



## CREDIT INSTRUCTIONAL PROGRAMS

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## INSTRUCTIONAL PROGRAMS

# OVERVIEW: CREDIT INSTRUCTIONAL PROGRAMS

Mt. SAC offers a full range of credit general education and career technical education courses to prepare students for immediate employment and/or transfer to four-year institutions. Students may choose from approximately 1,400 credit courses in their pursuit of one of the 76 discipline-specific associate degrees, 14 discipline-specific associate degrees for transfer, and/or 162 discipline-specific certificates available at Mt. SAC. Credit instruction accounted for 81 percent of the College's FTES (Full-time Equivalent Students) in 2015–2016. (Refer to Chapter 2: *Profile of the College's Communities and Students*.)

Mirroring its communities, the College's credit student population is diverse in terms of race/ethnicity, household income, and household education level. In fall 2015 the Mt. SAC credit student population was 89 percent non-white; the two largest ethnic groups were Latino (62 percent) and Asian (15.3 percent). Almost half (43 percent) of credit students receive Pell grants, and 73 percent receive some form of financial aid. In addition, 49 percent of credit students are first-generation college students. Chapter 2: *Profile of the College's Communities and Students* presents a demographic profile of Mt. SAC's student body and their achievements.

The *Mt. SAC 2018 Educational and Facilities Master Plan* is grounded in an analysis of the current status and the anticipated future of the instructional programs and services offered to students. The first section of this chapter presents Mt. SAC's credit instructional disciplines, followed by School of Continuing Education programs. The

description of each instructional discipline includes the following five sections:

- o Description of the instructional discipline
- o Data on the current performance the instructional discipline
- o Projected growth of the instructional discipline over the next decade
- o Challenges and opportunities that the instructional discipline anticipates in the next decade
- o Implications for facilities

### DESCRIPTION

The description of each instructional discipline briefly explains the role of that discipline in a students' journey at Mt. SAC.

### DATA

Data on each instructional discipline is presented for fall 2012 and fall 2015. This information includes the following three performance benchmarks, which are defined with more detail in a glossary at the end of this chapter.

- o Enrollment as measured by the number of enrollments, the number of sections offered, and the average enrollment per section. Enrollments count individual students more than once if they enrolled in more than one course with the same discipline-specific course identifier.
- o Productivity as measured by the fill rate at census, the amount of FTES generated by the discipline, and the full-time equivalent faculty (FTEF) assigned to the discipline.
- o Student retention and success as measured by a comparison of the retention rates in two

## INSTRUCTIONAL PROGRAMS

### OVERVIEW: CREDIT INSTRUCTIONAL PROGRAMS *(cont.)*

semesters, and a comparison of Mt. SAC's rate of successful course completion to the statewide rate of successful course completion for the same instructional discipline in the same semester.

Career technical education disciplines also include labor market data on anticipated job opportunities over the next five years in Los Angeles, Orange, Riverside, and San Bernardino Counties. The labor market data project the number of job openings in occupations most directly related to each instructional program.

#### PROJECTED GROWTH

Based on current population and economic projections, Mt. SAC projects that it will grow between 0.18–1.22 percent each year over the next ten years. Based on the mid-point of this range, Mt. SAC projects that it will grow 0.75 percent per year over the next decade. At this projected growth rate, the College will continue to fulfill its mission of providing higher education opportunities for the surrounding communities by keeping pace with the projected population growth for this region.

Each instructional discipline is likely to grow in order to serve a greater number of students, but the disciplines are not likely to grow at the same rate. The projected rate of growth for each instructional discipline is identified relative to the projected rate of growth for the College:

- o Slower than the projected mid-point range of 0.75 percent growth per year for each of the next ten years,

- o At the same rate as the projected mid-point range of 0.75 percent growth per year for each of the next ten years, or
- o Faster than the projected mid-point range of 0.75 percent growth per year for each of the next ten years.

#### CHALLENGES AND OPPORTUNITIES

The challenges and opportunities included in this section describe anticipated departmental changes at a broad level, such as developing a new degree. Maintenance-of-effort activities and requests for staffing or budgetary modifications are not included in this section because these challenges are more appropriately included in the annual Planning for Institutional Effectiveness reports.

#### IMPLICATIONS FOR FACILITIES

This section lists each discipline's requests for new and remodeled facilities. This section does not reflect the College's analysis or prioritization of facilities needs and requests.



# INSTRUCTIONAL PROGRAMS

## ACCOUNTING

**Accounting** prepares students for entry-level positions, professional advancement in accounting, or transfer to a university to pursue a bachelor's degree in accounting. Earning an associate degree in accounting will provide the knowledge and skills necessary for jobs in a variety of accounting specializations. Earning an associate degree in accounting or one of the various related certificates will provide the knowledge and skills necessary in a variety of accounting and finance careers.

### SCOPE OF COURSE WORK

- o 12 degree-applicable courses
- o On-campus lecture, on-campus laboratory, online, hybrid

### COURSES FULFILL

- o Requirements for skills certificates (<18 units) in
  - Bookkeeping
  - Payroll Accounting
- o Requirements for certificates of achievement (>18 units) in
  - Accounting
  - Computerized Accounting
  - Financial Planning Accounting
  - Managerial Accounting
- o Requirements for an associate degree in Accounting
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Business
  - Information Technology
- o Requirements for an associate degree for transfer in Business Administration

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Five additional sections of Accounting were offering fall 2015 to meet the College's increased student enrollment. Although the average enrollment per section decreased, total enrollment increased two percent.
- o **Productivity:** The fill rate at census in fall 2012 was at capacity and was close to 90 percent in fall 2015. The amount of FTES earned by Accounting courses increased proportionately to the increase in enrollment.
- o **Student retention and success:** The student retention rates in Accounting increased in fall 2015 compared to fall 2012. The Mt. SAC average successful course completion rate for Accounting courses in fall 2015 was slightly above the statewide average for the same discipline.

### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in various occupations related to Accounting are projected to increase in number. Accountant and auditor positions typically require a bachelor's degree, and courses in Accounting at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for related occupations such as tax preparers and bookkeepers.

Students who are already employed may use Accounting courses to advance in their current positions. Skills Builder data reflect the change

### DATA

Accounting (BUSA)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	1,154	1,177	2.0%
Number of Sections	33	38	15.2%
Average Enrollment per Section	35.0	31.0	-11.4%
<b>Productivity</b>			
Fill Rate at Census	101.4	89.3	-12.0%
Discipline FTES	161.2	164.9	2.3%
Discipline FTEF	8.7	10.2	17.3%
<b>Student Retention and Success</b>			
Retention Rate	83.6%	85.5%	2.2%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Accounting	85.5%	72%	68%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### ACCOUNTING (cont.)

in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 74 students in this category who completed Accounting courses at Mt. SAC, the median increase in their earnings was 29.7 percent.

#### PROJECTED GROWTH FOR ACCOUNTING: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the trends in the recent enrollment data and moderate growth in labor market predictions, Accounting is projected to keep pace with the College's growth rate.

#### CHALLENGES AND OPPORTUNITIES

- o Develop certificates for new specializations in Accounting
- o Collaborate with local businesses to expand internship opportunities
- o Increase online course offerings

#### IMPLICATIONS FOR FACILITIES

- o Facilities needs will be met by the Business and Computer Technology Complex scheduled to open in 2017

#### LABOR MARKET DATA: ACCOUNTING

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
43-3031	Bookkeeping, Accounting, and Auditing Clerks	95,674	95,403	(0%)	6,087	1,217	\$20.04	Some college, no degree
13-2011	Accountants and Auditors	78,244	84,534	8%	17,314	3,463	\$33.19	Bachelor's degree
43-3051	Payroll and Timekeeping Clerks	11,868	12,020	1%	1,828	366	\$21.49	High school diploma or equivalent
13-2082	Tax Preparers	7,040	7,453	6%	1,327	265	\$21.35	High school diploma or equivalent
43-4011	Brokerage Clerks	1,686	1,707	1%	265	53	\$24.60	High school diploma or equivalent

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# ADMINISTRATION OF JUSTICE

**Administration of Justice** examines the structure, function, laws, procedures, and decision-making processes of agencies that deal with crime management. Administration of Justice courses provide both the theoretical background and practical experiences necessary for employment in criminal justice and related fields and for transfer to four-year institutions.

**SCOPE OF COURSE WORK**

- o 15 degree-applicable courses
- o On-campus lecture, online, hybrid

**COURSES FULFILL**

- o Requirements for a certificate of achievement (>18 units) in Administration of Justice
- o Requirements for an associate degree in Administration of Justice
- o Requirements for an associate degree for transfer in Administration of Justice

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Five additional sections of Administration of Justice courses were offered in fall 2015 to meet the College’s increased student enrollment. Although the average enrollment per section decreased, total enrollment increased almost 20 percent.
- o **Productivity:** In both semesters, the fill rates at census were above or near capacity. The amount of FTES earned by Administration of Justice courses increased proportionately to the increase in enrollment.
- o **Student retention and success:** The student retention rates in Administration of Justice decreased slightly in 2015 compared to 2012. The Mt. SAC average successful course

completion rate for Administration of Justice courses in fall 2015 was significantly below the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to Administration of Justice are projected to increase in number. Advanced positions in this field may require a bachelor’s degree, and courses in Administration of Justice at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn certificates of achievement and associate degrees, which make them competitive applicants for occupations such as police officers, detectives, and bailiffs.

Students who are already employed may use Administration of Justice courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 31 students in this category who completed Administration of Justice courses at Mt. SAC, the median increase in their earnings was 86.4 percent.

**PROJECTED GROWTH FOR ADMINISTRATION OF JUSTICE: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Although postsecondary education is often not required for entry-level employment, the labor market data project an increase in job opportunities in this field. Based

**DATA**

Administration of Justice (ADJU)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	505	604	19.6%
Number of Sections	17	22	29.4%
Average Enrollment per Section	29.7	27.5	-7.6%
<b>Productivity</b>			
Fill Rate at Census	117.6%	92.1%	-21.7%
Discipline FTES	52.3	62.5	19.5
Discipline FTEF	N/A	N/A	
<b>Student Retention and Success</b>			
Retention Rate	90.2%	88.0%	-2.4%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Administration of Justice	88.0%	69%	80%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### ADMINISTRATION OF JUSTICE *(cont.)*

on the positive trends in the enrollment data, Administration of Justice is projected to keep pace with the College's growth rate.

#### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to improve students' successful course completion rates
- o Expand curriculum to include a focus on critical thinking and written communication skills
- o Collaborate with Homeland Security agencies to develop an instructional program in Homeland Security
- o Collaborate with the Biological Sciences Department to develop a degree or certificate in Crime Scene Investigation

#### IMPLICATIONS FOR FACILITIES

- o Establish a laboratory-classroom suite for forensic science and crime scene investigations that includes a laboratory preparation area

#### LABOR MARKET DATA: ADMINISTRATION OF JUSTICE

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
33-3051	Police and Sheriff's Patrol Officers	36,694	38,548	5%	8,124	1,625	\$46.27	HS diploma or equivalent
33-3021	Detectives and Criminal Investigators	5,492	5,643	3%	831	166	\$52.06	HS diploma or equivalent
33-9021	Private Detectives and Investigators	3,154	3,248	3%	555	111	\$22.09	HS diploma or equivalent
33-3011	Bailiffs	271	293	8%	62	12	\$17.70	HS diploma or equivalent

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

# INSTRUCTIONAL PROGRAMS

## AERONAUTICS

**Aeronautics** provides students with theoretical and practical experience in aerodynamics, aircraft performance, flight, navigation, weather, and Federal Aviation regulations. This program prepares students for careers in air traffic control, aircraft dispatch, commercial airline pilots, and other aviation professions. Many of these specialized courses prepare students to successfully pass the Federal Aviation Administration (FAA) knowledge and practical examinations required for FAA certifications.

### SCOPE OF COURSE WORK

- o 18 degree-applicable courses
- o On-campus lecture, on-campus laboratory, off-campus flight training

### COURSES FULFILL

- o Requirements for a skills certificate (<18 units) in FAA Aircraft Dispatcher
- o Requirements for associate degrees in
  - Aviation Science
  - Commercial Flight

### EXTERNAL ACCREDITATION

- o Aircraft Dispatcher: Certified by the Federal Aviation Administration

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Enrollment declined significantly between 2012–2015 due to a shift in FAA practices, which no longer gave a priority to hiring air traffic controllers based on their college credentials or military service. Due to this decline in student demand, sections were reduced and enrollment declined.

- o **Productivity:** The program's productivity declined in parallel with the decline in enrollment.
- o **Student retention and success:** This program is strong on both measures of student outcomes (retention and successful course completion rates). The student retention rates were 93 percent in both 2012 and 2015 and the Mt. SAC student successful course completion rate was higher than the statewide average for this discipline in fall 2015.

### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in various occupations related to Aeronautics are projected to increase in number. Positions as a pilot or flight engineer typically require a bachelor's degree, and courses in Aeronautics at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates and associate degrees, which make them competitive applicants for related occupations such as air traffic controllers.

Students who are already employed may use Aeronautics courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 16 students in this category who completed Aeronautics courses related to a career as a pilot, the median increase in their earnings was 51.3 percent. Of the 20 students in this category who

### DATA

Aeronautics (AERO, AIRT)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	1,004	626	-37.6%
Number of Sections	27	20	-25.9%
Average Enrollment per Section	37.2	31.3	-15.8%
<b>Productivity</b>			
Fill Rate at Census	111.4%	95.5%	-14.3%
Discipline FTES	103.9	66.2	-36.3%
Discipline FTEF	5.3	4.0	-25.3%
<b>Student Retention and Success</b>			
Retention Rate	93.5%	93.7%	0.2%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Aeronautics	93.7%	89%	82%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### AERONAUTICS (cont.)

completed Aeronautics courses related to a career in air traffic control, the median increase in their earnings was 101.5 percent.

#### PROJECTED GROWTH FOR AERONAUTICS: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Enrollment in Aeronautics is likely to grow given the passage and implementation of the College Training Initiative (CTI-2016). This new FAA policy requires that 50 percent of hires be reserved for graduates of Collegiate Training Initiative schools and military veterans. Mt. SAC is an approved Air Traffic Collegiate Training Initiative School. Based on slight increases in labor market projections for air traffic controllers and pilots, Aeronautics is projected to keep pace with the College-wide growth rate.

#### CHALLENGES AND OPPORTUNITIES

- o Develop curriculum for piloting unmanned aircraft systems
- o Respond to technology changes, such as the flat screen replacement for traditional controls
- o Provide students with access to flight and virtual reality simulators
- o Comply with the avionics upgrades mandated by the Federal Aviation Administration
- o Develop strategies to provide students with experience on a variety of planes

#### IMPLICATIONS FOR FACILITIES

- o The term of the College's lease on the current flight training facility ends in 2025. To continue the program, the facilities needs are:
  - Hanger with enclosed virtual reality simulator technology
  - Secure offices, classroom, and laboratory space
  - Outdoor netted facility for the new drone program to be shared with other programs such as Photography and Graphic Design and Illustration
- o Add or remodel facilities to offer instruction in unmanned aerial vehicles/unmanned aircraft systems to include:
  - A large classroom and innovative laboratory space
  - Makerspace to support the unmanned aerial vehicle/unmanned aerial vehicle systems
  - Outdoor netted facility for unmanned aerial vehicles/unmanned aircraft systems to be shared with other programs such as Aircraft Maintenance Technology, Photography, and Graphic Design and Illustration

#### LABOR MARKET DATA: AERONAUTICS

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015-2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
53-2011	Airline Pilots, Copilots, and Flight Engineers	3,937	3,950	0%	684	137	\$54.53	Bachelor's
53-2012	Commercial Pilots	1,932	2,138	11%	470	94	\$44.89	HS diploma or equivalent
53-2021	Air Traffic Controllers	835	835	0%	137	27	\$65.69	Associate
53-2022	Airfield Operations Specialists	266	289	9%	66	13	\$24.94	HS diploma or equivalent

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# AGRICULTURE AND ANIMAL SCIENCE

The **Agriculture and Animal Science** program provides the theoretical foundations and applied practices of the sciences that sustain and improve the production of animals and plants for human use. This program compliments all disciplines in the Agricultural Sciences. The courses are clustered into four categories:

- o Animal Science: General
  - A core curriculum of four courses that provides students with the fundamental theory, concepts and practical skills for employment in animal agriculture careers
- o Agriculture: General Subjects
  - A core curriculum of four courses that prepares students to complete programs of study in various specializations in the Agricultural Sciences Department
- o Livestock Production
  - A curriculum of 11 courses that prepares students for employment in animal agriculture production, including breeding, genetics, nutrition, epidemiology, behavior, and reproduction
- o Pet Science
  - A curriculum of six courses that prepares students for work in the care, breeding, and marketing of household pets, such as dogs, cats, fish, reptiles, and birds.

This program is supported by the Farm, a 110-acre living laboratory that is collaboratively shared by all specializations in the Agricultural Sciences Department and provides students with unique hands-on experiences in the production, care, and marketing of farm animals and plants.

**SCOPE OF COURSE WORK**

- o 25 degree-applicable courses
- o On-campus lecture, on-campus laboratory

**COURSES FULFILL**

- o Requirements for skills certificates (<18 units) in
  - Animal Science Fundamentals
  - Horse Ranch Management
  - Livestock Production
  - Pet Science
- o Requirements for certificates of achievement (>18 units) in
  - Horse Ranch Management Level II
- o Requirements for associate degrees in
  - Agri-Technology
  - Equipment Technology
  - Horse Ranch Management
  - Livestock Management
- o Requirements for an associate degree for transfer in Animal Science

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Four sections of Agriculture and Animal Science were added in fall 2015 compared to fall 2012. Enrollment increased by 20.8 percent while the average enrollment per section remained the same.
- o **Productivity:** The fill rates at census were above capacity in both 2012 and 2015. The amount of FTES earned in Agriculture and Animal Science courses increased 19.4 percent from 2012 to 2015.
- o **Student retention and success:** The student retention rates in Agriculture and Animal Science courses were strong in both 2012 and 2015. The Mt. SAC average successful course

**DATA**

Agriculture and Animal Science (AGAN, AGAG, AGLI, AGPE)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	674	814	20.8%
Number of Sections	19	23	21.1%
Average Enrollment per Section	35.5	35.4	-0.2%
<b>Productivity</b>			
Fill Rate at Census	116.8%	121.1%	3.7%
Discipline FTES	85.0	101.5	19.4%
Discipline FTEF	4.5	5.3	16.9%
<b>Student Retention and Success</b>			
Retention Rate	97.5%	92.4%	-2.2%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC Agriculture and Animal Science Combined	Mt. SAC By Discipline	Statewide By Discipline
Agriculture	92.4%	59%	73%
Animal Science	92.4%	76%	80%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### AGRICULTURE AND ANIMAL SCIENCE (cont.)

completion rates for Agriculture courses and Animal Science courses in fall 2015 were below the statewide average for the same disciplines.

#### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in some occupations related to Agriculture and Animal Science are projected to decrease and others are projected to increase. Positions such as food scientist and technologist typically require a bachelor's degree, and courses in Agriculture and Animal Science at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which would them competitive applicants for occupations such as agricultural and food science technicians. Students currently employed in the field may take Mt. SAC Agriculture and Animal Science courses to advance in their current positions.

#### PROJECTED GROWTH FOR AGRICULTURE AND ANIMAL SCIENCE: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the trends in the recent enrollment data and relatively low growth in labor market predictions, Agriculture and Animal Science is projected to keep pace with the College's growth rate.

Program growth will be restricted by the numbers and types of animals housed on the Farm. Animal contact hours limit the amount and type of students-to-animal contact in training facilities.

#### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to improve students' successful course completion rates in Agriculture courses
- o Expand the curriculum to incorporate contemporary topics, such as perceptions about animal care, urban agriculture, sustainable agriculture, and land use management
- o Expand marketing to promote student awareness of the opportunities in this program
- o Develop strategies to support student completion of degrees and certificates
- o Develop strategies to provide students with sufficient hands-on experiences given limits on the number of animal contact hours
- o Complete the Agricultural Literacy Trail
- o Add online and hybrid courses

#### IMPLICATIONS FOR FACILITIES

- o Develop and implement plans to replace, repurpose, and/or modernize the Farm's land use, facilities, and infrastructure to support its use as a state-of-the-art teaching laboratory

#### LABOR MARKET DATA: AGRICULTURE AND ANIMAL SCIENCE

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015-2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
11-9013	Farmers, Ranchers, and Other Agricultural Managers	2,672	1,775	(34%)	193	39	\$19.82	HS diploma or equivalent
39-2011	Animal Trainers	1,867	1,957	5%	465	93	\$14.95	HS diploma or equivalent
19-4011	Agricultural and Food Science Technicians	760	808	6%	183	37	\$17.18	Associate
19-1012	Food Scientists and Technologists	735	765	4%	167	33	\$32.11	Bachelor's
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	715	614	(14%)	91	18	\$21.53	HS diploma or equivalent
45-2021	Animal Breeders	43	37	(14%)	<10	Insf. Data	\$17.91	HS diploma or equivalent
11-9013	Farmers, Ranchers, and Other Agricultural Managers	2,672	1,775	(34%)	193	39	\$19.82	HS diploma or equivalent

## INSTRUCTIONAL PROGRAMS

# AIR CONDITIONING AND REFRIGERATION

**Air Conditioning and Refrigeration** prepares students for employment in the broad field of air conditioning, heating, and refrigeration. It leads to occupations in the design, manufacturing, operation, sales, distribution, installation, maintenance, and repair of this equipment.

This program includes the advancing field of **Building Automation**. This specialization includes theory and practical applications for energy cost reduction and sustainable Green Building Technologies.

### SCOPE OF COURSE WORK

- o Air Conditioning: 10 degree-applicable courses
- o Building Automation: 10 degree-applicable courses
- o On-campus lecture, on-campus laboratory

### COURSES FULFILL

- o Requirements for certificates of achievement (> 18 units) in
  - Air Conditioning and Refrigeration
  - Building Automation
- o Requirements for associate degrees in
  - Air Conditioning and Refrigeration
  - Building Automation

### EXTERNAL ACCREDITATIONS

- o Partnership for Air Conditioning, Heating, Refrigeration Accreditation (PAHRA)
- o HVAC Excellence

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Although it appears that four fewer sections were offered in fall 2015

compared to fall 2012, actually the same amount of instruction was offered in both semesters. Between fall 2012 and fall 2015, several discrete courses were combined and the course units were increased. As a result, the average enrollment in each section increased.

- o **Productivity:** The reduction in the number of sections offered increased the productivity of this discipline as shown by the increases in the fill rate at census and the amount of FTES earned.
- o **Student retention and success:** Student retention rates in Air Conditioning and Refrigeration courses increased between 2012 and 2015. The Mt. SAC average successful course completion rate for Air Conditioning and Refrigeration courses in fall 2015 was comparable to the statewide average for the same discipline.

### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in various occupations related to Air Conditioning and Refrigeration are projected to increase in number. Students interested in this field may earn certificates of achievement and associate degrees, which make them competitive applicants for occupations such as air conditioning and refrigeration mechanics and installers.

Students who are already employed may use Air Conditioning and Refrigeration courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year

### DATA

Air Conditioning and Refrigeration (AIRC)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	376	347	-7.7%
Number of Sections	17	13	-23.5%
Average Enrollment per Section	22.1	26.7	20.7%
<b>Productivity</b>			
Fill Rate at Census	97.8%	111.2%	13.75
Discipline FTES	49.7	60.5	21.6%
Discipline FTEF	8.4	3.8	-54.5%
<b>Student Retention and Success</b>			
Retention Rate	82.6%	86.8%	5.1%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Air Conditioning and Refrigeration	86.8%	79%	80%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

# AIR CONDITIONING AND REFRIGERATION (cont.)

institution or complete a degree or certificate. Of the 16 students in this category who completed Mt. SAC courses related to Environmental Control Technology, the median increase in their earnings was 30.1 percent.

### PROJECTED GROWTH FOR AIR CONDITIONING AND REFRIGERATION: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data and the encouraging labor market data, Air Conditioning and Refrigeration is projected to keep pace with the College's overall growth.

