOTAL UNITS</b>		<b>9</b>

**AND SELECT A MINIMUM OF 3 ELECTIVE UNITS FROM:**

TRAVL-074	North American Destination Specialist	3
TRAVL-075	Western Europe Destination Specialist	3
TRAVL-077	Customized Vacation Planning	2
TRAVL-082	All About Cruising	3
TRAVL-083	Hawaii Destination Specialist	1.5
TRAVL-084	Caribbean Destination Specialist	1.5
TRAVL-085	South Pacific Destination Specialist	1.5
TRAVL-087	Mexico Destination Specialist	1.5
TRAVL-096	Alaska Destination Specialist	1.5
TRAVL-101	Home-Based Travel – Is it for You?	.5
TRAVL-102	Establishing a Home-Based Travel Business	.5
TRAVL-103	Marketing and Promoting a Home Based Travel Business	.5
TRAVL-104	Resources for the Home-Based Travel Professional	.5

TRAVL-105	Business and Financial Plans for Home-Based Travel	.5
TRAVL-106	Home-Based Travel and the Law	.5
TRAVL-170	Cooperative Education in Travel (Travel Internship)	1-2
TRAVL 900*	Selected Topics in Travel	.3 –3
<b>TOTAL UNITS REQUIRED IN COLLEGE SKILLS CERTIFICATE</b>		<b>12</b>

#### Home-Based Travel Specialist

This 17-unit certificate is the first of its kind in the country. As the number of home-based travel professionals grows, the demand for education also grows. Required courses for this certificate will address critical issues and considerations for students who are planning to establish a home-based travel business. Required courses are not offered every semester, so careful planning will minimize the amount of time to complete this certificate.

Required Courses:	Units	
TRAVL-072	Introduction to Travel	3
TRAVL-076	Travel Sales and Marketing	3
TRAVL-101	Home-Based Travel – Is it for You?	.5
TRAVL-102	Establishing a Home-Based Travel Business	.5
TRAVL-103	Marketing and Promoting a Home Based Travel Business	.5
TRAVL-104	Resources for the Home-Based Travel Professional	.5
TRAVL-105	Business and Financial Plans for Home-Based Travel	.5
TRAVL-106	Home-Based Travel and the Law	.5
<b>TOTAL UNITS</b>		<b>9</b>

**SELECT 3 UNITS OF DESTINATION SPECIALIST GEOGRAPHY COURSES FROM:**

TRAVL-074	North American Destination Specialist	3
TRAVL-075	Western Europe Destination Specialist	3
TRAVL-083	Hawaii Destination Specialist	1.5
TRAVL-084	Caribbean Destination Specialist	1.5
TRAVL-085	South Pacific Destination Specialist	1.5
TRAVL-087	Mexico Destination Specialist	1.5
TRAVL-096	Alaska Destination Specialist	1.5

**AND SELECT A MINIMUM OF 5 ELECTIVE UNITS FROM:**

TRAVL-074	North American Destination Specialist	3
TRAVL-075	Western Europe Destination Specialist	3
TRAVL-077	Customized Vacation Planning	2
TRAVL-082	All About Cruising	3
TRAVL-083	Hawaii Destination Specialist	1.5
TRAVL-084	Caribbean Destination Specialist	1.5
TRAVL-085	South Pacific Destination Specialist	1.5
TRAVL-095	Advanced Travel Concepts	3
TRAVL-087	Mexico Destination Specialist	1.5
TRAVL-096	Alaska Destination Specialist	1.5
TRAVL-114	Group Travel Management	1.5
TRAVL 900*	Selected Topics in Travel	.3 –3
<b>TOTAL UNITS REQUIRED IN COLLEGE SKILLS CERTIFICATE</b>		<b>17</b>

\*TRAVL 900 courses do not necessarily transfer to four-year colleges and universities (please see counselor regarding transfer information and degree applicability).

### Cruise Specialist

This 8-unit certificate prepares the student to specialize in selling cruises. Employment possibilities include working for a full-service or a cruise-only travel agency, or operating a home-based travel business. Required courses are not offered every semester, so careful planning will minimize the amount of time to complete this certificate.

REQUIRED COURSES:		UNITS
TRAVL-082	All About Cruising	3
TRAVL-076	Travel Sales and Marketing	3
TRAVL-077	Customized Vacation Planning	2
<b>TOTAL UNITS REQUIRED IN COLLEGE SKILLS CERTIFICATE</b>		<b>8</b>

Note that it is practical to work toward multiple certificates at the same time. This will allow students to personalize their education and tailor it to meet their individual goals. For information regarding specific course requirements, contact the Travel Department chair or inquire in the Counseling Center. You may also check online at [www.losmedanos.edu/travel](http://www.losmedanos.edu/travel).

## Welding Technology

**DEGREE**—Associate of Science  
Welding Technology

**CERTIFICATE OF ACHIEVEMENT**  
Welding Technology

**COLLEGE SKILLS CERTIFICATE**  
Welding Pre-Apprenticeship

The program in Welding Technology offers instruction in the principles and practices of welding processes. Successful completion of the program provides sufficient training for entry level into the field of production type welding. Students have access to the latest instructional and practical experiences in a spacious, modern shop facility.

For the Associate of Science Degree in Welding Technology, complete 24 units of coursework listed below as well as the General Education requirements. Consult a Los Medanos College counselor to develop your education plan for the Associate of Science Degree.

For the Certificate of Achievement in Welding Technology, complete 24 units of coursework listed below. Consult a Los Medanos College counselor to develop your education plan.

REQUIRED COURSES:		UNITS
WELD-010	Basic Arc Welding Theory	3
WELD-011	Basic Arc Welding Practice	2
WELD-015	Basic Metal Arc Oxyacetylene Welding	2
WELD-016	Advanced Oxyacetylene Welding	1
WELD-020	Intermediate Shielded Metal Arc Welding Practice	2
WELD-021	Advanced Arc Welding Practice	3
WELD-031	TIG, MIG and FCA Welding Practice	3
WELD-033	MIG Welding Practice	2
WELD-035	Blueprint Reading for Welders	3

WELD-040	TIG, MIG and FCA Welding Theory	3
WELD-041	Pipe Welding Practice	3
WELD-043	Flux-Core Arc Welding Practice	3
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>24</b>

### Welding Pre-Apprenticeship

REQUIRED COURSES:		UNITS
WELD-010	Basic Arc Welding Theory	3
WELD-011	Basic Shielded Metal Arc Welding Practice	2
MATH-012	PreAlgebra Math	4
<b>TOTAL UNITS REQUIRED IN MAJOR COURSES</b>		<b>9</b>

## World Languages

### COLLEGE SKILLS CERTIFICATE

- American Sign Language
- Cultural Competence in Modern World Language
- Spanish

### American Sign Language

REQUIRED COURSES		UNITS
SIGN 068	American Sign Language IV	3
SIGN 072	Deaf Culture	3
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>6</b>

### Cultural Competence in Modern World Language American Sign Language

ANY THREE OF THE FIVE WORLD LANGUAGES LISTED BELOW:		UNITS
SIGN 065	American Sign Language I	3
FILIP 060	Elementary Filipino I	5
ITAL 060	Elementary Italian I	5
FRNCH 060	Elementary French I	5
SPAN 050	Elementary Spanish I	5
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE:</b>		<b>13-15</b>

### Spanish

REQUIRED COURSES:		UNITS
SPAN-053	Intermediate Spanish II	5
<b>TOTAL UNITS REQUIRED FOR COLLEGE SKILLS CERTIFICATE</b>		<b>5</b>