### CHALLENGES AND OPPORTUNITIES

- o Revise curriculum and certificates to reflect:
  - The stratified skill requirements in the air conditioning and refrigeration industry, and
  - New innovations in technology such as building automation systems
- o Comply with ongoing changes in OSHA standards
- o Meet California's Zero Net Energy mandate, which will require retraining in solar energy as well as battery storage and safety
- o Create smaller, stackable certificates and more specialization to meet the demand for skilled workers
- o Increase three-dimensional simulation technology training
- o Collaborate with the College's Maintenance and Operations Department to use the

College's air conditioning system as a living laboratory for student observations and internships

### IMPLICATIONS FOR FACILITIES

- o To provide opportunities for hands-on learning, add laboratory space with the appropriate equipment, computers, and simulation modules

### LABOR MARKET DATA: AIR CONDITIONING AND REFRIGERATION

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	12,936	14,262	10%	2,424	485	\$22.43	Postsecondary non-degree award
47-4099	Construction and Related Workers, All Other	1,287	1,353	5%	190	38	\$19.40	HS diploma or equivalent
47-2231	Solar Photovoltaic Installers	1,055	1,151	9%	189	38	\$19.48	HS diploma or equivalent

### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# AIRCRAFT MAINTENANCE TECHNOLOGY

The **Aircraft Maintenance Technology** program is certified by the Federal Aviation Association (FAA) to train students for entry-level positions as general aviation technicians, corporate aircraft technicians, and commercial aircraft technicians. Students train with state-of-the-art equipment to ensure the best possible success.

**SCOPE OF COURSE WORK**

- o 27 degree-applicable courses
- o On-campus lecture, on-campus laboratory

**COURSES FULFILL**

- o Requirements for certificates of achievement (> 18 units) in
  - Aircraft Powerplant Maintenance Technology—Day
  - Aircraft Powerplant Maintenance Technology—Evening
  - Airframe Maintenance Technology--Day
  - Airframe Maintenance Technology—Evening
- o Requirements for associate degrees in
- o Airframe and Aircraft Powerplant Maintenance Technology—Day
- o Airframe and Aircraft Powerplant Maintenance Technology—Evening

**EXTERNAL ACCREDITATIONS**

- o Federal Aviation Administration

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Between 2012 and 2015 when Mt. SAC enrollment increased 9.9%, course offerings in Aircraft Maintenance Technology were reduced 40 percent, from 15 in fall 2012 to nine in fall 2015. This reduction was part of

College-wide reductions in course offerings. Not surprisingly, enrollment decreased while the average enrollment per section increased.

- o **Productivity:** The reduction of sections significantly improved this discipline’s efficiency. The fill rate at census doubled, from 65.1 percent in fall 2012 to 114.7 percent in fall 2016. FTES increased 4.7 percent in the same comparison.
- o **Student retention and success:** The student retention rate in Aircraft Maintenance Technology was impressive at slightly above 97 percent in both fall 2012 and fall 2015. The Mt. SAC average successful course completion rate in fall 2015 for Aircraft Maintenance Technology courses was higher than the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to Aircraft Maintenance Technology are projected to increase in number. Some advanced positions in this field may require a bachelor’s degree, and courses in Aircraft Maintenance Technology at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn certificates of achievement and associate degrees, which make them competitive applicants for occupations such as aircraft mechanics and avionics technicians. Students currently employed in the field may take Mt. SAC Aircraft Maintenance Technology courses to advance in their current positions.

**DATA**

Aircraft Maintenance Technology (AIRM)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	244	186	-23.8%
Number of Sections	15	9	-40.0%
Average Enrollment per Section	16.3	20.7	27.0%
<b>Productivity</b>			
Fill Rate at Census	65.1%	114.7%	76.2%
Discipline FTES	71.2	74.5	4.7%
Discipline FTEF	5.0	5.2	3.0%
<b>Student Retention and Success</b>			
Retention Rate	97.7%	97.4%	-0.3%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Aircraft Maintenance Technology	97.4%	100%	88%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

# AIRCRAFT MAINTENANCE TECHNOLOGY (cont.)

### PROJECTED GROWTH FOR AIRCRAFT MAINTENANCE TECHNOLOGY: SLOWER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Given the enrollment trends for Aircraft Maintenance Technology and the slight increase in the labor market projections, this program is likely to increase in enrollment over the next decade, but it is unlikely to grow at the same rate as the overall College-wide enrollment.

### CHALLENGES AND OPPORTUNITIES

- o Revise curriculum as needed to comply with changes in the Federal Aviation Administration Aircraft Mechanics Practical Test Standards
- o Collaborate with Photography, Aeronautics, and Graphic Design and Illustration to develop courses and a certificate in unmanned aircraft maintenance and repair
- o Develop specialized training in battery and electronic technology for the electric airplane industry
- o Expand instructional delivery modes to include computer-based training modules, mock-ups, and simulators
- o Revise curriculum as needed to include composite construction, which has replaced metal

### IMPLICATIONS FOR FACILITIES

- o Expand or relocate the on-campus aircraft laboratory to a larger facility sufficient to add aircraft, electronics, and simulators
- o Add or remodel facilities to offer instruction in unmanned aerial vehicles/unmanned aircraft systems to include:

- A large classroom and innovative laboratory space
- Makerspace to support the unmanned aerial vehicle/unmanned aerial vehicle systems
- Outdoor netted facility for unmanned aerial vehicles/unmanned aircraft systems to be shared with other programs such as Aeronautics, Aircraft Maintenance Technology, and Graphic Design and Illustration

### LABOR MARKET DATA: AIRCRAFT MAINTENANCE TECHNOLOGY

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
49-3011	Aircraft Mechanics and Service Technicians	6,719	7,023	5%	1,159	232	\$31.12	Postsecondary non-degree award
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	1,541	1,573	2%	192	38	\$21.69	High school diploma or equivalent
49-2091	Avionics Technicians	882	896	2%	100	20	\$31.32	Associate

### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# ALCOHOL AND DRUG COUNSELING

The **Alcohol and Drug Counseling** program prepares students for entry-level practice with alcohol and drug abuse population as well as the families and employers of chemically dependent persons. The curriculum explores the impact alcohol and drug dependencies have upon an individual’s social, psychological, economic, physiological well being as well as community and family concerns. The emphasis in the curriculum is the development of the necessary skills through the integration of theory with practical experience. The program prepares students for certification as an addiction counselor.

**SCOPE OF COURSE WORK**

- o 11 degree-applicable courses
- o On-campus lecture

**COURSES FULFILL**

- o Requirements for certificates of achievement (>18 units) Alcohol/Drug Counseling
- o Requirements for an associate degree in Alcohol/Drug Counseling
- o General education breadth requirements for transfer to CSU

**EXTERNAL ACCREDITATIONS**

- o California Association of Alcohol and Drug Education

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Four fewer sections of Alcohol and Drug Counseling were offered in fall 2015 compared to fall 2012. Enrollment decreased between 2012 and 2015, as did the average enrollment per section.

- o **Productivity:** In both semesters, the fill rates at census were over capacity. The amount of FTES earned by Alcohol and Drug Counseling courses decreased proportionately to the decrease in enrollment.
- o **Student retention and success:** The student retention rates in Alcohol and Drug Counseling courses were over 92 percent in both 2012 and 2015. The Mt. SAC average successful course completion rate for Alcohol and Drug Counseling courses in fall 2015 was below the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to Alcohol and Drug Counseling are projected to increase in number. Positions such as social services specialist typically require a master’s degree, and courses in Alcohol and Drug Counseling at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn certificates of achievement and associate degrees, which make them competitive applicants for occupations such as community health workers and social service assistants.

Students who are already employed may use Alcohol and Drug Counseling courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 18 students in this category who completed

**DATA**

Alcohol and Drug Counseling (AD)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	714	526	-26.3%
Number of Sections	22	18	-18.2%
Average Enrollment per Section	32.5	29.2	-10.0%
<b>Productivity</b>			
Fill Rate at Census	129.7%	107.4%	-17.2%
Discipline FTES	79.6	62.0	-22.2%
Discipline FTEF	4.9	3.3	-32.1%
<b>Student Retention and Success</b>			
Retention Rate	93.9%	92.6%	-1.4%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Alcohol and Drug Counseling	92.6%	85%	93%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

INSTRUCTIONAL PROGRAMS

ALCOHOL AND DRUG COUNSELING (cont.)

Alcohol and Drug Counseling courses at Mt. SAC, the median increase in their earnings was 17.7 percent.

PROJECTED GROWTH FOR ALCOHOL AND DRUG COUNSELING: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the higher levels of enrollment in 2012 and the positive labor market data, Alcohol and Drug Counseling is projected to keep pace with the College’s overall growth.

CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to increase students’ successful course completion rate
- o Change name of program to Addictions Counseling
- o Expand the types of off-campus clinical settings to expose students to a greater variety of disorders

IMPLICATIONS FOR FACILITIES

- o Build mental health simulation laboratory using virtual reality to simulate mental health conditions
- o Develop a private outdoor space for assault response training

LABOR MARKET DATA: ALCOHOL AND DRUG COUNSELING

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
21-1093	Social and Human Service Assistants	21,835	26,336	21%	6,952	1,390	\$18.69	HS diploma or equivalent
21-1099	Community and Social Service Specialists, All Other	5,149	5,900	15%	1,312	262	\$25.55	Master's
21-1094	Community Health Workers	2,148	2,561	19%	654	131	\$19.51	HS diploma or equivalent

NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# AMERICAN LANGUAGE

The **American Language** program develops the language proficiency of non-native speakers in writing, reading, and speech so that they may achieve their academic, professional, and personal goals as well as participate effectively in their communities. The program is comprehensive, ranging from foundational instruction in American Language skills to advanced courses that prepare students for college-level coursework. Students enter the program by transitioning from the non-credit English as a Second language program or via placement.

**SCOPE OF COURSE WORK**

- o 15 non-degree-applicable credit courses, one degree-applicable course
- o On-campus lecture

**COURSES FULFILL**

- o Reading requirement for associate degrees

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Six fewer sections of American Language were offered in fall 2015 than in fall 2012, and as result, enrollment decreased by the same proportion. The average enrollments per section were comparable in the two semesters in this snapshot.
- o **Productivity:** Although the fill rate in fall 2015 was higher than the fill rate in fall 2012, the fill rates were above 90 percent in both semesters. The amount of FTES earned in American Language courses decreased between the two semesters.
- o **Student retention and success:** The student retention rates in American Language were approximately 93 percent in both 2012 and

2015. The Mt. SAC average successful course completion rate for American Language courses in fall 2015 was significantly below the statewide average for the same discipline.

**PROJECTED GROWTH FOR AMERICAN LANGUAGE: SLOWER THAN COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data, this discipline is projected to increase in enrollment over the next decade, but it is unlikely to grow at the same rate as the overall College-wide enrollment.

**CHALLENGES AND OPPORTUNITIES**

- o Develop and implement strategies to improve students’ successful course completion rates
- o Embed counseling services to assist students in registering for classes and achieving their Student Services Success Plan
- o Develop a pathways program in American Language
- o Develop courses that integrate reading, writing, and speech
- o Combine two or more levels of courses into one intense course below English IA
- o Increase the use of technology into the program

**IMPLICATIONS FOR FACILITIES**

- o Increase available space for students to study between classes

**DATA**

American Language (AMLA)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	995	832	-16.4%
Number of Sections	36	30	-16.7%
Average Enrollment per Section	27.6	27.7	0.3%
<b>Productivity</b>			
Fill Rate at Census	90.4%	94.6%	4.6%
Discipline FTES	124.0	110.3	-11.0%
Discipline FTEF	8.27	7.47	-9.7%
<b>Student Retention and Success</b>			
Retention Rate	93.2%	93.0%	-0.2%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
American Language	93.0%	65%	82%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

# INSTRUCTIONAL PROGRAMS

# ANIMATION

**Animation** blends the study of art with technologic skills to prepare students to transfer to a four-year institution or for entry-level careers in the field of animation and gaming. Employment opportunities include positions as junior animators, character designers, storyboard artists, 3D modelers, and designers of games and other forms of augmented or virtual reality.

### SCOPE OF COURSE WORK

- o 17 degree-applicable courses
- o On-campus lecture, on-campus laboratory, and online

### COURSES FULFILL

- o Requirements for skills certificates (<18 units) in
  - Animation—Game and Interactive Multimedia Design I
  - Animation—Tradigital Level I
- o Requirements for certificates of achievement (>18 units) in
  - Animation—3D (three dimensional) and Computer-generated Gaming
  - Animation—Game and Interactive Multimedia Design II
  - Animation—Tradigital Level II
- o Requirements for an associate degree in Animation
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Fine Arts

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Enrollment in Animation courses increased 13 percent between 2012 and 2015. Even though two additional sections were

offered in fall 2015 compared to fall 2012, the average enrollment per section was close to the same, showing that the increased sections met students' needs.

- o **Productivity:** The increase in enrollment is also evident in the increases in two measures of productivity: the fill rate at census and the amount of FTES earned by this discipline.
- o **Student retention and success:** The student retention rate increased between fall 2012 and fall 2015. In fall 2015, the Mt. SAC average successful course completion rate for Animation courses was comparable to the statewide average for the same discipline.

### LABOR MARKET DATA ANALYSIS

It is difficult to standardize labor market data for creative arts because many of the employment opportunities are self-employment or freelance. According to the *2017 Otis Report of the Creative Economy*, the Los Angeles metropolitan area was home to the second largest number of creative workers, with more than 429,400 wage and salary workers in the creative industries. Between 2009 and 2014, the number of self-employed workers in the creative arts in Los Angeles and Orange counties increased at an annual average rate of 4.1 percent (31,641 firms in total), which is slightly higher than the region's 3.1 percent increase across all industries. (Source: *otis.edu*)

Over the next five years jobs in various occupations related to Animation are projected to increase in number. Positions such as multimedia artists and animators typically require a bachelor's degree, and courses in Animation at Mt. SAC prepare students for successful transfer in this major.

### DATA

**Animation (ANIM) Excludes these Fine Arts courses: ANIM 101A, 101B, 101C, 104, 111A, 111B, 107**

	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	297	336	13.1%
Number of Sections	12	14	16.7%
Average Enrollment per Section	24.8	24.0	-3.0%
<b>Productivity</b>			
Fill Rate at Census	99.0%	96.0%	-3.0%
Discipline FTES	58.5	67.0	14.7%
Discipline FTEF	4.4	5.2	18.2%
<b>Student Retention and Success</b>			
Retention Rate	90.9%	92.9%	2.2%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Animation	92.9%	74%	75%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### ANIMATION (cont.)

Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for related occupations.

Students who are already employed may use Animation courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 11 students in this category who completed Animation courses at Mt. SAC, the median increase in their earnings was 82.0 percent.

#### PROJECTED GROWTH FOR ANIMATION: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data and the encouraging labor market data, Animation is projected to keep pace with the College’s overall growth.

#### CHALLENGES AND OPPORTUNITIES

- o Keep pace with changes in the gaming industry, such as the recent increase in the use of virtual reality technology
- o Collaborate with Architecture, Industrial Design Engineering, Administration of Justice, and Nursing to develop courses and certificates in the uses of augmented reality technology and/or virtual reality technology
- o Develop virtual programming into a separate program

- o Develop student internships opportunities to support student acquisition of business management skills

#### IMPLICATIONS FOR FACILITIES

- o Redesign teaching space to reflect industry models that are organic, such as a director at the hub and teams emanating as spokes on a wheel
- o Add a laboratory for augmented reality technology and/or virtual reality technology
- o Add storage
- o Add a studio laboratory shared across the commercial and entertainment arts that supports group work, including flat screens for animation critiques, digital pads/pens, and large monitors
- o Add a makerspace to be shared with Photography and Graphic Design and Illustration
- o Add a laboratory for student projects and study outside of class hours

#### LABOR MARKET DATA: ANIMATION

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
27-1014	Multimedia Artists and Animators	8,544	9,076	6%	1,388	278	\$33.50	Bachelor's

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# ANTHROPOLOGY

**Anthropology** is the observation, description, and explanation of human biological and cultural variation. The focus in this academic discipline is on culture, language, prehistory, and human biology in the framework of evolution.

**SCOPE OF COURSE WORK**

- o Seven degree-applicable courses
- o On-campus lecture, on-campus laboratory

**COURSES FULFILL**

- o Requirements for an associate degree for transfer in Political Science
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Social and Behavioral Sciences
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Transfer requirements for Anthropology majors

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Five additional sections of Anthropology courses were offered between 2012 and 2015 to meet student needs. This increase had the effect of increasing overall enrollment but reducing the average enrollment per section.
- o **Productivity:** Although fill rate at census was lower in 2015 compared to 2012, FTES increased due to the increase in enrollment.
- o **Student retention and success:** Student retention rates increased between fall 2012 and fall 2015, and the Mt. SAC average successful course completion rate for fall

2015 in Anthropology courses was above the statewide average for the same discipline.

**PROJECTED GROWTH FOR ANTHROPOLOGY: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data, Anthropology is projected to keep pace with the College’s overall growth.

**CHALLENGES AND OPPORTUNITIES**

- o Develop an associate degree for transfer in Anthropology
- o Expand curriculum expansion to include Honors Cultural Anthropology, Peoples and Cultures of the World, Food and Culture, and Introduction to Science and Technology Studies in Anthropology
- o Collaborate with the Fine Arts department to develop an Introduction to Visual Anthropology course

**IMPLICATIONS FOR FACILITIES**

- o Add a storage shed in the Wildlife Sanctuary to conduct student Archaeology laboratory activities
- o Add an instructional laboratory with laptops and video editing equipment for applied and visual Anthropology classes to be shared with other departments
- o Expand tutoring space in the STEM Center to include a quiet study space
- o Add a three-dimensional printing laboratory in collaboration with other disciplines such as Physics, Engineering, and Industrial Design Engineering

**DATA**

<b>Anthropology (ANTH)</b>	<b>Fall 2012</b>	<b>Fall 2015</b>	<b>% Change</b>
<b>Enrollment</b>			
Enrollment	670	699	4.3%
Number of Sections	17	22	29.4%
Average Enrollment per Section	39.4	31.8	-19.4%
<b>Productivity</b>			
Fill Rate at Census	118.5%	96.2%	-18.9%
Discipline FTES	70.3	73.3	4.3%
Discipline FTEF	3.4	4.4	29.4%
<b>Student Retention and Success</b>			
Retention Rate	87.7%	89.1%	1.6%

<b>Discipline</b>	<b>Retention Fall 2015</b>	<b>Successful Course Completion Rate Fall 2015</b>	
	Mt. SAC	Mt. SAC	Statewide
Anthropology	89.1%	72%	68%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

INSTRUCTIONAL PROGRAMS

# ARCHITECTURAL TECHNOLOGY

**Architectural Technology** encompasses the process and the product of planning, designing, and constructing buildings and other physical structures. Courses in this discipline include site analysis, design conceptualization, form making, program development and presentation, and critical thinking and problem solving integrated with the artistic design process.

**SCOPE OF COURSE WORK**

- o 16 degree-applicable courses in Architectural Technology
- o On-campus lecture, on campus laboratory

**COURSES FULFILL**

- o Requirements for a skills certificate (< 18 units) in
  - Architecture Foundation Skills
- o Requirements for certificates of achievement (> 18 units) in
  - Architectural Design Concentration Levels I, II, and III
  - Architectural Technology Concentration Levels I, II, and III
- o Requirements for associate degrees in
  - Architectural Design Concentration
  - Architectural Technology Concentration

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Enrollment Architectural Technology decreased a little over 27 percent between 2012 and 2015 due to a parallel reduction in the number of sections offered. The average enrollments per section were the same in the two semesters.
- o **Productivity:** The fill rate at census was higher in 2015 compared to 2012, although the amount of FTES earned by Architectural

Technology declined proportionately to the reduction in enrollment.

- o **Student retention and success:** The student retention rates in Architectural Technology courses increased between 2012 and 2015. However, the Mt. SAC average successful course completion rate for Architectural Technology courses in fall 2015 was below the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to Architectural Technology are projected to increase in number. Positions such as an architect require advanced degrees, and courses in Architectural Technology at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for related occupations such as architectural and electrical drafters.

Students who are already employed may use Architectural Technology courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013 – 2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 11 students in this category who completed Architectural Technology courses at Mt. SAC, the median increase in their earnings was 22.0 percent. Of the 21 students in this category who completed Architectural Technology courses related to Drafting Technology, the median increase in their earnings was 69.5 percent.

**DATA**

**Architectural Technology and Inspection and Estimating, Building (ARCH)**

	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	434	315	-27.4%
Number of Sections	22	16	-27.3%
Average Enrollment per Section	19.7	19.7	-0.2%
<b>Productivity</b>			
Fill Rate at Census	94.5%	104.3%	10.4%
Discipline FTES	85.9	63.7	-25.8%
Discipline FTEF	7.6	5.4	-28.9%
<b>Student Retention and Success</b>			
Retention Rate	77.4%	89.7%	16.0%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Architectural Technology	89.7%	65%	73%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### ARCHITECTURAL TECHNOLOGY (cont.)

#### PROJECTED GROWTH FOR ARCHITECTURAL TECHNOLOGY: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Given the enrollment trends for Architectural Technology and the labor market projections, this program is projected to keep pace with the overall College-wide enrollment.

#### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to improve students' successful course completion rates
- o Develop two new certificates: Construction Management and Design Building Fabrication
- o Collaborate with Ornamental Horticulture and other disciplines to develop degrees and certificates in Landscape and Architectural Design, Environmental and Sustainable Design, Urban and Regional Planning

#### IMPLICATIONS FOR FACILITIES

- o Add or remodel facilities to include:
  - Hands-on laboratory that students can access outside of class hours
  - Fabrication laboratory with outdoor access and multiple shop equipment
  - Tool crib
  - Storage for student projects
  - Dedicated flexible lecture space with storage
  - Adjacency to computer laboratory and lecture space

#### LABOR MARKET DATA: ARCHITECTURAL TECHNOLOGY

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
17-3011	Architectural and Civil Drafters	6,912	7,013	1%	612	122	\$26.60	Associate
17-3012	Electrical and Electronics Drafters	2,715	2,755	1%	217	43	\$28.16	Associate
17-3013	Mechanical Drafters	2,034	2,006	(1%)	151	30	\$25.53	Associate
17-3019	Drafters, All Other	582	600	3%	59	12	\$25.84	Associate

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

# INSTRUCTIONAL PROGRAMS

## ART HISTORY

**Art History** includes both European and non-European art and visual culture from the periods of pre-history through modern. Art History involves the study of visual objects as both works of art and as artifacts of the historical and cultural contexts in which they were created.

This department includes **Humanities**, which is an interdisciplinary study of the artistic, musical, literary and philosophical accomplishments with an emphasis on creating an awareness of human expression as it occurs in a historical and philosophical context.

### SCOPE OF COURSE WORK

- o 17 degree applicable courses in Art History
- o One degree applicable course in Humanities
- o On-campus lecture and online

### COURSES FULFILL

- o Requirements for an associate degree for transfer in Art History
- o Requirements for an associate degree for transfer in Studio Art
- o Requirements for an associate degree in Animation
- o Requirements for an associate degree in Graphic Design
- o Requirements for a level II certificate in Photography
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Fine Arts
  - Humanities
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)

- o Transfer requirements for Art History majors

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** During the period when College-wide enrollment increased between 2012 and 2015, enrollment in Art History decreased a little over four percent while the number of sections offered remained the same.
- o **Productivity:** The fill rate at census was lower in 2015 compared to 2012 as well the amount of FTES earned by this discipline.
- o **Student retention and success:** The student retention rates in Art History courses were comparable in fall 2012 and fall 2015. The Mt. SAC average successful course completion rate for Art History courses in fall 2015 was slightly below the statewide average for the same discipline.

### PROJECTED GROWTH FOR ART HISTORY:

**SLOWER THAN COLLEGE-WIDE GROWTH RATE**  
Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data, Art History is likely to increase in enrollment over the next decade, but it is unlikely to grow at the same rate as the overall College-wide enrollment.

### CHALLENGES AND OPPORTUNITIES

- o Evaluate course content and offerings in AHIS 1 (Understanding the Visual Arts) and ARTB 1 (Understanding the Visual Arts) to eliminate redundancy
- o Assess the value of adding reading and/or writing prerequisites to Art History courses

### DATA

Art History (AHIS, HUMA)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	685	655	-4.4%
Number of Sections	21	21	0.0%
Average Enrollment per Section	32.6	31.2	-4.4%
<b>Productivity</b>			
Fill Rate at Census	94.7%	89.1%	-6.0%
Discipline FTES	70.4	66.6	-5.5%
Discipline FTEF	4.2	4.2	0.0%
<b>Student Retention and Success</b>			
Retention Rate	88.3%	87.3%	-1.1%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Art History	87.3%	62%	64%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### ART HISTORY (cont.)

- Submit Art History courses for consideration as fulfilling a second general education area (Area D)
- Develop additional honors courses to meet diversity needs in the Honors Program
- Develop a Humanities Program that includes Art History courses
- Develop a World Art History survey course

#### IMPLICATIONS FOR FACILITIES

- Add smart classrooms with Bluetooth projectors and virtual reality capability as well as sufficient space for Americans with Disabilities Act accessibility
- Add office and workspace to be shared among department members



# INSTRUCTIONAL PROGRAMS

# ASTRONOMY

**Astronomy** is the study of planets, satellites, asteroids, comets, meteors, the sun, the stars, and the galaxy.

### SCOPE OF COURSE WORK

- o Five degree-applicable courses
- o On-campus, hybrid, and online lecture, on-campus laboratory, off-campus lab trips at field site

### COURSES FULFILL

- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Natural Sciences
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Four additional sections of Astronomy were offered in fall 2015 to meet the College's overall increase in student enrollment. However, the average enrollment per section was lower in fall 2015 than in fall 2012, perhaps indicating that all of the additional sections may not have been necessary to meet students' needs.
- o **Productivity:** Although the fill rate at census was lower in 2015 compared to 2012, FTES increased slightly due to the increase in total enrollment.
- o **Student retention and success:** Student retention rates in Astronomy courses decreased between 2012–2015. The Mt. SAC average successful course completion rate for Astronomy courses in fall 2015 was below the statewide average for the same discipline.

### PROJECTED GROWTH FOR ASTRONOMY: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Although enrollment in Astronomy did not increase proportionate to the College-wide increase in enrollment from 2012 and 2015, Astronomy is projected to grow at the same pace as the College-wide growth rate because Astronomy courses provide students with requirements that fulfill general education breadth requirements.

### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to improve students' successful course completion rates, such as standardizing use of planetarium, standardizing pre- and post-testing, and expanding student access to STEM coaching
- o Develop an associate degree in Astronomy
- o Develop a career technical education program for entry-level positions in planetarium or museum occupations
- o Encourage enrollment in Astronomy courses by marketing the offerings to community members and groups who visit the planetarium
- o Develop an Introduction to Astrophysics course

### IMPLICATIONS FOR FACILITIES

- o Remodel the Observatory and Planetarium to:
  - Add storage for public use and classes
  - Expand the entry area
  - Add restrooms for K-12 students
  - Increase the Wi-Fi signal
- o Add a classroom and laboratory to be shared with Earth Sciences

### DATA

Astronomy (ASTR)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	760	772	1.6%
Number of Sections	22	26	18.2%
Average Enrollment per Section	34.6	29.7	-14.9%
<b>Productivity</b>			
Fill Rate at Census	114.4%	97.3%	-14.9%
Discipline FTES	79.4	80.0	1.3%
Discipline FTEF	4.4	5.2	18.2%
<b>Student Retention and Success</b>			
Retention Rate	86.1%	81.0%	-5.9%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Astronomy	86.1%	55%	66%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

# INSTRUCTIONAL PROGRAMS

## ATHLETICS

**Athletics** offers a range of intercollegiate sports to enhance the educational and competitive experience for student athletes. The curriculum includes instruction in training and conditioning as well as sports competition.

The College offers students the opportunity to participate in the following competitive athletic teams.

- o Baseball
- o Basketball (two teams)
- o Co-Ed Pep Squad
- o Cross Country (two teams)
- o Football
- o Golf (two teams)
- o Soccer (two teams)
- o Softball
- o Swimming and Diving (two teams)
- o Tennis (two teams)
- o Track and Field (two teams)
- o Volleyball
- o Water Polo (two teams)
- o Wrestling

### SCOPE OF COURSE WORK

- o 26 degree-applicable courses
- o On-campus activity

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Nine additional sections of Athletics courses were offered in 2012 compared to 2015. These courses were transferred to Athletics from Kinesiology – Team Sports. As a result, enrollment increased by 15 percent. However, the average enrollment per section declined by a little over 20 percent between 2012 and 2015.

- o **Productivity:** Both the fill rate at census and the amount of FTES earned in Athletics courses increased slightly between fall 2012 and fall 2015.
- o **Student retention and success:** Student retention rates in Athletics courses increased 5.5 percent between 2012–2015. The Mt. SAC average successful course completion rate for Athletics courses in fall 2015 was slightly better than the statewide average for the same discipline.

### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in various occupations related to the Athletics are projected to increase in number. Positions as a coach typically require a bachelor’s degree, and courses in Athletics at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees in Kinesiology. Refer to the section on Kinesiology in this document for other employment opportunities.

### PROJECTED GROWTH FOR ATHLETICS: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data and the labor market data, Athletics is projected to keep pace with the College’s growth rate.

### CHALLENGES AND OPPORTUNITIES

- o Comply with modified regulations from the California Community College Athletic Association, an affiliate of the National

### DATA

Athletics (KINX)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	946	1,088	15.0%
Number of Sections	20	29	45.0%
Average Enrollment per Section	47.3	37.5	-20.7%
<b>Productivity</b>			
Fill Rate at Census	94.4%	96.2%	1.9%
Discipline FTES	239.7	243.1	1.4%
Discipline FTEF	10.4	12.2	17.3%
<b>Student Retention and Success</b>			
Retention Rate	87.1%	91.8%	5.5%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Athletics	91.8%	75%	74%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### ATHLETICS (cont.)

- Collegiate Athletic Association, that require additional support and oversight of student athletes to meet transfer requirements
- Comply with Title IX regulations which require a balance between men's and women's athletics which in turn requires the addition of sports programs
- Align counseling support with athletes' schedules
- Expand the WIN Center to provide stronger academic support systems to student athletes
- Investigate the advantages of establishing competitive teams in these sports: beach volleyball, women's wrestling, badminton, and Lacrosse

#### IMPLICATIONS FOR FACILITIES

- Remodel the bleachers, locker rooms, offices, bathrooms, and shower facilities to meet Americans with Disabilities Act compliance requirements
- Locate the WIN Learning Center and the Division Office adjacent to Athletic instructional areas
- Add or remodel space as needed when new programs are added, such as women's wrestling or lacrosse

#### LABOR MARKET DATA: ATHLETICS

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015-2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
27-2022	Coaches and Scouts	15,470	17,080	10%	4,419	884	\$17.22	Bachelor's

#### NOTE

- Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# BIOLOGICAL SCIENCES

**Biological Sciences** are the sciences of life and living organisms, including their structure, function, growth, origin, evolution, conservation, and distribution. This area includes the disciplines of anatomy and physiology, biology, botany, microbiology, zoology, and public health.

**SCOPE OF COURSE WORK**

- o 29 degree-applicable courses, one non-degree-applicable course
- o On-campus lecture, on-campus laboratory

**COURSES FULFILL**

- o Requirements for an associate degree in Applied Laboratory Science Technology
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Kinesiology and Wellness
  - Natural Sciences
  - Social and Behavioral Sciences
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Reentry and retraining requirements for health professions
- o Prerequisites for entry into health programs such as nursing, pharmacology, physical and respiratory therapy, and radiological technology
- o Transfer requirements for Biology and Anthropology majors

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Twenty sections were added in Biological Sciences between 2012 and 2015 to meet student needs. The fact that the average

enrollment per section was comparable in the two semesters demonstrates that the additional sections met students' needs.

- o **Productivity:** Although fill rate at census was slightly lower in 2015 compared to 2012, FTES increased.
- o **Student retention and success:** The student retention rates for all Biological Sciences disciplines combined were comparable in fall 2012 and fall 2015. Mt. SAC's average successful course completion rate for fall 2015 in Anatomy and Physiology was slightly higher than the statewide rate for the same discipline. However, for the other three disciplines in the Biological Sciences, the student successful course completion rates were below the statewide averages for the same disciplines.

**PROJECTED GROWTH FOR BIOLOGICAL SCIENCES: FASTER THAN COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment and productivity data and labor market projections for increased employment opportunities in health science careers, Biological Sciences is projected to grow faster than the College's overall growth rate, contingent on the addition of laboratory and lecture space.

**CHALLENGES AND OPPORTUNITIES**

- o Collaborate with other Natural Sciences disciplines to develop an associate degree in Environmental Science

**DATA**

Biological Sciences (ANAT, BIOL, BTNY, MICRO)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	3,486	3,955	13.5%
Number of Sections	111	131	18.0%
Average Enrollment per Section	31.4	30.2	-3.9%
<b>Productivity</b>			
Fill Rate at Census	109.3%	103.5%	-5.3%
Discipline FTES	677.7	772.1	13.9%
Discipline FTEF	37.7	44.4	17.9%
<b>Student Retention and Success</b>			
Retention Rate	85.4%	83.0%	-2.9%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC Biological Sciences Combined	Mt. SAC By Discipline	Statewide By Discipline
Anatomy and Physiology	83.0%	66%	64%
Biology	83.0%	62%	67%
Botany	83.0%	53%	74%
Microbiology	83.0%	71%	77%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### BIOLOGICAL SCIENCES (cont.)

- Develop and implement strategies to improve students' successful course completion rates in Biology, Botany, and Microbiology
- Develop new programs in areas such as sustainability, bioinformatics, and biotechnology
- Provide entry-level training by developing career technical education programs that can be completed in two years
- Maximize the use of the expanded Wildlife Sanctuary by collaborating with other disciplines to develop a sustainability program
- Develop an associate degree for transfer in Biology
- Link traditional laboratory activities with career technical education training, such as Biological Sciences laboratory activities with Histologic Technician Training

#### IMPLICATIONS FOR FACILITIES

- Add four Biological Sciences laboratories with accompanying support space, such as a Microbiology Lab, a Physiology Lab, an Anatomy Lab, and an Organismal Biology Lab for marine biology and botany
- Remodel Dissection/Cadaver Lab
- Locate new and/or remodel laboratories near one another to facilitate interdepartmental collaboration and increase efficiency by sharing supplies, equipment and laboratory technicians
- Add offices
- Add a Waste Storage Room in collaboration with Chemistry that follows the District Laboratory, Safety, and Chemical Hygiene Plan

- Add classrooms
- Increase the size of the STEM learning center to be shared by students in all science disciplines
- Add a computer technology laboratory to be shared by students in all science disciplines



# INSTRUCTIONAL PROGRAMS

## BUSINESS LAW

**Business Law** courses introduce students to the principles of business law and the legal setting of business, including issues such as the nature of law and court procedures, contract law, torts, ethics, criminal law, corporations, bankruptcy, and the international legal environment for business.

### SCOPE OF COURSE WORK

- o Five degree-applicable courses
- o On-campus lecture, online, hybrid

### COURSES FULFILL

- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Business
- o Requirements for an associate degree for transfer in Business Administration

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Four additional sections of Business Law were offered in fall 2015 to meet the College's increased student enrollment. Enrollment increased 26.8 percent and the average enrollment per section decreased by approximately two students per section.
- o **Productivity:** Parallel to the pattern of the average enrollment per section, the near-capacity fill rate at census in fall 2012 decreased in fall 2015. The amount of FTES earned by Business Law courses increased proportionately to the increase in enrollment.
- o **Student retention and success:** The student retention rates in Business Law courses increased in fall 2015 compared to fall 2012. The Mt. SAC average successful course

completion rate for Business Law courses in fall 2015 was slightly higher than the statewide average for the same discipline.

### PROJECTED GROWTH FOR BUSINESS LAW: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data, Business Law is projected to keep pace with the College's overall growth, due at least in part to the recently approved associate degree for transfer in Business Administration.

### CHALLENGES AND OPPORTUNITIES

- o None at this time

### IMPLICATIONS FOR FACILITIES

- o Facilities needs will be met by the Business and Computer Technology Complex scheduled to open in 2017

### DATA

Business Law (BUSL)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	380	482	26.8%
Number of Sections	11	15	36.4%
Average Enrollment per Section	34.6	32.1	-7.0%
<b>Productivity</b>			
Fill Rate at Census	97.1%	89.3%	-8.0%
Discipline FTES	38.7	49.1	26.7%
Discipline FTEF	2.2	3.0	36.4%
<b>Student Retention and Success</b>			
Retention Rate	86.3%	91.1%	5.5%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Business Law	91.1%	72%	69%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

INSTRUCTIONAL PROGRAMS

# BUSINESS MANAGEMENT

**Business Management** prepares students for a variety of careers related to general management, human resources, international business, retail management, small business management, and marketing management.

**SCOPE OF COURSE WORK**

- o 11 degree-applicable courses
- o On-campus lecture, online, hybrid

**COURSES FULFILL**

- o Requirements for skills certificates (<18 units) in
  - Human Resources Management, Level I
  - International Business, Level I
  - Business Management, Level I
  - Retail Management, Level I
  - Small Business Management, Level I
- o Requirements for certificates of achievement (>18 units) in
  - Human Resources Management, Levels II and III
  - International Business, Levels II and III
  - Business Management, Level II and III
  - Retail Management, Levels II and III
  - Small Business Management, Levels II and III
- o Requirements for associate degrees in
  - Business Management
  - Business: Retail Management
  - Administrative Assistant
  - General Business
  - Human Resources Management
  - International Business
  - Marketing Management
  - Small Business Management

- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Business
- o Requirements for an associate degree for transfer in Business Administration
- o Transfer requirements for Business Administration majors

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** One fewer section of Business Management was offered in fall 2015 than in fall 2012. The average enrollment per section as well as the total enrollment decreased between these two semesters.
- o **Productivity:** The fill rates at census were strong in both semesters: at capacity in fall 2012 and 90 percent in fall 2015. The amount of FTES earned by Business Management courses decreased proportionately to the decrease in enrollment.
- o **Student retention and success:** The student retention rates in Business Management were comparable in 2012 and 2015. The Mt. SAC average successful course completion rate for Business Management courses in fall 2015 was slightly below the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to Business Management are projected to increase in number. Many positions require a bachelor's degree, and courses in Business Management at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn

**DATA**

Business Management (BUSO, BUSM, BUSS)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	1,387	1,237	-10.8%
Number of Sections	44	43	-2.3%
Average Enrollment per Section	31.5	28.8	-8.7%
<b>Productivity</b>			
Fill Rate at Census	100.9%	90.6%	-10.1%
Discipline FTES	142.1	126.4	-11.0%
Discipline FTEF	7.8	8.6	10.3%
<b>Student Retention and Success</b>			
Retention Rate	88.8%	87.8%	-1.2%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Business Management	87.8%	65%	73%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### BUSINESS MANAGEMENT (cont.)

skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for related occupations, such as sales representatives and supervisors of retail workers.

Students who are already employed may use Business Management courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate.

- Of the 25 students in this category who completed courses related to Banking and Finance, the median increase in their earnings was 53.8 percent.
- Of the 22 students in this category who completed courses related to Business and Commerce, the median increase in their earnings was 36.7 percent.
- Of the 113 students in this category who completed courses related to Business Management, the median increase in their earnings was 42.1 percent.
- Of the 12 students in this category who completed courses related to Marketing and Distribution, the median increase in their earnings was 66.1%.

#### PROJECTED GROWTH FOR BUSINESS MANAGEMENT: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. The labor market data project increased job opportunities in this field, although a bachelor's degree is required for

entry-level employment. Based on the trends in the enrollment and labor market data, and the new transfer degree in Business Administration, this discipline is projected to keep pace with the College's growth rate.

#### CHALLENGES AND OPPORTUNITIES

- Develop and implement strategies to increase students' successful course completion rates, including access to tutors and enhanced technology
- Provide professional development to faculty to assist in strategies for online pedagogy
- Increase online sections

#### IMPLICATIONS FOR FACILITIES

- Facilities needs will be met by the Business and Computer Technology Complex scheduled to open in 2017

#### LABOR MARKET DATA: BUSINESS MANAGEMENT

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
11-1021	General and Operations Managers	127,719	135,967	6%	25,179	5,036	\$50.12	Bachelor's
43-4051	Customer Service Representatives	102,993	110,947	8%	21,299	4,260	\$17.26	HS diploma or equivalent
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	79,903	83,478	4%	13,176	2,635	\$24.29	HS diploma or equivalent
41-1011	First-Line Supervisors of Retail Sales Workers	76,804	78,301	2%	12,334	2,467	\$16.85	HS diploma or equivalent
13-1199	Business Operations Specialists, All Other	55,355	58,314	5%	6,389	1,278	\$34.05	Bachelor's
13-1111	Management Analysts	46,106	51,569	12%	8,924	1,785	\$38.36	Bachelor's

#### NOTE

- Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

## INSTRUCTIONAL PROGRAMS BUSINESS MANAGEMENT (cont.)

LABOR MARKET DATA: BUSINESS MANAGEMENT (CONT.)

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
11-9199	Managers, All Other	43,217	45,371	5%	7,138	1,428	\$32.29	Bachelor's
11-2022	Sales Managers	31,761	32,651	3%	4,766	953	\$50.83	Bachelor's
11-3011	Administrative Services Managers	20,046	21,246	6%	3,158	632	\$44.69	Bachelor's
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	19,943	20,699	4%	3,001	600	\$34.59	Bachelor's
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	15,701	15,687	(0%)	2,381	476	\$30.90	Bachelor's
13-1051	Cost Estimators	11,384	11,973	5%	2,362	472	\$29.04	Bachelor's

**NOTE**

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

LABOR MARKET DATA: BUSINESS MANAGEMENT (CONT.)

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
11-3051	Industrial Production Managers	9,219	8,609	(7%)	1,285	257	\$44.76	Bachelor's
13-1022	Wholesale and Retail Buyers, Except Farm Products	9,049	9,364	3%	1,871	374	\$25.72	Bachelor's

**NOTE**

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

## INSTRUCTIONAL PROGRAMS

# CHEMISTRY

**Chemistry** studies the composition, structure, properties, and reactions of organic and inorganic matter. The program includes two tracks: one for nursing and health career majors and one for Chemistry majors.

### SCOPE OF COURSE WORK

- o Nine degree-applicable courses
- o On-campus and online lecture, on-campus laboratory

### COURSES FULFILL

- o Requirements for an associate degree in Applied Laboratory Science Technology
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Natural Sciences
  - Mathematics
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Requirements for degrees in Biology, Radiologic Technology, and Animal Science
- o Transfer requirements for Chemistry, Pharmacology, Engineering, and Nursing majors

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Seventeen additional sections of Chemistry were added between 2012 and 2015 to meet increased student demand. There was a slight decline in the average enrollment per section, which is understandable given the large number of sections that were added. Students' enrollment in the additional sections

demonstrates that these sections met students' needs.

- o **Productivity:** Although the fill rate at census was lower in 2015 compared to 2012, FTES increased due to the increase in total enrollment.
- o **Student retention and success:** The student retention rates for Chemistry courses increased between fall 2012 and fall 2015. The Mt. SAC average successful course completion rate in Chemistry courses for fall 2015 was above the statewide average for the same discipline.

### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in various occupations related to Chemistry are projected to increase in number. Positions such as biological technicians require a bachelor's degree, and courses in Chemistry at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for related occupations such as laboratory and chemical technicians. Students currently employed in the field may take Mt. SAC Chemistry courses to advance in their current positions.

### PROJECTED GROWTH FOR CHEMISTRY: FASTER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data and labor market projections for

### DATA

Chemistry (CHEM)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	1,046	1,449	38.5%
Number of Sections	38	55	44.7%
Average Enrollment per Section	27.5	26.4	-4.3%
<b>Productivity</b>			
Fill Rate at Census	123.4%	112.7%	-8.7%
Discipline FTES	290.8	399.3	37.3%
Discipline FTEF	19.8	28.3	43.1%
<b>Student Retention and Success</b>			
Retention Rate	84.9%	85.8%	1.1%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Chemistry	85.58%	72%	67%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### CHEMISTRY (cont.)

increased employment opportunities, Chemistry is projected to grow faster than the College's overall growth rate, contingent on additional laboratory space.

#### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to meet increased demand for courses with current limited space

#### IMPLICATIONS FOR FACILITIES

- o Add three laboratory suites, one dedicated to organic chemistry, that include appropriate safety measures, storage, and student lockers
- o Locate new and/or remodel laboratories near one another in the same building to facilitate interdepartmental collaboration and increase efficiency by sharing supplies, equipment, and laboratory technicians
- o Add a Waste Storage Room in collaboration with Biological Sciences that follows the District Laboratory, Safety, and Chemical Hygiene Plan
- o Tailor classrooms for Chemistry instruction
- o Increase the size of the STEM learning center to be shared by students in all science disciplines
- o Add a computer technology laboratory to be shared by students in all science disciplines
- o Add offices

#### LABOR MARKET DATA: CHEMISTRY

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	29,502	28,922	(2%)	3,913	783	\$17.46	High school diploma or equivalent
29-2012	Medical and Clinical Laboratory Technicians	8,451	9,429	12%	2,069	414	\$19.97	Associate
19-4021	Biological Technicians	2,690	2,940	9%	652	130	\$22.64	Bachelor's
19-4031	Chemical Technicians	2,312	2,370	3%	423	85	\$19.36	Associate

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# CHILD DEVELOPMENT

The **Child Development** program prepares students to work in preschool classrooms at the teacher, master teacher, supervisor, and administrator levels. The curriculum includes a theoretical framework and practical experience, with an emphasis on developing students' skills in observation and assessing, planning and executing activities, and classroom management strategies based on developmentally appropriate practices.

**SCOPE OF COURSE WORK**

- o 30 degree-applicable courses
- o On-campus lecture, on-campus laboratory, online, field work

**COURSES FULFILL**

- o Requirements for skills certificates (<18 units) in Children's Program Certificate: General—Level I
- o Requirements for certificates of achievement (>18 units) in
  - Children's Program Certificate: Administration
  - Children's Program Certificate: General—Levels II and III
  - Children's Program Certificate: Teaching
  - Infant/Toddler Development
  - School Age Child Specialization
- o Requirements for an associate degree in
  - Child Development
  - Educational Paraprofessional, Instructional Assistant
- o Requirements for an associate degree for transfer in Early Childhood Education
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Language Arts

- Social and Behavioral Sciences
- General education breadth requirements for transfer to CSU
- o Transfer requirements for Child Development majors

**EXTERNAL ACCREDITATION**

- o For Child Development Center: National Association for the Education of Young Children: Accreditation of Early Learning Programs

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Nineteen additional sections of Child Development were offered in fall 2015 to meet the College's increased student enrollment. Enrollment increased almost 19 percent, but the average enrollment per section decreased slightly between fall 2012 and fall 2015.
- o **Productivity:** Even with the additional sections, the fill rate at census was near capacity. The amount of FTES earned by Child Development courses increased proportionately to the increase in enrollment.
- o **Student retention and success:** The student retention rates in Child Development courses were comparable in 2012 and 2015. The Mt. SAC average successful course completion rate for Child Development courses in fall 2015 was below the statewide average for the same discipline.

**DATA**

Child Development (CHLD, EDUC)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	1,971	2,345	19.0%
Number of Sections	67	86	28.4%
Average Enrollment per Section	29.4	27.27	-7.3%
<b>Productivity</b>			
Fill Rate at Census	103.6%	94.8%	-8.5%
Discipline FTES	197.2	237.9	20.6%
Discipline FTEF	11.5	15.3	33.4%
<b>Student Retention and Success</b>			
Retention Rate	88.9%	89.0%	0.1%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Child Development	89.0%	67%	73%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### CHILD DEVELOPMENT (cont.)

#### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in various occupations related to Child Development are projected to increase in number. Administrative positions in childcare centers typically require a bachelor's degree, and courses in Child Development at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for occupations such as preschool teachers and teaching assistants.

Students who are already employed may use Child Development courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 67 students in this category who completed Child Development courses at Mt. SAC, the median increase in their earnings was 16.1 percent. Of the 11 students in this category who completed Child Development courses related to Special Education, the median increase in their earnings was 32.2 percent.

#### PROJECTED GROWTH FOR CHILD DEVELOPMENT: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data and the labor market data, Child Development is projected to keep pace with the College's overall growth. One note of

concern related to continued growth of the Child Development program is the low level of potential earning for students who complete the program.

#### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to increase students' successful course completion rates
- o Institutionalize services that were previously provided through the Child Development Workforce Initiative grant to improve students' employability, such as pediatric CPR, first aid training and California Child Development Program Permit Application review
- o Develop teacher preparation courses to satisfy the state requirement for qualifying Transitional Kindergarten teachers
- o Expand courses and certificates related to special needs children
- o Develop apprenticeship training arrangements with the Mt. SAC Child Development Center

#### IMPLICATIONS FOR FACILITIES

- o Remodel or redesign the steep vehicle path commonly used by parents and young children so that it is protected from the parent parking lot
- o Add facilities that include secure areas equipped for student observations and practicum activities

#### LABOR MARKET DATA: CHILD DEVELOPMENT

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
25-9041	Teacher Assistants	67,734	72,026	6%	12,807	2,561	\$14.94	Some college, no degree
25-2011	Preschool Teachers, Except Special Education	23,326	24,412	5%	4,799	960	\$14.05	Associate
11-9031	Education Administrators, Preschool and Childcare Center/Program	3,481	3,621	4%	716	143	\$22.18	Bachelor's

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# COMMUNICATION (SPEECH)

**Communication (Speech)** provides students with the tools to understand communication strategies, reasoning, logic, and critical analysis as these relates to human interaction within multiple cultural contexts. It is a broad-based discipline with foundational coursework in oral communication theory and skills development, augmented with course options that add dimension and depth to the student’s understanding of the discipline, such as interpersonal, group, intercultural communication, argumentation, communication research methods, and forensics. Students have an opportunity to apply these communication skills through participation on the College’s Forensics Team.

**SCOPE OF COURSE WORK**

- o 18 degree-applicable courses
- o On-campus lecture

**COURSES FULFILL**

- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Business
  - Communication
  - Humanities
  - Information Technology
  - Language Arts
  - Social and Behavioral Sciences
- o Requirements for an associate degree for transfer in Communication Studies
- o Requirements for an associate degree for transfer in Journalism
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)

- o Transfer requirements for Communications majors

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Twenty-one additional sections of Communication (Speech) were offered in fall 2015 to meet the increased student enrollment. As a result, enrollment increased almost 35 percent between fall 2012 and fall 2015.
- o **Productivity:** The overall fill rates at census were at capacity in both semesters in this snapshot. Following the increase in enrollment, the amount of FTES earned by this discipline increased almost 35 percent.
- o **Student retention and success:** The student retention rates in Communication (Speech) courses were above 90 percent in both 2012 and 2015. The Mt. SAC average successful course completion rate for Speech courses in fall 2015 was above the statewide average for the same discipline.

**PROJECTED GROWTH FOR COMMUNICATION (SPEECH): FASTER THAN COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data and the requirement for Communication (Speech) courses in all degrees, this discipline is projected to grow faster than the College’s overall growth rate.

**DATA**

Speech (SPCH)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	1,580	2,128	34.7%
Number of Sections	55	76	38.2%
Average Enrollment per Section	28.73	28	-2.5%
<b>Productivity</b>			
Fill Rate at Census	103.0%	98.0%	-4.9%
Discipline FTES	218.2	291.7	33.7%
Discipline FTEF	14.4	20.0	38.4%
<b>Student Retention and Success</b>			
Retention Rate	92.0%	90.2%	-2.0%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Communication (Speech)	90.2%	79%	77%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS COMMUNICATION (SPEECH) (cont.)

### CHALLENGES AND OPPORTUNITIES

- Develop and implement strategies to increase the number of students who complete the associate degree for transfer in Communication (Speech)
- Expand the forensics program

### IMPLICATIONS FOR FACILITIES

- Redesign and remodel Communication (Speech) classrooms to create a performance-based learning environment that
  - Is acoustically sound so that students can project their voices without competing with equipment noises;
  - Has sufficient space for students to practice non-verbal communication strategies such as platform walking;
  - Has the appropriate equipment so students can practice using visual aids, such as PowerPoint, while speaking and so that students' performances can be recorded;
  - Is free of barriers such as electrical floor receptacles;
  - Is conducive to interactive seminars instead of fixed desks; and
  - Includes sufficient space between the rows of desks for wheelchair accessibility.
- Add offices



INSTRUCTIONAL PROGRAMS

# COMPUTER AND NETWORKING TECHNOLOGY

**Computer and Networking Technology** prepares students to become computer and networking service technicians. The program provides foundations in basic electricity and electronics, operating systems, and computer service and troubleshooting, as well as more advanced training in networks, servers, and security. Students learn to install, configure, maintain, troubleshoot, and repair computers and networks. Students will become fully prepared to take the A+, Network+, Server+, and Security+ certification tests sponsored by CompTIA. Further, students will have requisite skills upon which to seek additional I.T. certifications available for the computer and networking fields.

**SCOPE OF COURSE WORK**

- o Nine degree-applicable courses
- o On-campus lecture, on-campus laboratory

**COURSES FULFILL**

- o Requirements for certificates of achievement (>18 units) in Computer and Networking Technology, Levels 1 and 2
- o Requirements for the certificate of achievement Computer Systems Technology
- o Requirements for associate degrees in
  - Computer and Networking Technology
  - Computer Networking and Security Management

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Enrollment in this program decreased a little over 22 percent between 2012 and 2015. One less section was offered in fall 2015 and the average enrollment per section decreased slightly. The average

enrollment per section in fall 2015 was approximately 22 students per section, which is close to the enrollment cap of 24 students per section for courses in this discipline.

- o **Productivity:** The fill rate at census was at capacity in both fall 2012 and fall 2015. The amount of FTES earned by Computer and Networking Technology increased slightly between 2012 and 2015.
- o **Student retention and success:** The student retention rates in Computer and Networking Technology courses decreased almost six percent between 2012 and 2015. There are no comparable statewide averages for successful course completion rates in Computer and Networking Technology.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to Computer Networking Technology are projected to increase in number. Positions such as Computer Systems Analyst typically require a bachelor’s degree, and courses in Computer and Networking Technology at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for related occupations such as computer network support specialists.

Students who are already employed may use Computer and Networking Technology courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer

**DATA**

<b>Computer and Networking Technology (CNET)</b>	<b>Fall 2012</b>	<b>Fall 2015</b>	<b>% Change</b>
<b>Enrollment</b>			
Enrollment	112	87	-22.3%
Number of Sections	5	4	-20.0%
Average Enrollment per Section	22.4	21.8	-2.9%
<b>Productivity</b>			
Fill Rate at Census	101.32%	100.2%	-1.2%
Discipline FTES	17.33	18.3	5.4%
Discipline FTEF	1.32	1.6	21.2%
<b>Student Retention and Success</b>			
Retention Rate	93.8%	88.2%	-5.9%

## INSTRUCTIONAL PROGRAMS

# COMPUTER AND NETWORKING TECHNOLOGY

(cont.)

to a four-year institution or complete a degree or certificate. Of the 16 students in this category who completed courses related to Computer Networking, the median increase in their earnings was 27.2 percent.

### PROJECTED GROWTH FOR COMPUTER AND NETWORKING TECHNOLOGY: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Given the enrollment in fall 2012 for Computer and Networking Technology and the optimistic labor market projections, this program is projected to grow at the same rate as the overall College-wide enrollment.

### CHALLENGES AND OPPORTUNITIES

- o Develop curriculum and certificate programs to meet ever-changing industry needs
- o Expand curriculum to include cyber security
- o Develop outreach strategies to identify qualified instructors in this changing field
- o Install software-defined networking

### IMPLICATIONS FOR FACILITIES

- o Customized an open space laboratory for Computer and Networking Technology needs and equipment
- o Add an additional computer laboratory/training room similar to room 404 in Building 28B

### LABOR MARKET DATA: COMPUTER AND NETWORKING TECHNOLOGY

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
15-1121	Computer Systems Analysts	21,313	23,877	12%	4,061	812	\$42.77	Bachelor's
15-1142	Network and Computer Systems Administrators	17,326	18,384	6%	2,286	457	\$39.56	Bachelor's
49-2011	Computer, Automated Teller, and Office Machine Repairers	6,523	6,203	(5%)	708	142	\$17.74	Some college, no degree
15-1152	Computer Network Support Specialists	7,979	8,557	7%	1,120	224	\$33.15	Associate
15-1141	Database Administrators	4,576	4,934	8%	892	178	\$44.72	Bachelor's
15-1143	Computer Network Architects	4,483	4,756	6%	687	137	\$55.63	Bachelor's
15-1122	Information Security Analysts	2,847	3,153	11%	505	101	\$48.15	Bachelor's

### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# COMPUTER INFORMATION SYSTEMS

**Computer Information Systems** prepares students to use computer technology and a variety of computer applications in a work environment. The program offers many options, including programming, database, networking, security, web applications, and office applications.

**SCOPE OF COURSE WORK**

- o 73 degree-applicable courses
- o On-campus lecture, on-campus laboratory, online, hybrid

**COURSES FULFILL**

- o Requirements for skills certificates (<18 units) in
  - Android Programming
  - C++ Programming
  - Game Programming Development
  - Excel and Access
  - Java Programming
  - Information and Operating Systems Security
  - Introduction to Computer Information Technology
  - LINUX
  - Microcomputer Productivity Software
  - Network Security
  - Networking
  - Object-oriented Design and Programming
  - SQL
  - Telecommunications
  - Visual Basic Programming
  - Web Programming
  - Windows Operating System Administration

- o Requirements for certificates of achievement (>18 units) in
  - Computer Networking Technology—Level 1
  - Computer Networking Technology—Level II
  - Computer Systems Technology
  - IOS Programming
  - Programming in C++
- o Requirements for associate degrees in
  - Computer Database Management Systems
  - Computer and Networking Technology
  - Computer Network Administration and Security Management
  - Computer Programming
- o Requirements for associate degrees in Liberal Arts and Sciences with an emphasis in
  - Business
  - Information Technology

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** In response to the College’s increased enrollment between 2012 and 2015, twenty additional sections of Computer Information Systems courses were offered in fall 2015. Although the average enrollment per section decreased, total enrollment increased almost 21 percent.
- o **Productivity:** In both semesters, the fill rates at census higher than or near 90 percent. The amount of FTES earned by Computer Information Systems courses decreased by almost 30 percent.
- o **Student retention and success:** The student retention rates in Computer Information Systems were slightly lower in 2015 than in

**DATA**

Computer Information Systems (CISX, CISB, CISD, CISM, CISN, CISP, CISS, CISW)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	1,789	2,162	20.8%
Number of Sections	60	80	33.3%
Average Enrollment per Section	29.8	27.0	-9.4%
<b>Productivity</b>			
Fill Rate at Census	97.0%	89.2%	-8.0%
Discipline FTES	323.7	227.2	-29.8%
Discipline FTEF	17.6	15.9	-9.7%
<b>Student Retention and Success</b>			
Retention Rate	82.5%	80.9%	-2.0%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Computer Information Systems	80.8%	56%	63%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### COMPUTER INFORMATION SYSTEMS (cont.)

2012. The Mt. SAC average successful course completion rate for Computer Information Systems courses in fall 2015 was below the statewide average for the same discipline

#### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in various occupations related to Computer Information Systems are projected to increase in number. Although several occupations related to this discipline require a bachelor's degree, and courses in Computer Information Systems at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for occupations such as computer user support specialists and web developers.

Students who are already employed may use Computer Information Systems courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate.

- Of the 37 students in this category who completed courses related to Computer Programming, the median increase in their earnings was 17.0 percent.
- Of the 42 students in this category who completed courses related to Information Technology, the median increase in their earnings was 31.7 percent.
- Of the 16 students in this category who completed courses related to Computer

Networking, the median increase in their earnings was 27.2 percent.

- Of the 23 students in this category who completed courses related to Computer Information Systems, the median increase in their earnings was 40.3 percent.
- Of the 10 students in this category who completed courses related to Software Applications, the median increase in their earnings was 6.8 percent.

#### PROJECTED GROWTH FOR COMPUTER INFORMATION SYSTEMS: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the recent enrollment data and the labor market projections for increased job opportunities in this field, Computer Information Systems is projected to grow faster than the College's growth rate.

#### CHALLENGES AND OPPORTUNITIES

- Develop and implement strategies to increase students' successful course completion rates
- Increase student enrollment by matching course schedule to current market conditions
- Increase mobile and game programming course offerings
- Develop a certificate in big data

#### IMPLICATIONS FOR FACILITIES

- Facilities needs will be met by the Business and Computer Technology Complex scheduled to open in 2017

#### LABOR MARKET DATA: COMPUTER INFORMATION SYSTEMS

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
43-6014	Administrative Assistants, Except Legal, Medical, and Executive	119,610	128,704	8%	15,866	3,173	\$18.24	HS diploma or equivalent
43-6011	Executive Secretaries and Executive Administrative Assistants	40,554	40,643	0%	2,814	563	\$27.86	HS diploma or equivalent
15-1132	Software Developers, Applications	29,047	32,194	11%	5,413	1,083	\$50.58	Bachelor's
15-1151	Computer User Support Specialists	28,943	31,601	9%	4,648	930	\$26.49	Some college, no degree
15-1121	Computer Systems Analysts	21,313	23,877	12%	4,061	812	\$42.77	Bachelor's
15-1133	Software Developers, Systems Software	19,264	20,222	5%	2,408	482	\$54.87	Bachelor's
15-1131	Computer Programmers	13,956	13,859	(1%)	2,155	431	\$41.38	Bachelor's

#### NOTE

- Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

## INSTRUCTIONAL PROGRAMS COMPUTER INFORMATION SYSTEMS (cont.)

### LABOR MARKET DATA: COMPUTER INFORMATION SYSTEMS (CONT.)

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
43-9021	Data Entry Keyers	13,750	13,972	2%	1,231	246	\$15.29	HS diploma or equivalent
15-1134	Web Developers	11,228	12,811	14%	2,378	476	\$28.76	Associate
15-1199	Computer Occupations, All Other	8,071	8,461	5%	1,038	208	\$35.62	Bachelor's
15-1141	Database Administrators	4,576	4,934	8%	892	178	\$44.72	Bachelor's
15-1122	Information Security Analysts	2,847	3,153	11%	505	101	\$48.15	Bachelor's

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties



INSTRUCTIONAL PROGRAMS

# COMPUTER SCIENCE

**Computer Science** is the study of problem-solving using computers. The curriculum includes program C++, Java, and assembly languages; introduction to Unix Operating System; and data structures.

**SCOPE OF COURSE WORK**

- o Eight degree-applicable courses
- o On-campus lecture, on-campus laboratory

**COURSES FULFILL**

- o Requirements for an associate degree for transfer in Mathematics
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Mathematics
- o Requirements for Physics and Engineering programs
- o Transfer requirements for Computer Science majors

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Although the number of sections offered in fall 2012 and fall 2015 were the same, the total enrollment in Computer Science courses increased, as did the average enrollment per section.
- o **Productivity:** This increase in enrollment while holding the number of sections stable increased the two primary measures of productivity: fill rate at census increased almost 16 percent and the amount of FTES earned by the discipline increased a little over 22 percent.
- o **Student retention and success:** The student retention rates in Computer Science courses decreased between fall 2012 and fall 2015, falling from an impressive 93.0 percent to

83.6 percent. The Mt. SAC average successful course completion rate for Computer Sciences courses in fall 2015 was higher than the statewide average for the same discipline.

**PROJECTED GROWTH FOR COMPUTER SCIENCE: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data, this stable and efficient transfer program is projected to keep pace with the College's overall growth.

**CHALLENGES AND OPPORTUNITIES**

- o Monitor statewide progress on developing an associate degree for transfer in Computer Science
- o Increase student retention by developing and implementing strategies to increase students' skills in the levels of Mathematics required for Computer Science

**IMPLICATIONS FOR FACILITIES**

- o Add another Computer Science instructional laboratory
- o Add a laboratory for student projects and after-hours student independent study

**DATA**

Computer Science (CSCI)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	205	237	15.6%
Number of Sections	8	8	0.0%
Average Enrollment per Section	25.6	29.6	15.6%
<b>Productivity</b>			
Fill Rate at Census	106.8%	123.4%	15.6%
Discipline FTES	34.7	42.5	22.3%
Discipline FTEF	2.3	2.6	13.0%
<b>Student Retention and Success</b>			
Retention Rate	93.0%	83.6%	-10.1%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Computer Science	83.6%	68%	65%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

# INSTRUCTIONAL PROGRAMS

## DANCE

**Dance** provides students with training in various dance genres, including ballet, social dance, jazz, tap, and modern dance and provides a foundational dance background in history, theory, kinesiology, and dance teaching methods. Dance Theory includes eight courses focusing on dance history, pedagogy, and Pilates.

### SCOPE OF COURSE WORK

- o 44 degree-applicable courses: 33 activity, 11 theory
- o On-campus lecture, on-campus activity

### COURSES FULFILL

- o Requirements for skills certificates (<18 units) in
  - Dance Teacher
  - Pilates Professional Teacher Training: Cadillac, Chair, Auxiliary
  - Pilates Professional Teacher Training: Mat and Reformer
- o Requirements for certificate of achievement (>18 units) in Dance Teacher
- o Requirements for an associate in arts degree in Liberal Arts and Sciences with an emphasis in Kinesiology and Wellness
- o General education breadth requirements for associate degrees
- o Transfer requirements for Dance majors

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Six additional sections of Dance were offered in fall 2015 compared to fall 2012. However, enrollment declined by almost five percent between these two semesters. Although the average enrollment per section declined to an average of approximately 21

students per section, many new courses have an enrollment cap of 18 students per section. Most sections are single offerings of a specific specialization.

- o **Productivity:** The fill rate at census was lower in 2015 compared to 2012, although the amount of FTES increased slightly between 2012 and 2015.
- o **Student retention and success:** Student retention rates in Dance courses were comparable in the two semesters. The Mt. SAC average successful course completion rate for Dance courses in fall 2015 was higher than the statewide average for the same discipline.

### LABOR MARKET DATA ANALYSIS

It is difficult to standardize labor market data for creative and performing arts because many of the employment opportunities are self-employment or freelance. According to the *2017 Otis Report of the Creative Economy*, the Los Angeles metropolitan area was home to the second largest number of creative workers, with more than 429,400 wage and salary workers in the creative industries. Between 2009–2014, the number of self-employed workers in the creative arts in Los Angeles and Orange counties increased at an annual average rate of 4.1 percent (31,641 firms in total), which is slightly higher than the region's 3.1 percent increase across all industries. (Source: *otis.edu*)

Over the next five years jobs in various occupations related to Dance are projected to increase in number. Courses in Dance at Mt. SAC prepare students for successful transfer in this major or for

### DATA

Dance (DNCE, DN-T)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	977	929	-4.9%
Number of Sections	38	44	15.8%
Average Enrollment per Section	25.7	21.1	-17.9%
<b>Productivity</b>			
Fill Rate at Census	94.3%	84.8%	-10.1%
Discipline FTES	96.5	97.8	1.4%
Discipline FTEF	4.5	5.1	13.0%
<b>Student Retention and Success</b>			
Retention Rate	84.6%	85.1%	0.7%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Dance	85.1%	79%	74%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### DANCE (cont.)

entry-level employment. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for employment as dancers, fitness trainers, and choreographers. Students currently employed in this field may take Mt. SAC Dance courses to gain new skills and advance in their current positions.

#### PROJECTED GROWTH FOR DANCE: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data, the level of enrollment reached in fall 2012, and the labor market data, Dance is projected to keep pace with the College's growth rate.

#### CHALLENGES AND OPPORTUNITIES

- o Develop targeted marketing for the Pilates certificate
- o Develop an associate degree in Dance
- o Add hybrid and online courses
- o Collaborate with Theater and Music to increase the numbers and types of productions

#### IMPLICATIONS FOR FACILITIES

- o Add offices and storage
- o Collaborate with Theater to reconfigure locker room and add larger lockers and additional restrooms
- o Develop spaces for students to gather and study

#### LABOR MARKET DATA: DANCE

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
27-2031	Dancers	1,298	1,385	7%	311	62	\$16.88	No formal educational
27-2032	Choreographers	403	445	10%	112	22	\$21.45	HS diploma or equivalent
39-9031	Fitness Trainers and Aerobics Instructors	15,033	17,028	13%	3,516	703	\$21.70	HS diploma or equivalent

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# EARTH SCIENCES

The **Earth Sciences** program includes the disciplines of geology, meteorology, and oceanography. These Earth Sciences introduce students to the theories and methodologies of studying the solid earth, ocean, and atmosphere.

**SCOPE OF COURSE WORK**

- o 15 degree-applicable courses
- o On-campus lecture, on-campus laboratory, 3 off-campus field activities

**COURSES FULFILL**

- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Natural Sciences
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Transfer requirements for Earth Science majors

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Three additional sections of courses in the Earth Science disciplines were offered in fall 2015 compared to the offerings in fall 2012. However, enrollment did not increase as a result of these additional sections. The average enrollment per section declined by approximately two students per section.
- o **Productivity:** The fill rate at census was lower in 2015 compared to 2012 while the amount of FTES earned in Earth Sciences courses was comparable in the two semesters.
- o **Student retention and success:** Student retention rates in Earth Science courses increased between 2012 and 2015. However, the Mt. SAC average successful course

completion rate for each Earth Science discipline in fall 2015 was significantly below the statewide average for the same disciplines.

**PROJECTED GROWTH FOR EARTH SCIENCES: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Although enrollment in the Earth Science disciplines did not increase proportionate to the College-wide increase in enrollment from 2012 and 2015, Geology, Oceanography, and Meteorology are projected to grow at the same pace as the College-wide growth rate because these courses provide students with requirements that fulfill general education breadth requirements.

**CHALLENGES AND OPPORTUNITIES**

- o Collaborate with other Natural Sciences disciplines to develop an associate degree in Environmental Science
- o Develop and implement strategies to improve students' successful course completion rates, such as increasing the number of linked lecture and laboratory courses and expanding student access to STEM coaching
- o Explore feasibility of adding a prerequisite, such as a one-unit science study skills
- o Develop an associate degree in Geoscience
- o Develop a career technical education program for students wishing to pursue entry-level positions in geotechnical, engineering geology, and environmental geology
- o Develop an associate degrees for transfer in Geological Science

**DATA**

Earth Science (GEOL, METO, OCEA)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	1,549	1,547	-0.1%
Number of Sections	50	53	6.0%
Average Enrollment per Section	31.0	29.2	-5.8%
<b>Productivity</b>			
Fill Rate at Census	108.3%	97.2%	-10.2%
Discipline FTES	167.8	168.9	0.7%
Discipline FTEF	10	11.4	14.0%
<b>Student Retention and Success</b>			
Retention Rate	83.7%	86.0%	2.8%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC Earth Sciences Combined	Mt. SAC By Discipline	Statewide By Discipline
Geology	86.0%	57%	71%
Meteorology	86.0%	40%	69%
Oceanography	86.0%	54%	74%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

INSTRUCTIONAL PROGRAMS  
EARTH SCIENCES (cont.)

- Revise curriculum as needed to include sustainability and greater use of the Wildlife Sanctuary
- Expand student research opportunities

IMPLICATIONS FOR FACILITIES

- Renovate Landers Field Station in Yucca Valley for field trips for Geology, Astronomy, and Biology
- Add a classroom and laboratory to be shared with Astronomy



# INSTRUCTIONAL PROGRAMS

## ECONOMICS

**Economics** courses, including both macro and microeconomics, analyze the production, distribution, and consumption of goods and services. Economics deals with a wide variety of topics such as aggregate economic analysis, economic cycles, supply and demand, consumer behavior, product pricing, factor pricing, government regulations, international trade, and comparative economic systems.

### SCOPE OF COURSE WORK

- o Five degree-applicable courses
- o On-campus lecture, online, hybrid

### COURSES FULFILL

- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Business
- o Requirements for an associate degree for transfer in Political Science
- o Requirements for an associate degree for transfer in Business Administration
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Transfer requirements for Economics majors

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Between 2012–2015 when College-wide enrollment increased, enrollment in Economic courses decreased 17 percent. One fewer section was offered in fall 2015 compared to fall 2012. Even with that reduction in the number of sections, the average enrollment per section decreased 13 percent.

- o **Productivity:** In fall 2012 the fill rate at census was at capacity. Mirroring the decline in enrollment, the fill rate at census and the amount of FTES earned by Economics courses decreased proportionately to the decrease in enrollment.
- o **Student retention and success:** The student retention rates in Economics courses were comparable in fall 2012 and fall 2015. The Mt. SAC average successful course completion rate for Economics courses in fall 2015 was below the statewide average for the same discipline.

### PROJECTED GROWTH FOR ECONOMICS:

**SLOWER THAN COLLEGE-WIDE GROWTH RATE**  
Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. The Economics program is likely to increase in enrollment over the next decade, due in part to the recently approved associate degree for transfer in Business Administration. However, but it is unlikely that the Economics program will grow at the same rate as the overall College-wide enrollment.

### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to improve students’ successful completion of Economics courses, such as embedded tutors

### IMPLICATIONS FOR FACILITIES

- o Facilities needs will be met by the Business and Computer Technology Complex scheduled to open in 2017

### DATA

Economics (BUSC)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	819	680	-17.0%
Number of Sections	23	22	-4.3%
Average Enrollment per Section	35.6	30.9	-13.2%
<b>Productivity</b>			
Fill Rate at Census	100.8%	86.0%	-14.7%
Discipline FTES	82.9	70.3	-15.2%
Discipline FTEF	4.6	4.4	-4.3%
<b>Student Retention and Success</b>			
Retention Rate	85.4%	84.7%	-0.8%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Economics	84.7%	63%	69%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

INSTRUCTIONAL PROGRAMS

# ELECTRONICS AND COMPUTER ENGINEERING TECHNOLOGY

**Electronics and Computer Engineering**

**Technology** includes coursework in digital systems, including microcontrollers and interfaces; electronic communications circuits and systems; and industrial electronics and programmable logic controls. This program prepares students either for initial employment, for enhancement of existing skills in electronics, and for transfer to four-year institutions with majors in Electronics Engineering Technology or Industrial Technology. Students completing the Electronics and Computer Engineering Technology program generally become electronics technicians, a career field that also includes such titles as engineering technician or technologist, laboratory technician, field service technician/engineer, field engineer, communications technician, industrial technician, and maintenance technician.

The comprehensiveness of the Electronics and Computer Engineering Technology program makes it unique in Southern California. There are no public or private two-year schools that regularly offer the full complement of hands-on, lab-intensive college-level curriculum with both circuit and systems emphases.

**SCOPE OF COURSE WORK**

- o 14 degree-applicable and two non-degree applicable courses
- o On-campus lecture, on-campus laboratory

**COURSES FULFILL**

- o Requirements for skills certificates (<18 units) in Electronic Assembly and Fabrication

- o Requirements for certificates of achievement (>18 units) in
  - Computer Systems Technology
  - Electronics and Computer Engineering Technology
  - Electronics Communications
  - Electronics Technology
  - Electronics: Industrial Systems
- o Requirements for an associate degree in Electronics and Computer Engineering Technology

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Enrollment Electronics and Computer Engineering Technology decreased a little over 7 percent between 2012 and 2015. One additional section was offered in fall 2015 and the average enrollment per section decreased slightly.
- o **Productivity:** The fill rates at census were at or near capacity in both fall 2012 and fall 2015. The amount of FTES earned by Electronics and Computer Engineering Technology decreased between 2012 and 2015.
- o **Student retention and success:** The student retention rates in Electronics and Computer Engineering Technology courses decreased slightly between 2012–2015. However, the Mt. SAC average successful course completion rate for Electronics and Computer Engineering Technology courses in fall 2015 was higher than the statewide average for the same discipline.

**DATA**

Electronics and Computer Engineering Technology (ELEC)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	290	269	-7.2%
Number of Sections	12	13	8.3%
Average Enrollment per Section	24.2	20.7	-14.4%
<b>Productivity</b>			
Fill Rate at Census	116.9%	98.9%	-15.3%
Discipline FTES	56.47	51.23	-9.3%
<b>Student Retention and Success</b>			
Retention Rate	90.6%	87.8%	-3.1%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Electronics and Computer Engineering Technology	87.8%	77%	74%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

# ELECTRONICS AND COMPUTER ENGINEERING TECHNOLOGY (cont.)

### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in various occupations related to Electronics and Computer Engineering Technology are projected to be stable. Advanced engineering positions may require a bachelor's degree, and courses in Electronics and Computer Engineering Technology at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for occupations such as electrical and electronics engineering technicians.

Students who are already employed may use Electronics and Computer Engineering Technology courses to advance in their current positions. Skills Builder data reflect the change in wages for those students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 21 students in this category who completed Electronics and Computer Engineering Technology courses at Mt. SAC, the median increase in their earnings was 128.5 percent.

### PROJECTED GROWTH FOR ELECTRONICS AND COMPUTER ENGINEERING TECHNOLOGY: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Given the enrollment trends for Electronics and Computer Engineering Technology and the labor market projections, this program is projected to grow at the same rate as the overall College-wide enrollment.

### CHALLENGES AND OPPORTUNITIES

- o Collaborate with other departments to provide introductory electronics sequences of courses for new certificates in
  - Video Engineering,
  - Robotic Technology,
  - Electrician Trainees,
  - Unmanned Aerial Vehicles, and
  - Manufacturing/Industrial Design Engineering
- o Revise curriculum as needed to incorporate the uses of electronics in fields, such as biomedical electronics and avionics as well as in transportation, such as hybrid vehicles, electric busses, mechatronics, and alternative energy

### IMPLICATIONS FOR FACILITIES

- o Customized an open space laboratory for Electronics and Computer Engineering Technology
- o Add an additional computer laboratory/training room similar to room 404 in Building 28B

### LABOR MARKET DATA: ELECTRONICS AND COMPUTER ENGINEERING TECHNOLOGY

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
17-3023	Electrical and Electronics Engineering Technicians	7,135	7,049	(1%)	981	196	\$29.74	Associate
51-2022	Electrical and Electronic Equipment Assemblers	11,507	10,853	(6%)	809	162	\$14.15	HS diploma or equivalent
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	2,499	2,532	1%	269	54	\$26.51	Postsecondary non-degree award
49-2092	Electric Motor, Power Tool, and Related Repairers	656	675	3%	129	26	\$22.34	Postsecondary non-degree award
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	592	594	0%	70	14	\$32.23	Postsecondary non-degree award

### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# EMERGENCY MEDICAL SERVICES

The **Emergency Medical Services** program encompasses the disciplines of Paramedic and Emergency Medical Technician. Emergency Medical Services prepares students for pre-hospital medical care. Training includes the fundamental principles and skills required to provide emergency medical care for the sick and injured at the scene of an emergency and/or transport to a healthcare facility.

**SCOPE OF COURSE WORK**

- o Emergency Medical Technician: Two courses
- o Paramedic: Two non-degree-applicable and eight degree-applicable courses

**COURSES FULFILL**

- o Requirements for a skills certificate (<18 units) in Emergency Medical Technician
- o Requirements for a certificate of achievement (>18 units) in Paramedic
- o Requirements for an associate degree in Emergency Medical Services

**EXTERNAL ACCREDITATION**

- o Emergency Medical Technician: Los Angeles County and State Emergency Medical Services Agency
- o Paramedic:
  - Committee on Accreditation of Allied Health Education Programs
  - Committee on Accreditation of Emergency Medical Services Professions

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Between 2012–2015 the number of sections offered in Emergency Medical

Services was reduced by 50 percent. The total enrollment decreased proportionately.

- o **Productivity:** In both semesters, the fill rates at census were above or near capacity. The amount of FTES earned by Emergency Medical Services courses decreased proportionately to the decrease in enrollment.
- o **Student retention and success:** The student retention rates in Emergency Medical Services courses increased noticeably between 2012–2015. The Mt. SAC average successful course completion rate for the Paramedic program in fall 2015 was above the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to Emergency Medical Services are projected to increase in number. Advanced positions in this field may require a bachelor’s degree, and courses in Emergency Medical Services at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees to meet the entry-level requirements for this field. Students currently employed in the field may take Mt. SAC Emergency Medical Services courses to advance in their current positions.

**PROJECTED GROWTH FOR EMERGENCY MEDICAL SERVICES: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the 2012

**DATA**

Emergency Medical Services (EMS, EMT, SL)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	425	192	-54.8%
Number of Sections	14	7	-50.0%
Average Enrollment per Section	30.4	27.4	-9.7%
<b>Productivity</b>			
Fill Rate at Census	115.2	96.3	-16.4%
Discipline FTES	80.4	49.5	-38.5%
Discipline FTEF	N/A	N/A	
<b>Student Retention and Success</b>			
Retention Rate	81.7	96.7	18.3%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC EMT and Paramedic Combined	Mt. SAC By Discipline	Statewide By Discipline
Emergency Medical Technician	90.8%	Not available	74%
Paramedic	90.8%	90%	87%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### EMERGENCY MEDICAL SERVICES (cont.)

enrollment in Emergency Medical Services courses and the labor market projection for increased job opportunities, Emergency Medical Services is projected to keep pace with the College's overall growth rate.

#### CHALLENGES AND OPPORTUNITIES

- o Develop specialty Paramedic certifications, such as Critical Care Paramedic, Flight Paramedic, Tactical Paramedic, and/or Community Paramedic
- o Partner with a four-year institution to develop a seamless program leading to a bachelor's degree in Emergency Medical Services

#### IMPLICATIONS FOR FACILITIES

- o Add a dedicated classroom and laboratory to include
  - Storage
  - Space for the ambulance training prop
  - Cascade system to fill oxygen cylinders

#### LABOR MARKET DATA: EMERGENCY MEDICAL SERVICES

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
29-2041	Emergency Medical Technicians and Paramedics	7,405	8,740	18%	2,007	401	\$14.59	Postsecondary non-degree award

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# ENGINEERING AND SURVEYING

**Engineering** is the art of applying scientific knowledge to practical problems. Programs include mechanical engineering (the design and construction of machines), civil engineering (buildings, bridges, and roads), Electrical and Computer Engineering (communications systems and electrical machines), chemical engineering (chemical plant and machinery), manufacturing engineering (design of processes for manufacturing of real goods), software engineering (design and implementation of software architecture), and aerospace engineering (aircraft).

**Surveying** is the examination and documenting of an area's boundaries and features for the purposes of constructing a map, plan, or description. The program prepares students for transfer as well as preparing non-engineering majors with robotics, computer-aided drafting and surveying skills that are needed in occupations such as architecture, electronics, and construction.

**SCOPE OF COURSE WORK**

- o Engineering: 11 degree-applicable courses
- o Surveying: Two degree-applicable courses
- o On campus lecture, on-campus laboratory

**COURSES FULFILL**

- o Transfer requirements for Engineering majors

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** The number of sections of Engineering and Surveying courses was increased from six in 2012 to 11 sections in 2015. As a result, enrollment increased by 44.2 percent. However, the average enrollment

per section declined, from an average of 31.7 students per section in fall 2012 to 24.9 students per section in fall 2015.

- o **Productivity:** Although the fill rate at census was lower in 2015 compared to 2012, the amount of FTES almost doubled due to the increased enrollment in Engineering and Surveying courses.
- o **Student retention and success:** The student retention rates in Engineering and Surveying courses decreased between 2012 and 2015. The Mt. SAC average successful course completion rate for Engineering and Surveying courses in fall 2015 was slightly below the statewide average for the same discipline.

**PROJECTED GROWTH FOR ENGINEERING AND SURVEYING: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data, Engineering and Surveying is projected to keep pace with the College-wide growth rate.

**CHALLENGES AND OPPORTUNITIES**

- o Develop four associate in science degrees:
  - Electrical and Computer Engineering Mechanical
  - Manufacturing and Aerospace Engineer
  - Software Engineering
  - Civil Engineering
- o Develop an interdisciplinary associate in science degree in Robotics in collaboration with Engineering, Manufacturing, and Electronics

**DATA**

Engineering and Surveying (ENGR, SURV)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	190	274	44.2%
Number of Sections	6	11	83.3%
Average Enrollment per Section	31.7	24.9	-21.3%
<b>Productivity</b>			
Fill Rate at Census	124.3%	94.3%	-24.1%
Discipline FTES	18.7	36.1	93.2%
Discipline FTEF	1.2	3.03	159.0%
<b>Student Retention and Success</b>			
Retention Rate	91.2%	87.8%	-3.7%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC Engineering and Surveying Combined	Mt. SAC Engineering	Statewide Engineering
Engineering	87.8%	73%	75%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### ENGINEERING AND SURVEYING (cont.)

- Develop skills certificates <18 units in
  - Mechanical Engineering Technology
  - Civil Engineering Technology
  - Electrical and Computer Engineering Technology
  - Software Engineering Technology
  - Environmental Engineering Technology
  - Chemical Engineering Technology
  - Surveying
  - Robotics
- Evaluate processes to support the transfer of students with who complete the pre-engineering curriculum
- Collaborate with local industry and makerspaces
- Evaluate lower-division courses at four-year institutions to ensure alignment with new courses and facilities, such as a strength of material laboratory

#### IMPLICATIONS FOR FACILITIES

- Add two engineering laboratories that includes secure storage
- Create a dedicated Engineering classroom with sufficient space for hands-on projects
- Add an indoor/outdoor fabrication and research laboratory
- Identify space on campus that could be dedicated to robotics competitions and research
- Locate all Engineering facilities in the same building



INSTRUCTIONAL PROGRAMS

# ENGINEERING CONSTRUCTION TECHNOLOGY

**Engineering Construction Technology**

provides training in a range of topics related to construction, such as building systems, sustainability, quality control, management and scheduling of resources (materials, equipment, time, personnel and finance). This program was titled **Inspection and Estimating, Building** prior to fall 2017.

**SCOPE OF COURSE WORK**

- o Five degree-applicable courses in Engineering Construction Technology (formerly Inspection and Estimating, Building)
- o On-campus lecture, on campus laboratory

**COURSES FULFILL**

- o Requirements for certificates of achievement (> 18 units) in
  - Construction Inspection
  - Engineering Construction Technology Levels I, II, and III (formerly Industrial Design Engineering)
- o Requirements for associate degrees in
  - Construction Inspection
  - Engineering Construction Technology (formerly Industrial Design Engineering)

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Enrollment in this program decreased by almost one-third between 2012–2015 due to the reduction in the number of sections offered. The average enrollment per section was comparable in the two semesters.
- o **Productivity:** The fill rate at census was higher in 2015 compared to 2012, although the amount of FTES earned by Engineering Construction Technology (formerly

Inspection and Estimating, Building) declined proportionately to the reduction in enrollment.

- o **Student retention and success:** The student retention rate in this discipline increased between 2012–2015. There is no statewide comparison for courses in Engineering Construction Technology (formerly Inspection and Estimating, Building).

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to Engineering Construction Technology are projected to increase in number. Positions such as occupational health and safety specialists require a bachelor’s degree, and courses in Engineering Construction Technology at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn certificates of achievement and associate degrees, which make them competitive applicants for occupations such as construction and building inspectors. Students currently employed in the field may take Mt. SAC Engineering Construction Technology courses to advance in their current positions.

**PROJECTED GROWTH FOR ENGINEERING CONSTRUCTION TECHNOLOGY: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Given the enrollment trends for Engineering Construction Technology and the labor market projections, this program is projected to keep pace with the overall College-wide enrollment.

DATA

**Engineering Construction Technology (formerly Inspection and Estimating, Building, INSP)**

	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	68	24	-64.7%
Number of Sections	3	1	-66.7%
Average Enrollment per Section	22.7	24	5.9%
<b>Productivity</b>			
Fill Rate at Census	94.4%	100.0%	5.9%
Discipline FTES	7.2	2.5	-65.0%
Discipline FTEF	0.6	0.2	-66.7%
<b>Student Retention and Success</b>			
Retention Rate	86.8%	91.7%	5.6%

INSTRUCTIONAL PROGRAMS  
**ENGINEERING CONSTRUCTION TECHNOLOGY**  
 (cont.)

CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to improve students' successful course completion rates
- o Develop two new certificates: Construction Management and Design Building Fabrication

IMPLICATIONS FOR FACILITIES

- o Remodel or add facilities to include:
  - Hands-on laboratory that students can access outside of class hours
  - Fabrication laboratory with outdoor access and multiple shop equipment
  - Tool crib
  - Storage for student projects
  - Dedicated flexible lecture space with storage
  - Adjacency to computer laboratory and lecture space

LABOR MARKET DATA: ENGINEERING CONSTRUCTION TECHNOLOGY

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	29,502	28,922	(2%)	3,913	783	\$17.46	HS diploma or equivalent
47-4011	Construction and Building Inspectors	4,508	4,829	7%	999	200	\$36.29	HS diploma or equivalent
29-9011	Occupational Health and Safety Specialists	2,018	2,180	8%	377	75	\$37.07	Bachelor's

NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

# INSTRUCTIONAL PROGRAMS

## ENGLISH

The English program consists of three types of courses:

- o The English program in composition develops effective expository writing skills, investigates the principles and methods of composition as applied to the writing of essays and the research paper, and increases the student's capacity for critical reading of academic material, logical analysis, and argumentative writing.
  - o The English program includes creative writing courses giving students opportunities to write fiction, poetry, non-fiction, and memoir.
  - o The English program also includes literature courses to introduce students to literature in English and literary analysis as well as write researched analytical papers.
- History
  - Psychology
  - o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
    - Humanities
    - Kinesiology and Wellness
    - Language Arts
    - Social and Behavioral Sciences
  - o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
  - o Transfer requirements for English majors

In addition the English Department includes two courses in Latin, which focus on reading basic Latin as it was written during the early, classical, and post-classical periods. These courses include the study of vocabulary, grammar, Roman culture, and the history of the Latin language.

### SCOPE OF COURSE WORK

- o 50 degree-applicable courses in English: 18 in Composition, 16 in Creative Writing, and 16 in Literature
- o Latin: two degree-applicable courses in Latin
- o On-campus lecture and hybrid

### COURSES FULFILL

- o Requirements for an associate degree for transfer in
  - Communication Studies
  - Humanities and Social Sciences

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Seven additional sections of English were offered in fall 2015 to meet the increased student enrollment. However, total enrollment and the average enrollment per section declined slightly between fall 2012 and fall 2015.
- o **Productivity:** The overall fill rates at census were at capacity in both semesters in this snapshot. The amount of FTES decreased slightly.
- o **Student retention and success:** The student retention rate in English courses decreased between 2012 and 2015. The Mt. SAC average successful course completion rate for English courses in fall 2015 was below the statewide average for the same discipline.

### PROJECTED GROWTH FOR ENGLISH: FASTER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data and the English requirements

### DATA

English, English Literature, Latin (ENGL, LIT, LATN)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	8,114	8,036	-1.0%
Number of Sections	279	286	2.5%
Average Enrollment per Section	29.1	28.1	-3.4%
<b>Productivity</b>			
Fill Rate at Census	102.0%	99.1%	-2.8%
Discipline FTES	1,115.4	1,104.7	-1.0%
Discipline FTEF	72.6	75.1	3.5%
<b>Student Retention and Success</b>			
Retention Rate	84.9%	82.8%	-2.5%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
English	82.8%	63%	67%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS ENGLISH (cont.)

for all degrees, this discipline is projected to grow faster than the College's overall growth.

### CHALLENGES AND OPPORTUNITIES

- o Expand the use of embedded tutors across the spectrum of English courses
- o Assess the consequences of the Common Assessment and adjust curriculum and practices as needed

### IMPLICATIONS FOR FACILITIES

- o Add classrooms, especially those that allow flexibility in seating arrangements and sufficient space for tutors
- o Increase availability and quality of classroom technology, such as
  - Multiple whiteboards
  - Wi-Fi, support for student devices (laptops and phones)
  - High quality video equipment
- o Increase access to computer laboratories
- o Add offices



INSTRUCTIONAL PROGRAMS

# FAMILY AND CONSUMER SCIENCE

The **Family and Consumer Science** program enhances the quality of life for individuals and families through education, creative endeavors, and public service, as well as training students to become Consumer Affairs professionals.

**SCOPE OF COURSE WORK**

- o Three degree-applicable courses
- o On-campus lecture, online

**COURSES FULFILL**

- o Requirements for a skills certificate (<18 units) in Consumer Relations
- o General education breadth requirements for transfer to CSU

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Four additional sections of Family and Consumer Science were offered in fall 2015 to meet the College’s increased student enrollment. Although enrollment increased 27 percent, the average enrollment per section decreased by an average of five students per section between fall 2012 and fall 2015.
- o **Productivity:** In both semesters, the fill rates at census were slightly over or slightly below capacity. The amount of FTES earned by Family and Consumer Science courses increased proportionately to the increase in enrollment.
- o **Student retention and success:** The student retention rates in Family and Consumer Science courses increased in fall 2015 compared to fall 2012, reaching an impressive 93.2 percent. The successful course

completion rate for students in Mt. SAC’s Family and Consumer Science courses in fall 2015 was higher than the statewide average for the same discipline.

**PROJECTED GROWTH FOR FAMILY AND CONSUMER SCIENCE: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data, Family and Consumer Science is projected to keep pace with the College’s overall growth.

Students who are already employed may use Family and Consumer Sciences courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013 – 2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 10 students in this category who completed Family and Consumer Sciences courses at Mt. SAC, the median increase in their earnings was 93.7 percent.

**CHALLENGES AND OPPORTUNITIES**

- o Submit Family and Consumer Science courses for consideration as fulfilling CSU general education breadth requirements

**IMPLICATIONS FOR FACILITIES**

- o None at this time

**DATA**

Family and Consumer Science (FCS)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	341	433	27.0%
Number of Sections	9	13	44.4%
Average Enrollment per Section	37.9	33.3	-12.1%
<b>Productivity</b>			
Fill Rate at Census	108.3%	96.5%	-10.9%
Discipline FTES	35.0	45.2	29.3%
Discipline FTEF	1.8	2.6	44.4%
<b>Student Retention and Success</b>			
Retention Rate	85.0%	93.2%	9.7%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Family and Consumer Science	93.2%	69%	65%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

# INSTRUCTIONAL PROGRAMS

# FASHION

The **Fashion** program prepares students for entry-level careers in the apparel industry and is composed of two segments:

- o Fashion Design and Technologies students acquire skills in various areas related to apparel technical design, including making CAD patterns, selecting textiles, draping, drawing apparel flats, and developing fashion collections.
- o Fashion Merchandising students acquire skills relating to the wholesale and retail business of fashion, including merchandising, selecting textiles, buying apparel, costing, and managing and promoting stores.

#### SCOPE OF COURSE WORK

- o 17 degree-applicable courses
- o On-campus lecture

#### COURSES FULFILL

- o Requirements for skills certificates (<18 units) in Fashion Computer Aided Design
- o Requirements for a certificate of achievement (>18 units) in
  - Fashion Design – Level I
  - Fashion Design – Level II
  - Fashion Merchandising – Level I
  - Fashion Merchandising – Level II
- o Requirements for associate degrees in
  - Fashion Design and Technologies
  - Fashion Merchandising

#### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Course offerings in Fashion were reduced from 21 to 15 sections between fall 2012 and fall 2015. The impact of this almost

29 percent reduction in the numbers of sections offered is seen in a parallel reduction in enrollment. The average enrollment per section was the same in both semesters.

- o **Productivity:** The fill rates at census were above 90 percent in both semesters, but the amount of FTES earned through Fashion courses decreased parallel to the decrease in student enrollment.
- o **Student retention and success:** There is room for improvement on both measures of student outcomes (retention and successful course completion rates). The student retention rates for Fashion courses decreased between 2012 and 2015. The successful course completion rate for students in Mt. SAC's Fashion program in fall 2015 was significantly below the statewide average for the same discipline.

#### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in various occupations related to Fashion are projected to increase in number. Positions such as fashion designer typically require a bachelor's degree, and courses in Fashion at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for related occupations such as merchandise displayers and window trimmers.

Students who are already employed may use Fashion courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level

#### DATA

Fashion (FASH)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	507	360	-29.0%
Number of Sections	21	15	-28.6%
Average Enrollment per Section	24.1	24.0	-0.6%
<b>Productivity</b>			
Fill Rate at Census	96.6%	92.2%	-4.6%
Discipline FTES	67.3	47.1	-30.0%
Discipline FTEF	5.4	3.8	-29.0%
<b>Student Retention and Success</b>			
Retention Rate	87.1%	76.0%	-12.8%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Fashion	76.0%	47%	71%

#### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP
- o The fall 2015 successful course completion rate of 47% was an analysis of student performance in core Fashion courses (6-digit TOPs code); considering all Fashion courses (4-digit TOPs code), the student successful course rate for fall 2015 was 56%

## INSTRUCTIONAL PROGRAMS

### FASHION (cont.)

CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 15 students in this category who completed Mt. SAC courses related to Fashion Design courses, the median increase in their earnings was 59.9 percent.

#### PROJECTED GROWTH FOR FASHION: SLOWER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the recent decrease in enrollment and the modest increase in the labor market data, Fashion is likely to increase in enrollment in the next decade, but it is unlikely to keep pace with the College's overall growth.

#### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to improve students' successful course completion rates
- o Expand curriculum to include
  - Three-dimensional applications and software
  - Skills now used across the fashion industry, including advanced retail software applications
- o Develop online and hybrid courses

#### IMPLICATIONS FOR FACILITIES

- o Add computers to Fashion Merchandising classrooms

#### LABOR MARKET DATA: FASHION

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
27-1026	Merchandise Displayers and Window Trimmers	5,480	5,702	4%	979	196	\$12.73	HS diploma or equivalent
27-1022	Fashion Designers	5,388	5,532	3%	824	165	\$31.79	Bachelor's

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

## INSTRUCTIONAL PROGRAMS

# FINE ARTS

**Fine Arts** offers studio courses that focus on knowledge and skill attainment in the study of the visual arts. The curriculum includes discursive critiques of form and content, skill-building practicum, and contextualizing discussions that develop visual literacy, critical thinking skills, and individual expression. Students have an opportunity to view art exhibits and display their work at the Gallery, which curates and hosts student and faculty art exhibits as well as traveling exhibits of traditional and contemporary art.

### SCOPE OF COURSE WORK

- o 46 degree-applicable courses
- o On-campus lecture, on-campus laboratory

### COURSES FULFILL

- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Fine Arts with a concentration in
  - Ceramics
  - Drawing
  - Figure
  - Gallery
  - Painting
  - Printmaking
  - Sculpture
- o Requirements for an associate degree for transfer in Studio Arts
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Transfer requirements for Fine Arts majors

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Enrollment in Fine Arts increased between 2012 and 2015 due to an increase

in the number of sections offered. Fifteen additional sections of Fine Arts courses were offered in fall 2015. This 20 percent increase in the number of sections offered resulted in a 25 percent increase in enrollment. The average enrollment per section was approximately 16 students per section in both semesters. This average is misleading, however, because many courses in this discipline are stacked, meaning that beginning and advanced sections of the same course are offered in the same room at the same time.

- o **Productivity:** Although the fill rate at census was lower in 2015 compared to 2012, FTES increased due to the increase in total enrollment.
- o **Student retention and success:** Student retention rates decreased slightly between 2012 and 2015. The Mt. SAC average successful course completion rate for Fine Arts courses in fall 2015 was below the statewide average for the same discipline.

### LABOR MARKET DATA ANALYSIS

Postsecondary degrees and certificates are often not required for employment in Fine Arts occupations. In addition, it is difficult to standardize labor market data for creative arts because many of the employment opportunities are self-employment or freelance. According to the *2017 Otis Report of the Creative Economy*, the Los Angeles metropolitan area was home to the second largest number of creative workers, with more than 429,400 wage and salary workers in the creative industries. Between 2009–2014, the number of self-employed workers in the creative arts in Los Angeles and Orange counties increased

### DATA

#### Fine Arts (ARTB, ARTZ, ARTS, ARTD, ARTG and ANIM 101A, 101B, 101C, 104, 111A, 111B, 107)

	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	1,326	1,626	22.6%
Number of Sections	81	95	17.3%
Average Enrollment per Section	16.4	17.1	4.6%
<b>Productivity</b>			
Fill Rate at Census	107.8%	104.6%	-2.9%
Discipline FTES	270.0	322.0	19.3%
Discipline FTEF	18.5	24.8	34.5%
<b>Student Retention and Success</b>			
Retention Rate	90.8%	88.7%	-2.3%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Fine Arts	90.8%	61%	68%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### FINE ARTS (cont.)

at an annual average rate of 4.1 percent (31,641 firms in total), which is slightly higher than the region's 3.1 percent increase across all industries. (Source: otis.edu)

Over the next five years jobs in various occupations related to the Fine Arts are projected to increase in number. Some related positions require a bachelor's degree, and courses in Fine Arts at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn associate degrees, which make them competitive applicants for related occupations. Students currently employed in the field may take Mt. SAC Fine Arts courses to advance in their current positions.

#### PROJECTED GROWTH FOR FINE ARTS: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Overall the labor market projections for Fine Arts are positive, as are the enrollment trends from 2012 and 2015. The Fine Arts Department is projected to keep pace with the College's overall growth rate.

#### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to increase students' successful course completion rates
- o Adjust the numbers and types of Fine Arts classes offered to accommodate the new Commercial and Entertainment Arts programs
- o Create a certificate of achievement in Gallery Design/Operations and Art Profession
- o Add level 1 and 2 certificates of achievement

- o in Sculptural Special Effects Make-up
- o Develop a computer course in Z brush
- o Add a certificate in Letterpress Book Arts
- o Revise curriculum as needed to align with the industry-appropriate balance between hands-on analog and digital techniques
- o Provide training in three-dimensional arts including industry-appropriate equipment computers for computer-aided design/ computer-aided manufacturing

#### IMPLICATIONS FOR FACILITIES

- o Add three wet/dry laboratories
- o Upgrade studios to meet campus standards for lighting, technology and audio-visual
- o Upgrade studios to support industry-appropriate equipment including computers
- o Remodel and upgrade display cases
- o Remodel the wood shop to increase safety and increase storage
- o Add an open lab for student projects and working outside of class time with 2-D and 3-D computer-aided design and manufacturing technologies and adjoining display/utility space
- o Add a makerspace with adjacent project planning space/room

#### LABOR MARKET DATA: FINE ARTS

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015-2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	6,720	7,142	6%	1,089	218	\$15.97	Bachelor's
27-1019	Artists and Related Workers, All Other	662	707	7%	110	22	\$19.54	No formal educational

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# FIRE TECHNOLOGY

**Fire Technology** is the study of the history, theory, and practice of fire prevention, fire detection alarms, fire behavior and chemistry, and firefighting strategies and tactics.

**SCOPE OF COURSE WORK**

- o 14 degree-applicable courses, three non-degree applicable courses
- o On campus lecture, on campus laboratory

**COURSES FULFILL**

- o Requirements for a skills certificate (<18 units) in Fire Officer Certification
- o Requirements for a certificate of achievement (>18 units) in Fire Technology
- o Requirements for an associate degree in Fire Technology

**EXTERNAL ACCREDITATION**

- o Office of the State Fire Marshal

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** The College in consultation and collaboration with the office of the State Fire Marshall and the College’s Fire Technology Advisory Committee determine the size and types of programs offered in Fire Technology. Between fall 2012 and fall 2016 the numbers of sections were reduced and therefore the total enrollment declined.
- o **Productivity:** In both semesters, the fill rates at census were at or close to capacity. The amount of FTES earned by Fire Technology courses decreased proportionately to the decrease in course offerings.

- o **Student retention and success:** Student retention rates in Fire Technology courses increased between 2012–2015. The Mt. SAC average successful course completion rate for Fire Technology courses in fall 2015 was below the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to the Fire Technology are projected to increase in number. Advanced positions in this field typically require a bachelor’s degree, and courses in Fire Technology at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for employment as firefighters, fire inspectors, and fire investigators.

Students who are already employed may use Fire Technology courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 28 students in this category who completed Fire Technology courses at Mt. SAC, the median increase in their earnings was 86.8 percent.

**PROJECTED GROWTH FOR FIRE TECHNOLOGY: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Although the schedule

**DATA**

Fire Technology (FIRE)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	1,233	669	-45.7%
Number of Sections	30	19	-36.7%
Average Enrollment per Section	41.1	35.2	-14.3%
<b>Productivity</b>			
Fill Rate at Census	93.9%	100.2%	6.7%
Discipline FTES	159.2	86.7	-45.5%
<b>Student Retention and Success</b>			
Retention Rate	88.4%	92.2%	4.3%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Fire Technology	92.2%	73%	83%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### FIRE TECHNOLOGY (cont.)

for this program is established collaboratively with local fire departments, based on the labor market data, Fire Technology is projected to keep pace with the College's overall growth.

#### CHALLENGES AND OPPORTUNITIES

- o Expand the Fire Technology work experience program
- o Develop and implement online courses and an online fire officers' certificate program
- o Implement the Office of the State Fire Marshall's new requirements that written and oral skills be included in the assessment of potential firefighters
- o Adjust curriculum as needed to align with the State Fire Marshall's Vision 2020 revisions to the requirements for currency
- o Ensure the stability of the program by developing a long-term agreement with the Chino Valley Independent Fire District

#### IMPLICATIONS FOR FACILITIES

- o Establish on-campus equipment hub space for the Fire Technology program to include
  - Indoor storage for five fire engines and equipment
  - Dust-free interior space for the air compressor and cylinder-filling station

#### LABOR MARKET DATA: FIRE TECHNOLOGY

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015-2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
33-2011	Firefighters	13,192	13,890	5%	2,684	537	\$33.73	Postsecondary non-degree award
33-1021	First-Line Supervisors of Fire Fighting and Prevention Workers	644	730	13%	252	50	\$56.18	Postsecondary non-degree award
33-2021	Fire Inspectors and Investigators	337	360	7%	74	15	\$47.17	Postsecondary non-degree award

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

# INSTRUCTIONAL PROGRAMS

# GEOGRAPHY

**Geography** is the study of the earth, including a local, regional, national, and global perspective of the environment in relation to societies and cultures. Geography prepares students to think critically with a broad understanding of the complex relationship between people and their environment and the resulting cultural phenomena such as population distribution, development, agriculture, language, and religion.

## SCOPE OF COURSE WORK

- o 12 degree-applicable courses
- o On-campus lecture, on-campus laboratory

## COURSES FULFILL

- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Social and Behavioral Sciences
- o Requirements for an associate degree for transfer in Geography
- o Requirements for an associate degree for transfer in Environmental Studies
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Transfer requirements for Geography majors

## DATA ANALYSIS/SUMMARY

- o **Enrollment:** Five additional sections of Geography were offered in fall 2015 to meet the increased student enrollment. The total enrollment in Geography courses increased 37.2 percent and the average enrollment per section increased slightly.
- o **Productivity:** The overall fill rates at census were above 90 percent in both and the

amount of FTES increased proportionately to the increase in enrollment.

- o **Student retention and success:** The student retention rates in Geography courses decreased slightly between fall 2012 and fall 2015. The Mt. SAC average successful course completion rate for Geography courses in fall 2015 was below the statewide average for the same discipline.

## PROJECTED GROWTH FOR GEOGRAPHY: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data, Geography is projected to keep pace with the College's overall growth.

## CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to improve students' successful course completion rates
- o Increase number of completed associate degrees for transfer in Geography
- o Increase the use of developing technology primarily in the Introduction to Geographic Information Systems course

## IMPLICATIONS FOR FACILITIES

- o Replace tablet-arm chairs with tables to provide room for maps and student collaboration on problem-solving
- o Design classrooms so that faculty can use multiple screens simultaneously

## DATA

Geography (GEOG)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	406	557	37.2%
Number of Sections	15	20	33.3%
Average Enrollment per Section	27.1	27.9	2.9%
<b>Productivity</b>			
Fill Rate at Census	94.1%	92.8%	-1.3%
Discipline FTES	41.4	56.4	36.3%
Discipline FTEF	2.8	4	41.3%
<b>Student Retention and Success</b>			
Retention Rate	83.4%	82.8%	-0.7%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Geography	82.8%	60%	68%

## NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

INSTRUCTIONAL PROGRAMS

# GRAPHIC DESIGN AND ILLUSTRATION

**Graphic Design and Illustration** provides students with a combination of the creative, design, technical, and problem-solving skills necessary for entry-level employment as a graphic designer in the commercial art industry.

**SCOPE OF COURSE WORK**

- o 13 degree-applicable courses
- o On-campus lecture, on-campus laboratory

**COURSES FULFILL**

- o Requirements for a skills certificate (<18 units) in Graphic Design—Level I
- o Requirements for a certificate of achievement (>18 units) in Graphic Design—Level II
- o Requirements for an associate degree in Liberal Arts and Sciences in Fine Arts with a concentration in
  - Graphic Design
  - Illustration
- o Requirements for an associate degree in Graphic Design

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Enrollment remained the same in 2012 and 2015 even though an additional section was offered in fall 2015. As a result, the number of students per section decreased by 9.1 percent. A possible reason for the decline in the average number of students per section is that some Graphic Design and Illustration courses added prerequisites.
- o **Productivity:** As a result of the decrease in enrollment, the fill rate at census and the amount of FTES earned by this discipline was lower in 2015 compared to 2012.

- o **Student retention and success:** Student retention rates decreased significantly between 2012 and 2015, from an impressive 92.9 percent in fall 2012 to 75.5 percent in fall 2015. Similarly, the Mt. SAC average successful course completion rate for Graphic Design and Illustration courses in fall 2015 was significantly lower than the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

It is difficult to standardize labor market data for creative arts because many of the employment opportunities are self-employment or freelance. According to the 2017 *Otis Report of the Creative Economy*, the Los Angeles metropolitan area was home to the second largest number of creative workers, with more than 429,400 wage and salary workers in the creative industries. Between 2009 and 2014, the number of self-employed workers in the creative arts in Los Angeles and Orange counties increased at an annual average rate of 4.1 percent (31,641 firms in total), which is slightly higher than the region’s 3.1 percent increase across all industries. (Source: otis.edu)

Over the next five years jobs in various occupations related to Graphic Design and Illustration are projected to increase in number. Positions such as art directors typically require a bachelor’s degree, and courses in Graphic Design and Illustration at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for related occupations such as web developers.

**DATA**

Graphic Design and Illustration (ARTC)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	266	266	0.0%
Number of Sections	10	11	10.0%
Average Enrollment per Section	26.6	24.2	-9.1%
<b>Productivity</b>			
Fill Rate at Census	106.4%	96.7%	-9.1%
Discipline FTES	58.2	53.6	-8.0%
Discipline FTEF	3.7	4.4	19.9%
<b>Student Retention and Success</b>			
Retention Rate	92.9%	75.5%	-18.7%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Graphic Design and Illustration	75.5%	56%	74%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

# GRAPHIC DESIGN AND ILLUSTRATION (cont.)

Students who are already employed may use Graphic Design and Illustration courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 61 students in this category who completed Graphic Design and Illustration courses at Mt. SAC, the median increase in their earnings was 52.0 percent.

### PROJECTED GROWTH FOR GRAPHIC DESIGN AND ILLUSTRATION: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Given the enrollment trends for Graphic Design and Illustration and the labor market data, this program is likely to keep pace with the College-wide growth rate.

### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to improve students’ successful completion of courses, degrees, and certificates, such as access to equity tutors and the design laboratory
- o Ensure alignment with degree and certificate requirements at four-year institutions
- o Create a transfer degree in Graphic Design and Illustration
- o Collaborate to develop multi-disciplinary programs, such as Environmental Design, Interior Design for the Consumer, and Commercial Design
- o Collaborate with Cal Poly and Cal State Fullerton to develop an academic pathway for student transfer

- o Collaborate with Photography, Aeronautics, and Aircraft Maintenance Technology to develop courses and a certificate in unmanned aircraft maintenance and repair
- o Develop a portfolio challenge course in which students’ art projects may fulfill course requirements
- o Develop online courses
- o Create student internship opportunities to support student acquisition of business management skills

### IMPLICATIONS FOR FACILITIES

- o Add a makerspace to be shared with Photography and Animation that includes adjacent brainstorming project collaboration rooms
- o Add a Working Studio that simulates a collaborative working environment
- o Add or remodel facilities to offer instruction in unmanned aerial vehicles/unmanned aircraft systems to include:
  - o A large classroom and innovative laboratory space
  - o Makerspace to support the unmanned aerial vehicle/unmanned aerial vehicle systems
  - o Outdoor netted facility for unmanned aerial vehicles/unmanned aircraft systems to be shared with other programs such as Aeronautics, Aircraft Maintenance Technology, and Photography
  - o Add a studio laboratory to be shared across the commercial and entertainment arts that supports group work, including flat screens for animation critiques, digital pads/pens, and large monitors

### LABOR MARKET DATA: GRAPHIC DESIGN AND ILLUSTRATION

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
27-1024	Graphic Designers	22,182	22,669	2%	3,383	677	\$23.00	Bachelor's
15-1134	Web Developers	11,228	12,811	14%	2,378	476	\$28.76	Associate
27-1014	Multimedia Artists and Animators	8,544	9,076	6%	1,388	278	\$33.50	Bachelor's
27-1011	Art Directors	6,401	6,676	4%	928	186	\$39.19	Bachelor's

### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# HISTOLOGIC TECHNICIAN TRAINING

**Histologic Technician Training** provides training in routine tissue sample preparation, special stains, and techniques such as immunohistochemistry and in situ hybridization. The curriculum is guided by standards set by the National Accrediting Agency for Clinical Laboratory Sciences and entry-level competencies set by the American Society of Clinical Pathologists.

**SCOPE OF COURSE WORK**

- o Seven degree-applicable courses including one required work experience course
- o On-campus lecture, on-campus laboratory, off-campus internships

**COURSES FULFILL**

- o Requirements for an associate degree with a major in Histologic Technician Training
- o Requirements for an associate in science degree
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Natural Science
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)

**EXTERNAL ACCREDITATION**

- o National Accrediting Agency for Clinical Laboratory Sciences

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Enrollment in both 2012 and 2015 filled the sections to capacity.
- o **Productivity:** Although fill rate at census increased between 2012–2015, a comparable

amount of FTES was earned by this discipline in both semesters.

- o **Student retention and success:** The student retention rate declined from an impressive 98 percent in 2012 to still-impressive 94 percent in 2015. Mt. SAC’s average successful course completion rate for fall 2015 was comparable to the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs for medical and clinical laboratory technicians are projected to increase in number, which is an optimistic labor market projection for the Histologic Technician Training program.

**PROJECTED GROWTH FOR HISTOLOGIC TECHNICIAN TRAINING: SLOWER THAN COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data and labor market projections for increased employment opportunities, Histologic Technician Training has the potential to keep pace with the College’s overall growth. However, the growth of this program is constrained by the limited number of off-campus clinical sites. Given this limit, this program is projected to continue to thrive with approximately the same number of students.

**CHALLENGES AND OPPORTUNITIES**

- o Develop and implement strategies to improve students’ successful course completion rates

**DATA**

Histologic Technician Training (HT)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	102	104	2.0%
Number of Sections	4	4	0.0%
Average Enrollment per Section	25.5	26.0	2.0%
<b>Productivity</b>			
Fill Rate at Census	100%	131.9%	31.9%
Discipline FTES	15.2	14.7	-3.2%
Discipline FTEF	1.2	1.2	0.0%
<b>Student Retention and Success</b>			
Retention Rate	98.0%	94.3%	-3.8%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Histologic Technician Training	94.3%	65%	73%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

INSTRUCTIONAL PROGRAMS

HISTOLOGIC TECHNICIAN TRAINING (cont.)

- o Reapply to State’s bachelor’s degree pilot program to offer a bachelor of science degree in Histotechnology
- o Introduce prerequisites to increase students’ graduation and success rates
- o When a bachelor’s degree in Histotechnology is approved, collaborate with Biological Sciences and Chemistry to develop courses as needed

IMPLICATIONS FOR FACILITIES

- o When a bachelor’s degree in Histotechnology is approved, add classroom space to accommodate program growth

LABOR MARKET DATA: HISTOLOGIC TECHNICIAN TRAINING

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
29-2012	Medical and Clinical Laboratory Technicians	8,451	9,429	12%	2,069	414	\$19.97	Associate

NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

# INSTRUCTIONAL PROGRAMS

## HISTORY

**History** provides students with the opportunity to examine the record of human development, with attention to changing social, political, economic, and cultural structures. The study of history is the endeavor to understand the present by becoming knowledgeable about the past.

### SCOPE OF COURSE WORK

- o 20 degree-applicable courses
- o On-campus lecture

### COURSES FULFILL

- o Requirements for an associate degree for transfer in History
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Humanities
  - Social and Behavioral Sciences
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o American Institutions requirement
- o Transfer requirements for History majors

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Twenty-one additional sections of History were offered in fall 2015 to meet the College's increased student enrollment. Although enrollment increased almost 25 percent, the average enrollment per section decreased slightly between fall 2012 and fall 2015.
- o **Productivity:** In both semesters, the fill rates at census were near capacity. The amount of FTES earned by History courses increased proportionately to the increase in enrollment.

- o **Student retention and success:** Student retention rates in History courses increased in fall 2015 compared to fall 2012. The Mt. SAC average successful course completion rate for History courses in fall 2015 was slightly below the statewide average for the same discipline.

### PROJECTED GROWTH FOR HISTORY: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data, History is projected to keep pace with the College's overall growth.

### CHALLENGES AND OPPORTUNITIES

- o Offer online sections

### IMPLICATIONS FOR FACILITIES

- o Design classrooms so that faculty can use multiple screens simultaneously
- o Install classroom technology that allows the simultaneous use of presentations and the white boards
- o Add or remodel classrooms that allow flexibility in seating arrangements

### DATA

History (HIST)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	2,630	3,271	24.4%
Number of Sections	66	87	31.8%
Average Enrollment per Section	39.9	37.6	-5.6%
<b>Productivity</b>			
Fill Rate at Census	99.0%	93.6%	-5.5%
Discipline FTES	275.9	348.2	26.2%
Discipline FTEF	13.2	17.4	31.8%
<b>Student Retention and Success</b>			
Retention Rate	80.8%	83.5%	3.3%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
History	83.5%	62%	64%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

INSTRUCTIONAL PROGRAMS

# HOSPITALITY AND RESTAURANT MANAGEMENT

**Hospitality and Restaurant Management**

prepares students for mid-level or manager-In-training positions in the hospitality industry. Students gain practical management training in food safety and sanitation, culinary arts, dining room service management, supervision, cost control, financial accounting, lodging management, and hospitality law.

**SCOPE OF COURSE WORK**

- o 14 degree-applicable courses
- o On-campus lecture, on-campus laboratory, online, hybrid

**COURSES FULFILL**

- o Requirements for skills certificates (<18 units) in
  - Culinary Arts
  - Hospitality: Event Planning and Catering
  - Hospitality: Food Services
  - Hospitality: Hospitality Management—Level I
  - Hospitality: Restaurant Management—Levels I and II
  - Nutrition
- o Requirements for a certificate of achievement (>18 units) in Hospitality Management—Level II
- o Requirements for an associate degree in Hospitality and Restaurant Management

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Six additional sections of Hospitality and Restaurant Management were offered in fall 2015 to meet the College’s increased student enrollment. Although enrollment increased a little over 12 percent,

the average enrollment per section decreased almost 30 percent between fall 2012 and fall 2015. This average is misleading, because some courses in this discipline are stacked, meaning that multiple sections may be offered in the same room at the same time.

- o **Productivity:** The fill rate at census in fall 2012 was at capacity, but decreased to 83.5 percent in fall 2015 when the additional sections were added. The amount of FTES earned by Hospitality and Restaurant Management courses increased proportionately to the increase in enrollment.
- o **Student retention and success:** Student retention rates in Hospitality and Restaurant Management courses were over 90 percent in fall 2012 and fall 2015. The Mt. SAC average successful course completion rate for Hospitality and Restaurant Management courses in fall 2015 was 100 percent, significantly higher than the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to Hospitality and Restaurant Management are projected to increase in number. Positions such as convention and event planners typically require a bachelor’s degree, and courses in Hospitality and Restaurant Management at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for related occupations such as food service managers.

**DATA**

Hospitality and Restaurant Management (HRM)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	244	274	12.3%
Number of Sections	10	16	60.0%
Average Enrollment per Section	24.4	17.1	-29.8%
<b>Productivity</b>			
Fill Rate at Census	99.7	83.5	-16.3%
Discipline FTES	26.8	30.3	12.9%
Discipline FTEF	2.1	2.6	21.1%
<b>Student Retention and Success</b>			
Retention Rate	91.4	91.7	0.3%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Hospitality and Restaurant Management	91.7%	100%	75%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

# HOSPITALITY AND RESTAURANT MANAGEMENT (cont.)

Students who are already employed may use Hospitality and Restaurant Management courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 15 students in this category who completed Hospitality and Restaurant Management courses at Mt. SAC, the median increase in their earnings was 74.2 percent.

### PROJECTED GROWTH FOR HOSPITALITY AND RESTAURANT MANAGEMENT: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data and the labor market projection that there will be increase job opportunities for students in this field, the Hospitality and Restaurant Management program is projected to keep pace with the College’s overall growth.

### CHALLENGES AND OPPORTUNITIES

- o Expand online course offerings to provide access for employed students
- o Collaborate with industry partners to increase internships to support student acquisition of workplace skills and a retail incubation process
- o Develop an associate degree in culinary arts in conjunction with the development of student-run restaurant

### IMPLICATIONS FOR FACILITIES

- o Add offices
- o Keep the training kitchen in Building 19B-5 to complement the commercial kitchen in the Business and Computer Technology Complex scheduled to be open in 2017

### LABOR MARKET DATA: HOSPITALITY AND RESTAURANT MANAGEMENT

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
35-2014	Cooks, Restaurant	60,969	70,907	16%	18,814	3,763	\$11.43	No formal educational credential
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	44,418	51,073	15%	13,900	2,780	\$14.61	HS diploma or equivalent
11-9051	Food Service Managers	25,609	28,157	10%	5,302	1,060	\$17.70	HS diploma or equivalent
35-2012	Cooks, Institution and Cafeteria	12,611	14,568	16%	3,815	763	\$13.70	No formal educational credential
35-1011	Chefs and Head Cooks	9,810	11,071	13%	2,059	412	\$17.57	HS diploma or equivalent
13-1121	Meeting, Convention, and Event Planners	5,921	6,682	13%	1,143	229	\$24.33	Bachelor’s
11-9081	Lodging Managers	1,981	1,964	(1%)	362	72	\$21.96	HS diploma or equivalent
35-2019	Cooks, All Other	1,029	1,124	9%	240	48	\$14.04	No formal educational credential

### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# INDUSTRIAL DESIGN ENGINEERING

**Industrial Design Engineering** is an applied art that combines the aesthetics and usability of products including the overall shape of the object, the location of details with respect to one another, colors, texture, sounds, and aspects concerning the use of the product ergonomics. This discipline includes computer-aided processes (CAD) for industrial design and manufacturing.

**SCOPE OF COURSE WORK**

- o 11 degree-applicable courses
- o On-campus lecture, on campus laboratory

**COURSES FULFILL**

- o Certificates of achievement (> 18 units) in
  - Industrial Design Engineering Levels I, II, and III
- o Requirements for associate degrees in
  - Industrial Design Engineering

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Enrollment in Industrial Design Engineering increased almost 200% between 2012–2015. Twice as many sections were offered in fall 2015 prompted by resurgence in manufacturing job opportunities. The average enrollments per section increased by almost 50 percent.
- o **Productivity:** The fill rate at census was over 90 percent in fall 2015 compared to 2012 and the FTES earned by Industrial Design Engineering increased proportionately to the increase in enrollment.
- o **Student retention and success:** Student retention rates in Industrial Design Engineering courses was equal to or slightly below 100 percent in 2012 and 2015. The Mt.

SAC average successful course completion rate for Industrial Design Engineering courses in fall 2015 was higher than the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to Industrial Design Engineering are projected to be relatively stable. Advanced positions in this field require a bachelor’s degree, and courses in Industrial Design Engineering at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn certificates of achievement and associate degrees, which make them competitive applicants for related occupations such as industrial design technicians. Students currently employed in the field may take Industrial Design Engineering courses at Mt. SAC to advance in their current positions.

**PROJECTED GROWTH FOR INDUSTRIAL DESIGN ENGINEERING: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Given the enrollment trends for Industrial Design Engineering and the stable labor market projections, this program is projected to increase in enrollment over the next decade, keeping pace with the overall College-wide enrollment.

**DATA**

Industrial Design Engineering (IDE)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	42	123	192.9%
Number of Sections	3	6	100.0%
Average Enrollment per Section	14.0	20.5	46.4%
<b>Productivity</b>			
Fill Rate at Census	51.9%	90.7%	74.8%
Discipline FTES	7.3	21.6	197.0%
Discipline FTEF	0.9	1.7	100.0%
<b>Student Retention and Success</b>			
Retention Rate	100.0%	96.9%	-3.1%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Industrial Design Engineering	96.9%	83%	75%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### INDUSTRIAL DESIGN ENGINEERING (cont.)

#### CHALLENGES AND OPPORTUNITIES

- o Collaborate with Architectural Technology to develop augmented reality technology and/or virtual reality technology degrees or certificates
- o Collaborate with Welding and Manufacturing Technology to develop an interdisciplinary degree

#### IMPLICATIONS FOR FACILITIES

- o Add or remodel facilities to include:
  - Space to increase student access and equipment acquisition
  - Industrial grade dust-collection system for safety of students, faculty, and equipment
  - Storage
- o Add laboratory for metrology

#### LABOR MARKET DATA: INDUSTRIAL DESIGN ENGINEERING

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	29,502	28,922	(2%)	3,913	783	\$17.46	HS diploma or equivalent
51-4041	Machinists	19,067	19,464	2%	3,401	680	\$17.06	HS diploma or equivalent
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	5,241	4,540	(13%)	998	200	\$13.94	HS diploma or equivalent
51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	3,288	2,938	(11%)	374	75	\$16.30	HS diploma or equivalent
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	6,775	7,094	5%	1,383	277	\$17.03	HS diploma or equivalent

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# INTERIOR DESIGN

The **Interior Design** program provides students with an interdisciplinary approach to fundamental design, space planning, design analysis, materials selection and specifications relating to residential and commercial spaces. The program focuses on design foundations, graphic communication, research and observation, experiential concept development, spatial development, and the social aspects of space.

**SCOPE OF COURSE WORK**

- o 22 degree-applicable courses
- o On-campus lecture, on-campus laboratory

**COURSES FULFILL**

- o Requirements for a skills certificate (<18 units) in Interior Design—Level I
- o Requirements for certificates of achievement (>18 units) in
  - Interior Design—Levels II and III
  - Interior Design Kitchen and Bath Specialization
- o Requirements for associate degrees in
  - Interior Design
  - Interior Design Kitchen and Bath

**EXTERNAL ACCREDITATION**

- o National Kitchen and Bath Association

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** One additional section of Interior Design was offered in fall 2015 to meet the College’s increased student enrollment. However, enrollment remained the same and the average enrollment per section decreased slightly between 2012–2015.

- o **Productivity:** The fill rate at census increased between fall 2012 and fall 2015. The amount of FTES earned by Interior Design courses decreased between these two semesters.
- o **Student retention and success:** The student retention rates in Interior Design courses increased significantly between fall 2012 and fall 2015. The successful course completion rate for students in Mt. SAC’s Interior Design courses in fall 2015 was comparable to the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in Interior Design are projected to increase in number. Employment as an interior or set designer typically require a bachelor’s degree, and courses in Interior Design at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for related occupations. Students currently employed in the field may take Mt. SAC Interior Design courses to advance in their current positions.

**PROJECTED GROWTH FOR INTERIOR DESIGN:**

**SLOWER THAN COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. During the period that College-wide enrollment increased between 2012 and 2015, the enrollment in Interior Design courses remained the same. Given the enrollment trends for Interior Design courses and the labor market data, Interior Design is projected to increase in

**DATA**

Interior Design (ID)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	247	247	0.0%
Number of Sections	14	15	7.1%
Average Enrollment per Section	17.6	16.5	-6.6%
<b>Productivity</b>			
Fill Rate at Census	88.4%	95.3%	7.8%
Discipline FTES	43	33.0	-23.3%
Discipline FTEF	3.8	3.3	-13.1%
<b>Student Retention and Success</b>			
Retention Rate	82.9%	91.6%	10.4%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Interior Design	91.6%	77%	78%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### INTERIOR DESIGN (cont.)

enrollment over the next decade, but it is unlikely to grow at the same rate as the overall College-wide enrollment.

#### CHALLENGES AND OPPORTUNITIES

- o Expand the curriculum to include current industry software and hardware, such as the creation of two-dimensional and three-dimensional images and models for communication with trades and clients
- o Provide professional development opportunities for interior design faculty on current industry software and hardware
- o Expand the curriculum to include the impact of e-commerce

#### IMPLICATIONS FOR FACILITIES

- o Add current industry hardware and software

#### LABOR MARKET DATA: INTERIOR DESIGN

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
27-1025	Interior Designers	7,964	8,335	5%	1,383	277	\$23.49	Bachelor's
27-1027	Set and Exhibit Designers	2,803	3,032	8%	590	118	\$23.24	Bachelor's

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

# INSTRUCTIONAL PROGRAMS

# JOURNALISM

**Journalism** includes the academic study of mass media and provides practical training in how to report, write, edit, and produce multimedia content for publication in print, broadcast, and online publications, as well as how to use social media and modern technology to communicate with the public. Journalism courses focus on how to apply critical thinking skills when consuming and producing mass media, how to identify reliable sources, how to collect information from those sources, and how to use that information to educate and inform the public using the tools of modern, multi-platform communication technology. This curriculum prepares students for careers in print and online media as writers, editors, photojournalists, designers, multimedia developers, and public relations practitioners.

The Journalism program provides students with hand-on experiences through preparing content for three digital publications:

- o SAConScene (Twitter at #SOSMtSAC)
- o Substance Magazine (<https://substance.media/>)
- o Sac.Media (<https://sac.media/>)

### SCOPE OF COURSE WORK

- o 14 degree-applicable courses
- o On-campus lecture

### COURSES FULFILL

- o Requirements for an associate degree for transfer in
  - Communication Studies
  - English
  - Journalism

- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Communication
  - Language Arts
- o General education breadth requirements for associate degrees and transfer to CSU
- o Transfer requirements for Journalism majors

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Enrollment in Journalism courses decreased between 2012–2015. Four fewer sections were offered in all 2015 than in fall 2012, and the average enrollment per section increased
- o **Productivity:** Although the fill rate at census was higher in 2015 compared to 2012, the amount of FTES earned in Journalism courses decreased slightly between 2012 and 2015.
- o **Student retention and success:** Student retention rates in Journalism increased to an impressive 96 percent in fall 2015. Similarly, the Mt. SAC average successful course completion rate for Journalism courses in fall 2015 was higher than the statewide average for the same discipline.

### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in various occupations related Journalism are projected to increase in number. Positions in occupations such as editors or reporters typically require a bachelor’s degree, and courses in Journalism at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn associate degrees, which make them competitive applicants for related occupations. Students currently employed in the field may take Mt. SAC Journalism courses to advance in their current positions.

### DATA

Journalism (JOUR)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	212	202	-4.7%
Number of Sections	13	9	-30.8%
Average Enrollment per Section	16.3	22.4	37.6%
<b>Productivity</b>			
Fill Rate at Census	60.5%	81.3%	34.3%
Discipline FTES	27.6	26.3	-5.0%
Discipline FTEF	1.9	2	3.6%
<b>Student Retention and Success</b>			
Retention Rate	81.6%	96.0%	17.6%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Journalism	96.0%	79%	71%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### JOURNALISM (cont.)

#### PROJECTED GROWTH FOR JOURNALISM: GROW SLOWER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Given the enrollment trends for Journalism and the labor market projections, this program is projected to increase in enrollment over the next decade, but it is likely that Journalism will grow slower than overall College-wide enrollment.

#### CHALLENGES AND OPPORTUNITIES

- o Maintain currency in equipment, professional development and curriculum given ongoing changes in digital online media
- o Provide students with opportunities to attend conferences and sessions that expose them to innovation and new media technology
- o Partner with professional media organizations to further advance the student media and professional opportunities for students
- o Market the associate degree in Journalism as a pathway for transfer
- o Collaborate with other programs that use digital technology to produce content for digital media

#### IMPLICATIONS FOR FACILITIES

- o None at this time

#### LABOR MARKET DATA: JOURNALISM

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
27-3043	Writers and Authors	14,862	15,842	7%	2,300	460	\$26.03	Bachelor's
27-3041	Editors	8,130	8,214	1%	1,775	355	\$27.31	Bachelor's
27-3022	Reporters and Correspondents	2,560	2,707	6%	639	128	\$19.28	Bachelor's
27-3021	Broadcast News Analysts	434	461	6%	100	20	\$31.86	Bachelor's

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

# INSTRUCTIONAL PROGRAMS

# KINESIOLOGY

**Kinesiology** is the study of human anatomy, physiology, and biomechanics as impacted by human movement. Courses prepare students for a range of careers, such as, physical therapy, sports medicine, coaching, health/wellness, and physical education for K–12 educators.

### SCOPE OF COURSE WORK

- o 85 degree-applicable courses
- o On-campus lecture, on-campus activity

### COURSES FULFILL

- o Requirements for skills certificates (<18 units) in
  - Coaching
  - Fitness Specialist/Personal Trainer
  - Athletic Trainer Aide I
- o Requirements for an associate in arts degree in Liberal Arts and Sciences with an emphasis in Kinesiology and Wellness
- o General education breadth requirements for associate degrees and transfer to CSU
- o Transfer requirements for Kinesiology majors

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Course scheduling and enrollment in Kinesiology have been impacted by recent state regulations that limit student repeatability of courses. Between 2012–2015, enrollment declined in three types of Kinesiology courses: Aquatics, Fitness, and Team Sports while enrollment increased in Individual and Theory Kinesiology courses. During the same period, the numbers of sections increased, resulting in a reduction in the average enrollment per section in all types of Kinesiology courses.

- o **Productivity:** The fill rate at census was lower in 2015 compared to 2012 for all types of Kinesiology courses except Team Sports. The amount of FTES increased for Individual and Theory Kinesiology courses, but decreased for all other types of Kinesiology courses.
- o **Student retention and success:** Student retention rates in all types of Kinesiology courses were comparable in 2012 and 2015, with the exception of Fitness Kinesiology courses in which student retention declined slightly. The Mt. SAC average successful course completion rate for all Kinesiology courses in fall 2015 was below the statewide average for the same discipline.

### DATA

#### Kinesiology: Adaptive (KINL)

	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	41	40	-2.4%
Number of Sections	2	2	0.0%
Average Enrollment per Section	20.5	20	-2.4%
<b>Productivity</b>			
Fill Rate at Census	136.7%	133.5%	-2.5%
Discipline FTES	3.9	3.9	-0.3%
Discipline FTEF	0.3	0.3	0.0%
<b>Student Retention and Success</b>			
Retention Rate	94.9%	78.6%	-17.2%

#### Kinesiology: Aquatics (KINA)

	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	300	235	-21.7%
Number of Sections	8	7	-12.5%
Average Enrollment per Section	37.5	33.6	-10.5%
<b>Productivity</b>			
Fill Rate at Census	127.2%	83.9%	-34.0%
Discipline FTES	31.5	24.7	-21.7%
Discipline FTEF	0.9	1.05	16.7%
<b>Student Retention and Success</b>			
Retention Rate	84.5%	85.5%	1.2%

## INSTRUCTIONAL PROGRAMS KINESIOLOGY (cont.)

### DATA (CONT.)

<b>Kinesiology: Fitness (KINF)</b>	<b>Fall 2012</b>	<b>Fall 2015</b>	<b>% Change</b>
<b>Enrollment</b>			
Enrollment	2,758	1,954	-29.2%
Number of Sections	45	62	37.8%
Average Enrollment per Section	61.3	31.5	-48.6%
<b>Productivity</b>			
Fill Rate at Census	102.7%	86.32%	-16.0%
Discipline FTES	197.1	133.1	-32.5%
Discipline FTEF	4.6	2.7	-41.5%
<b>Student Retention and Success</b>			
Retention Rate	77.7%	74.9%	-3.7%

<b>Kinesiology: Individual (KINI)</b>	<b>Fall 2012</b>	<b>Fall 2015</b>	<b>% Change</b>
<b>Enrollment</b>			
Enrollment	847	1,028	21.4%
Number of Sections	25	41	64.0%
Average Enrollment per Section	33.9	25.1	-26.0%
<b>Productivity</b>			
Fill Rate at Census	108.8	92.3	-15.2%
Discipline FTES	84.4	105.0	24.4%
Discipline FTEF	2.8	4.3	53.6%
<b>Student Retention and Success</b>			
Retention Rate	87.1	87.1	0.0%

### DATA (CONT.)

<b>Kinesiology: Theory (KIN)</b>	<b>Fall 2012</b>	<b>Fall 2015</b>	<b>% Change</b>
<b>Enrollment</b>			
Enrollment	1,213	1,532	26.3%
Number of Sections	28	42	50.0%
Average Enrollment per Section	43.3	36.5	-15.8%
<b>Productivity</b>			
Fill Rate at Census	118.0%	100.8%	-14.5%
Discipline FTES	120.8	155.1	28.5%
Discipline FTEF	5.3	8.1	52.3%
<b>Student Retention and Success</b>			
Retention Rate	92.1%	91.0%	-0.2%

<b>Kinesiology: Team Sport (KINS)</b>	<b>Fall 2012</b>	<b>Fall 2015</b>	<b>% Change</b>
<b>Enrollment</b>			
Enrollment	609	460	-24.5%
Number of Sections	19	23	21.1%
Average Enrollment per Section	32.1	20	-37.6%
<b>Productivity</b>			
Fill Rate at Census	100.9%	102.7%	1.7%
Discipline FTES	51.0	44.3	-13.2%
Discipline FTEF	1.8	1.7	-8.3%
<b>Student Retention and Success</b>			
Retention Rate	90.1%	92.1%	2.3%

## INSTRUCTIONAL PROGRAMS

### KINESIOLOGY (cont.)

#### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in various occupations related to Kinesiology are projected to increase in number. Positions such as athletic trainer or coach typically require a bachelor's degree, and courses in Kinesiology at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates and associate degrees, which make them competitive applicants for occupations such as fitness and aerobics instructors. Students currently employed in the field may take Mt. SAC Kinesiology courses to advance in their current positions.

#### PROJECTED GROWTH FOR KINESIOLOGY: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. The enrollment declines in Kinesiology courses between 2012–2015 were the result of statewide curricular changes. Going forward, given student interest in Kinesiology courses and the labor market data, this discipline is projected to keep pace with the College-wide growth rate.

#### CHALLENGES AND OPPORTUNITIES

- o Develop an associate of science degree in Kinesiology and Wellness
- o Develop strategies to provide ongoing fitness opportunities for students pursuing careers in public service
- o Develop online courses

#### IMPLICATIONS FOR FACILITIES

- o Add or remodel teaching facilities for flexible and multifunctional uses
- o Add equipment storage
- o Add offices
- o Remodel the locker rooms, offices, bathrooms, and shower facilities to meet Americans with Disabilities Act DA compliance requirements

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Kinesiology	92.1%	76%	79%

#### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

#### LABOR MARKET DATA: KINESIOLOGY

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
39-9031	Fitness Trainers and Aerobics Instructors	15,033	17,028	13%	3,516	703	\$21.70	HS diploma or equivalent
29-9091	Athletic Trainers	677	830	23%	232	46	\$22.63	Bachelor's
27-2022	Coaches and Scouts	15,470	17,080	10%	4,419	884	\$17.22	Bachelor's

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# LEARNING ASSISTANCE

The **Learning Assistance** Department offers courses to develop or strengthen students' successful entry into college-level programs. The Department offers credit courses in pre-collegiate reading, mathematics, writing, and study techniques courses that serve as prerequisites for transferable, college-level courses. This discipline also offers six degree-applicable courses in various aspects of the Learning Assistance discipline.

In addition to course sequencing, the College supports student progression from pre-collegiate basic skills courses to college-level curriculum through Learning Communities that connect instructional, academic support, and holistic student development activities.

**SCOPE OF COURSE WORK**

- o **Learning Assistance (LERN):** Five non-degree-applicable courses in Learning Assistance
- o **Learning Communities (LCOM):** Two degree-applicable courses and one non-degree-applicable course
- o **Reading (READ):** Two degree-applicable courses and two non-degree-applicable courses
- o **Study Techniques (STDY):** One degree-applicable course and three non-degree-applicable course
- o **Tutor Training (TUTR):** One degree-applicable course and four non-degree-applicable

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Enrollment in Learning Assistance courses decline a little over ten percent between fall 2012 and fall 2015. The

average enrollment per section decreased proportionately.

- o **Productivity:** Although the fill rate in fall 2012 was higher than the fill rate in fall 2015, the fill rates were above capacity in both semesters. The amount of FTES earned in Learning Assistance courses decreased between the two semesters proportionate to the decrease in enrollment.
- o **Student retention and success:** The student retention rates in Learning Assistance courses were approximately comparable in fall 2012 and fall 2015.

**PROJECTED GROWTH FOR LEARNING ASSISTANCE: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data, this discipline is projected to keep pace with the overall College-wide enrollment.

**CHALLENGES AND OPPORTUNITIES**

- o Develop pathways to more effectively link Learning Assistance courses with college-level courses
- o Adjust curriculum as needed to keep pace with statewide initiatives, such as multiple measures and accelerated instruction
- o Collaborate with English and Mathematics to develop and implement effective accelerated sequences of pre-collegiate courses

**IMPLICATIONS FOR FACILITIES**

- o Increase available space for students to study between classes and for small groups of students to collaborate with faculty

**DATA**

**Learning Assistance (LERN, LCOM, READ, STDY, TUTR)**

	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	3,672	3,281	-10.6%
Number of Sections	136	132	-2.9%
Average Enrollment per Section	27.0	24.9	-7.9%
<b>Productivity</b>			
Fill Rate at Census	109.9%	102.1%	-7.0%
Discipline FTES	354.8	320.4	-9.7%
Discipline FTEF	25.5	24.6	-3.3%
<b>Student Retention and Success</b>			
Retention Rate	87.4%	86.8%	-0.8%

# LEARNING CENTERS

**Learning Centers** are located across the campus in order to integrate subject-specific support services with instruction. This decentralized model locates support services close to the classrooms and laboratories where the instruction takes place.

The College places a high priority on student equity with a focus on reducing the achievement gap by tailoring support to meet the unique needs of underprepared and under-represented students. Distributing the Learning Centers across the campus is one strategy to reach more students and help them where they need it, thereby improving student success and equity. The individualized attention and support provided by the Learning Centers is especially critical given the national and local emphasis on student completion of transfer requirements, degrees and certificates.

All students are invited to use the resources in the following nine learning centers, each of which is tailored to provide support related to specific course content and majors.

- Language Learning Center: tutoring and audio laboratory for students' self-paced independent study of American Language (credit and noncredit ESL) and World Languages
- Learning Assistance Center:
  - Learning Assistance Resource Center offers workshops and tutoring to students enrolled in Learning Assistance courses
  - Learning Lab offers software, computer equipment, printing, and instructional support to all students

- Tutorial Services offers:
  - » Individual and group tutoring in Mathematics, writing, World Languages, and science courses,
  - » Online tutoring in mathematics and the sciences, and
  - » Embedded tutoring through the Supplemental Instruction program.
- Math Activities Resource Center: tutoring and other resources for students in Math 50 through Math 71 courses
- Speech and Sign Success Center: tutoring and digital recording laboratory for students' independent study of Sign Language/ Interpreting and Speech
- Science, Technology, Engineering, Mathematics (STEM) Center: peer coaching, counseling, workshops, preparation for transfer, and faculty office hours for students in science, technology, engineering, and mathematics courses
- Tech Ed Resource Center: group and individualized tutoring in basic skills with computer access to support student success for Career Technical Education students
- Transfer Math Activities Resource Center: tutoring and other resources for students enrolled in transfer-level mathematics courses together with the adjacent Math and Computer Science Lab which provides tutoring and computer support for transfer-level mathematics and computer science programming courses
- WIN Program: tutoring and study space to support student/athletes in maintaining academic eligibility and in transferring to four-year institutions

- Writing Center: individualized, group, and online tutoring in writing in both English classes and across the curriculum; computer resources, Directed Learning Activities, embedded tutors ("Tutors in the Classroom"), specialized tutoring for ESL students in for credit classes, and workshops to support students' writing skills

Tutoring is offered inside the Learning Centers. Additionally, tutor-led study groups, supplemental instruction, and tutors-in-the-classroom interventions take place outside of the Learning Centers. These effective strategies have been expanded through a myriad of funding sources, which increases the College's capacity to promote student success.

Three Student Services programs include Learning Centers for students admitted to specific programs. Refer to Chapter 4: *Student Services* for a description of the Achieving in College, Ensuring Success Center (ACES), the EOPS Tutoring Center, and the Math Student Success Center.

#### DATA ANALYSIS/SUMMARY

Although the individual centers use benchmarks to track workload and student success, these have not been standardized across the College's Learning Centers for the following reasons.

- The Learning Centers are tailored to meet specific student needs. Some of the Learning Centers have a narrow target audience, such as the Tech Ed Resource Center, and others are open to all students College-wide, such as the Learning Assistance Center.

- The Learning Centers are housed in facilities of different sizes. For example, the capacity of the Mathematics Activities Resource Center and the Transfer Mathematics Activities Resource Center in Building 61 is 237 students compared to the Speech and Sign Success Center in Building 22 with a capacity of 12–15 students.
- The Learning Centers do not offer the same services: workshops versus individual tutoring; coaching versus tutoring; computers access versus no computer access; and access to self-paced independent study resources or not.
- In response to state-funded initiatives that support student success and equity, Mt. SAC has in recent years established a number of small tutoring centers, such as those offered by ACES, ARISE, ASPIRE, Veterans Services, Accessibility Resource Centers for Students (formerly known as DSPS), STEM, and Business. Since these Centers function independently, there is no coordination of the services provided to students as well as no standardization of methods used to recording student contact hours and student outcomes.

#### PROJECTED GROWTH FOR ALL MT. SAC LEARNING CENTERS: FASTER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Although standardized data are not available to document the impact of the Learning Centers on student success, the Learning Centers provide the College's primary academic support for students outside of the classroom. California and the College have

## INSTRUCTIONAL PROGRAMS LEARNING CENTERS (cont.)

clearly articulated goals of improving rates of completion, success, and transfer for all students, and particularly for basic skills students and disproportionately impacted populations. The evidence amassed separately by a number of tutoring services across the College and the state shows that tutoring positively impacts student success and persistence.

### CHALLENGES AND OPPORTUNITIES

- Coordinate and integrate the student support offered by the distinct Learning Centers located across campus
- Develop standardized benchmarks of workload and student success to communicate the contributions of the Learning Centers
- Assess the demographics of students who use tutoring service for alignment with Student Equity Plan objectives
- Develop data collection strategies to identify achievement gaps to better assess the impact of student equity measures
- Align the most effective tutoring best practices with the unique needs of diverse student populations
- Collaborate with Human Resources to develop practices or policies to address the shortage of qualified peer tutors
- Develop a system to refer students to the Learning Center that is equipped to best meet their needs
- Develop innovative marketing strategies, including social media, to increase faculty and student use of the Learning Centers

### IMPLICATIONS FOR FACILITIES

- Include learning center space in each building where instruction is offered
- Upgrade technology as needed to keep pace with patterns and innovations in student use of learning technologies
- Configure space and furniture to meet the diverse pedagogical strategies that have been developed to meet varied student needs



INSTRUCTIONAL PROGRAMS

# LIBRARY/LEARNING RESOURCES

The **Library** offers students, faculty, staff, alumni, and community members a place to develop information and technology literacy, cultivate inquiry skills, engage in quiet study, and meet to collaborate.

The Library provides a primarily curriculum-based collection of print books and eBooks, as well as closed captioned DVDs and online streaming videos, specialized materials such as audiobooks, children’s books, career guides, titles adapted for English-as-a-Second-Language learners, and popular fiction and non-fiction materials.

Librarians offer two courses in library research and multiple workshops both in-person and online, digital learning objects through the Library website and guides, and 24/7 online chat reference. These instructional methods help students search strategically, evaluate critically, and document ethically using traditional and electronic resources. The workshops fulfill required and extra credit assignments in multiple disciplines.

To support equitable access to resources, the Library provides computers and software, enabling student use of electronic library resource collections and tools, as well as other campus resources such as the cloud-based learning management system. Printers, copiers, and remote printing services are also available to students.

**Learning Resources** is a broad term that refers to support for students and faculty beyond the Library services described in the previous section. Learning Resources services for students are provided through Learning Centers, which are

described in a separate section of this document. Learning Resources services for faculty are provided through the following two programs:

- o The **Faculty Center for Learning Technology** supports faculty use of education technology for all course types, traditional, hybrid, and fully online. The Center offers training in and the design of effective learning experiences using educational technology.
- o The **Professional and Organizational Development** department offers a variety of programs, resources, and services for the purposes of improving the performance of employees, teams, departments, and divisions.

**SCOPE OF LIBRARY COURSES**

- o Two degree-applicable courses
- o On-campus lecture and online

**COURSES FULFILL**

- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Social and Behavioral Sciences

**DATA ANALYSIS/SUMMARY**

Student use of Library resources increased between 2012–2013 and 2015–2016 on all measures. For example, between 2012–2013 and 2015–2016 College-wide student headcount increased almost 10 percent while student use of the Library increased 14 percent. Seating capacity increased nine percent between the two academic years in this snapshot and is now at the maximum capacity allowed to ensure Americans with Disabilities Act compliance. Library usage data as represented by gate count, study

**DATA**

<b>Library</b>	<b>2014–2015</b>	<b>2015–2016</b>	<b>% Change</b>
Gate Count	481,829	551,201	14.0
Study Rooms Occupancy Hours	25,641	30,220	17.8
Instructional Workshops Attendance	1,331	1,391	4.5
Collection: print books + media	78,227	78,745	0.7
Circulation: print	49,999	71,312	43.0
eBook downloads	82,344	85,352	3.6
Seating capacity	612	667	9.0

## INSTRUCTIONAL PROGRAMS LIBRARY/LEARNING RESOURCES (cont.)

room reservations, instructional workshops, and circulation of print and media materials indicate an increase in student use of the Library as a space to study and learn.

To accommodate growth in College enrollment, the Library maximized opportunities to serve students despite its limited space by offering 24/7 online chat reference librarian service, electronic databases, online library research guides, and other digital learning objects. The Library also began opening on Sundays and extended its open hours during finals week.

### PROJECTED GROWTH FOR THE LIBRARY/ LEARNING RESOURCES: FASTER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. The Library offers services to all students (credit and noncredit), faculty, and staff College-wide. Since the Library's space is inadequate to meet the College's needs today, it has limited capacity to serve more students as College enrollment grows. During research focus groups students reported feeling the Library is cramped and crowded with insufficient tables for students to study or rooms or areas for group work. The creative expansions of Library services to students are forward looking; however, the need for a library space that responds to the size of the College, programs, curricula, and reliance on computers is acute. For these reasons, it is projected that the Library will grow faster than the College-wide growth rate.

### CHALLENGES AND OPPORTUNITIES

- o Offer sufficient and comprehensive Library services to an expanding College student population with limited space
- o Adjust Library materials, processes, and practices to align with state initiatives, with unique needs of specific groups of students, and with changes in how students receive information and access resources
- o Collaborate with disciplines that assign research projects to embed information literacy into course content

### IMPLICATIONS FOR FACILITIES

- o Replace the current Library Building to provide additional interior and exterior space for:
  - Student study areas that accommodate both quiet private study and group interactive work
  - Classrooms
  - Flexible group work space adjacent to computer laboratories
  - Growth of the collection
  - Student collaboration as well as cross-discipline faculty collaboration
  - Student access to resources, such as reference librarians, printing, multi-media tools, and technology
  - Performances, film viewing, lectures, and exhibits
  - Space for student research and after-hours independent study
  - Offices that provide space for student interaction
  - Computer laboratory space for faculty to work with educational technology tools and/or to innovate pedagogy for online and hybrid classes



INSTRUCTIONAL PROGRAMS

# MANUFACTURING TECHNOLOGY

**Manufacturing Technology** trains students in the manipulative skills required to work as a machine metal worker, machine operator, production machinist, mechanical technician, or machinist.

**SCOPE OF COURSE WORK**

- o 11 degree-applicable courses
- o On-campus lecture, on campus laboratory

**COURSES FULFILL**

- o Certificates of achievement (> 18 units) in Manufacturing Technology
- o Requirements for associate degrees in Manufacturing Technology

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Enrollment in Manufacturing Technology grew 68 percent between 2012 and 2015 due to resurgence in manufacturing job opportunities. The average enrollments per section increased by approximately three students per section.
- o **Productivity:** The fill rate at census was over 100 percent in both fall 2012 and fall 2015. FTEs earned by Manufacturing Technology increased proportionately to the increase in enrollment.
- o **Student retention and success:** The student retention rate in Manufacturing Technology courses was over 90 percent in both 2012 and 2015. The Mt. SAC average successful course completion rate for Manufacturing Technology courses in fall 2015 was below the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Some jobs that require training in Manufacturing Technology are projected to increase while others are projected to decrease. Students interested in this field may earn certificates of achievement and associate degrees, which make them competitive applicants for occupations such as machinists and machine tool programmers. Students currently employed in the field may take Mt. SAC Manufacturing Technology courses to advance in their current positions.

**PROJECTED GROWTH FOR MANUFACTURING TECHNOLOGY: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Given the enrollment trends for Manufacturing Technology and the labor market projections, this program is projected to increase in enrollment over the next decade, keeping pace with the overall College-wide enrollment.

**CHALLENGES AND OPPORTUNITIES**

- o Collaborate with Welding and Industrial Design Engineering to develop an interdisciplinary degree

**IMPLICATIONS FOR FACILITIES**

- o Add or remodel facilities to include:
  - Space to increase student access and equipment acquisition
  - Industrial grade dust-collection system for safety of students, faculty, and equipment
  - Storage
- o Add laboratory for metrology

**DATA**

Manufacturing Technology (MFG)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	75	126	68.0%
Number of Sections	5	7	40.0%
Average Enrollment per Section	15.0	18.0	20.0%
<b>Productivity</b>			
Fill Rate at Census	101.5%	105.0%	3.5%
Discipline FTEs	9.8	16.7	69.6%
Discipline FTEF	0.9	1.3	51.0%
<b>Student Retention and Success</b>			
Retention Rate	94.4%	90.6%	-4.0%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Manufacturing Technology	90.6%	88%	93%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS MANUFACTURING TECHNOLOGY (cont.)

LABOR MARKET DATA: MANUFACTURING TECHNOLOGY

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
51-4041	Machinists	19,067	19,464	2%	3,401	680	\$17.06	HS diploma or equivalent
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	7,816	6,937	(11%)	466	93	\$14.02	HS diploma or equivalent
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	5,241	4,540	(13%)	998	200	\$13.94	HS diploma or equivalent
51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	3,288	2,938	(11%)	374	75	\$16.30	HS diploma or equivalent
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	6,775	7,094	5%	1,383	277	\$17.03	HS diploma or equivalent
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	4,015	3,864	(4%)	358	72	\$16.45	HS diploma or equivalent

LABOR MARKET DATA: MANUFACTURING TECHNOLOGY (CONT.)

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
51-4035	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	1,916	1,648	(14%)	151	30	\$17.76	HS diploma or equivalent
51-4199	Metal Workers and Plastic Workers, All Other	1,730	1,594	(8%)	143	29	\$14.80	HS diploma or equivalent
51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	1,562	1,384	(11%)	180	36	\$14.13	HS diploma or equivalent
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	1,433	1,499	5%	292	58	\$27.32	HS diploma or equivalent
51-4022	Forging Machine Setters, Operators, and Tenders, Metal and Plastic	1,386	1,210	(13%)	156	31	\$16.69	HS diploma or equivalent
51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	1,284	1,126	(12%)	102	20	\$14.44	HS diploma or equivalent
51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	860	764	(11%)	70	14	\$15.44	HS diploma or equivalent

**NOTE**

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

# INSTRUCTIONAL PROGRAMS

# MATHEMATICS

The **Mathematics** program offers a broad curriculum to serve a diverse student population in a supportive learning environment. Courses are designed to improve foundational skills, vocational skills, and fulfill associate degrees and transfer requirements. Students will gain analytical and logical thinking skills necessary for solving problems in business, social sciences, and STEM disciplines. The Mathematics curriculum offers students a variety of pathways and delivery modes to assist them in achieving their educational goals.

#### SCOPE OF COURSE WORK

- o 28 courses, five non-degree-applicable, 23 degree-applicable
- o On-campus and hybrid courses

#### COURSES FULFILL

- o Requirements for an associate degree for transfer in Mathematics
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Mathematics
  - Natural sciences
  - Social and Behavioral Sciences
  - General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Transfer requirements for Science, Engineering, Technology, and Mathematics majors

#### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Twenty-four additional sections of Mathematics courses were offered in fall 2015 to meet needs created by the College's enrollment growth. The average enrollment

per section was comparable in the two semesters, which demonstrates that the additional sections met students' needs.

- o **Productivity:** Although the fill rate at census was lower in 2015 compared to 2012, FTES increased due to the increase in total enrollment.
- o **Student retention and success:** The student retention rate in Mathematics courses increased slightly between 2012 and 2015. However, the Mt. SAC average successful course completion rate for Mathematics courses in 2015–2016 was below the statewide average for the same discipline.

#### PROJECTED GROWTH FOR MATHEMATICS: FASTER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data and the Mathematics requirements for all degrees, this discipline is projected to grow faster than the College's overall growth.

#### CHALLENGES AND OPPORTUNITIES

- o Develop strategies to retain underprepared students who begin at the first-level math sequences
- o Examine and evaluate accelerated non-traditional pathways offered by the Math Activities Resource Center and the Transfer–Mathematics Activities Resource Center
- o Create open-ended classes with computer-based laboratories
- o Incorporate supplemental tutoring support for students with mandatory additional hours

#### DATA

Mathematics (MATH)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	7,585	8,253	8.8%
Number of Sections	201	225	11.9%
Average Enrollment per Section	37.7	36.7	-2.8%
<b>Productivity</b>			
Fill Rate at Census	106.6%	103.7%	-2.7%
Discipline FTES	1,014.4	1,108.8	9.3%
Discipline FTEF	51.4	57.5	11.9%
<b>Student Retention and Success</b>			
Retention Rate	81.9%	82.4%	0.6%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Mathematics	82.4%	53%	56%

#### NOTES

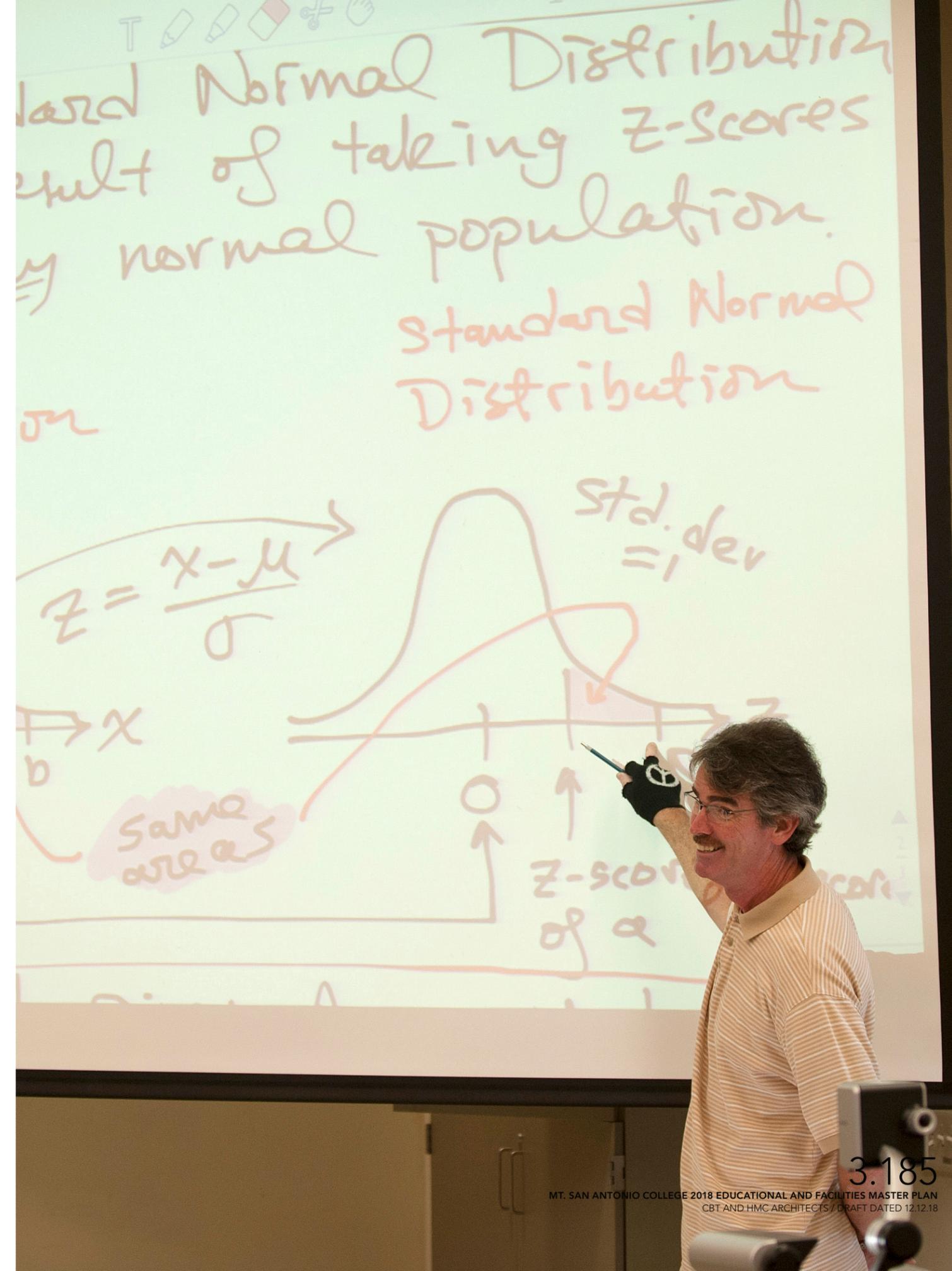
- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS MATHEMATICS (cont.)

- Expand hybrid courses
- Collaborate with Student Services to develop effective methods of placement and assessment

### IMPLICATIONS FOR FACILITIES

- Add or remodel instructional space to allow greater flexibility in room arrangements
- Add open space outside of classrooms and offices for collaboration and interaction between/among faculty members as well as between/among faculty and students
- Add storage for instructional equipment and materials
- Add offices
- Add a testing center with extended hours and a proctor to be shared College-wide
- Add a computer laboratory to offer self-paced Mathematics courses
- Increase the size of the Mathematics Activities Resource Center



INSTRUCTIONAL PROGRAMS

# MEDICAL TERMINOLOGY

**Medical Terminology** is the language used to describe the human body and its components, processes, conditions affecting it, and procedures performed upon it. This is a support course by a variety of the College’s health science programs.

**SCOPE OF COURSE WORK**

- o One degree-applicable course

**COURSES FULFILL**

- o Requirement for health sciences programs

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Four Medical Terminology sections were offered in both fall 2012 and fall 2015. Enrollment and the average number of students per section declined slightly in fall 2015 compared to fall 2012.
- o **Productivity:** In both semesters, the fill rates at census were above capacity. The amount of FTES earned by Medical Terminology courses decreased proportionately to the decrease in enrollment.
- o **Student retention and success:** Student retention rates in the Medical Terminology course were above 90 percent in both 2012 and 2015.

**PROJECTED GROWTH FOR MEDICAL TERMINOLOGY: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data and the labor market projections

that job opportunities will increase, Medical Terminology is projected to keep pace with the College’s overall growth.

**CHALLENGES AND OPPORTUNITIES**

Medical Terminology is a support course for Health Sciences disciplines; refer to these disciplines for challenges and opportunities.

**IMPLICATIONS FOR FACILITIES**

Medical Terminology is a support course for Health Sciences disciplines; refer to these disciplines for Implications for facilities.

**DATA**

Medical Terminology	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	190	178	-6.3%
Number of Sections	4	4	0.0%
Average Enrollment per Section	47.5	44.5	-6.3%
<b>Productivity</b>			
Fill Rate at Census	135.7	127.15	-6.3%
Discipline FTES	19.42	18.53	-4.6%
<b>Student Retention and Success</b>			
Retention Rate	93.0%	90.5%	-2.7%

# INSTRUCTIONAL PROGRAMS

## MUSIC

**Music** provides students with foundational coursework in music theory, history, and culture; training in the manipulation and creation of music using recent technology; and opportunities in performance, including solo, chamber, and large ensemble.

### SCOPE OF COURSE WORK

- o 48 degree-applicable courses
- o On-campus lecture, on-campus laboratory

### COURSES FULFILL

- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Music
- o Requirements for an associate degree for transfer in Music
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Transfer requirements for Music majors

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Fifteen additional sections of Music courses were offered in fall 2015 compared to fall 2012. Although the average enrollment per section decreased comparing the two semesters, the total enrollment in Music courses increased almost eight percent.
- o **Productivity:** The fill rate at census was lower in 2015 compared to 2012 and the FTES earned by Music courses increased only slightly.
- o **Student retention and success:** The student retention rates in Music courses were the essentially the same in fall 2012 and fall 2015. The Mt. SAC average successful course

completion rate for Music courses in fall 2015 was comparable to the statewide average for the same discipline.

### PROJECTED GROWTH FOR MUSIC: SAME AS COLLEGE-WIDE GROWTH RATE

It is difficult to standardize labor market data for creative arts because many of the employment opportunities are self-employment or freelance. According to the *2017 Otis Report of the Creative Economy*, the Los Angeles metropolitan area was home to the second largest number of creative workers, with more than 429,400 wage and salary workers in the creative industries. Between 2009–2014, the number of self-employed workers in the creative arts in Los Angeles and Orange counties increased at an annual average rate of 4.1 percent (31,641 firms in total), which is slightly higher than the region's 3.1 percent increase across all industries. (Source: otis.edu)

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data and this discipline's plans to increase enrollment through additional degrees and online courses, Music is projected to keep pace with the College's overall growth.

### CHALLENGES AND OPPORTUNITIES

- o Develop an online music appreciation course
- o Develop an audio and commercial music degree and certificate
- o Evaluate the benefits of offering additional performance opportunities, such as a Children's Choir School and an Orchestra Performance Group

### DATA

Music (MUS)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	2,605	2,804	7.6%
Number of Sections	91	106	16.5%
Average Enrollment per Section	28.6	26.5	-7.6%
<b>Productivity</b>			
Fill Rate at Census	96.5%	92.5%	-4.2%
Discipline FTES	295.7	298.5	0.9%
Discipline FTEF	16.3	19.5	19.7%
<b>Student Retention and Success</b>			
Retention Rate	87.6%	87.7%	0.1%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Music	87.7%	71%	72%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### MUSIC (cont.)

- Expand music theory to support audio and commercial degrees and certificates
- Collaborate with Dance and Theater to increase the numbers and types of productions

#### IMPLICATIONS FOR FACILITIES

- Collaborate with other disciplines to create a shared facility for music, audio-editing, audio recording, and production
- Add Orchestra, which will require the additional facilities, such as:
  - A music laboratory
  - A computer laboratory
  - Faculty offices
  - Practice rooms
  - Keyboard laboratory
  - Rehearsal space



## INSTRUCTIONAL PROGRAMS

# NURSING

The **Nursing** program prepares students for a complex, dynamic, and evolving profession as a registered nurse in hospitals and other health care settings. Nurses provide and coordinate patient care, educate patients and the public about health conditions, and provide advocacy and emotional support to patients and their family members. This program prepares students for the National Council Licensure Examination for Registered Nurses and encourages ongoing education and professional development.

### SCOPE OF COURSE WORK

- o 12 degree-applicable courses
- o On-campus lecture, on-campus laboratory and off-campus clinical practice

### COURSES FULFILL

- o Requirements for a skills certificate (<18 units) in LVN 30-Unit option - Career Mobility Track
- o Requirements for an associate degree in
  - Nursing
  - Licensed Vocational Nurse to RN
  - Psychiatric Technician to RN
- o Transfer requirements for Nursing majors

### EXTERNAL ACCREDITATION

- o California Board of Registered Nursing

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Given the limits on the number of students admitted into the Nursing program, the enrollment measures are consistent across the two semesters.
- o **Productivity:** In both semesters, the fill rates at census were near capacity. The amount

of FTES earned by the Nursing program increased between fall 2012 and fall 2015.

- o **Student retention and success:** Student retention rates in Nursing courses were impressively close to 100 percent in fall 2012 and fall 2015. The Mt. SAC average successful course completion rate for Nursing courses in fall 2015 was significantly higher than the statewide average for the same discipline.

### LABOR MARKET DATA ANALYSIS

Over the next five years jobs for registered nurses are projected to increase in number. These positions typically require a bachelor's degree, and courses in Nursing at Mt. SAC prepare students for successful transfer in this major. Students currently employed Licensed Vocational Nurses may take Mt. SAC Nursing courses to advance in their current positions.

### PROJECTED GROWTH FOR NURSING: SLOWER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data and labor market projections for increased employment opportunities, the Nursing program could keep pace with the College's overall growth. However, the growth of this program is constrained by the limited number of off-campus clinical sites. Given this limit, Nursing is projected to continue to thrive with approximately the same number of students.

### DATA

Nursing (NURS)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	664	655	-1.4%
Number of Sections	61	60	-1.6%
Average Enrollment per Section	10.9	10.9	0.3%
<b>Productivity</b>			
Fill Rate at Census	97.6%	98.6%	1.0%
Discipline FTES	141.3	158.2	12.0%
Discipline FTEF	24.4	25.6	5.0%
<b>Student Retention and Success</b>			
Retention Rate	98.0%	99.6%	1.7%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Nursing	99.6%	98%	88%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### NURSING (cont.)

#### CHALLENGES AND OPPORTUNITIES

- o Develop an associate degree for transfer in Nursing
- o Increase the number of clinical sites in order to increase student enrollment as well as students' range of experiences

#### IMPLICATIONS FOR FACILITIES

- o Update equipment and technology in the skills lab as well as in classrooms including smart boards, an audio system, and support for student devices at every seat
- o Add a dedicated health careers computerized testing room
- o Add a 120-seat classroom for presentations
- o Increase the size of the shared Health Careers Resource Center
- o Create outdoor areas for student seating

#### LABOR MARKET DATA: NURSING

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
29-1141	Registered Nurses	121,328	138,285	14%	32,896	6,579	\$45.85	Bachelor's

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# NUTRITION AND FOODS

The **Nutrition and Foods** program educates students in nutrition science, food, and food preparation, so they can improve their health and the health of their families and community, and prepares students to progress in a career in dietetics or food science.

**SCOPE OF COURSE WORK**

- o Seven degree-applicable and three non-degree applicable courses
- o On-campus lecture, on-campus laboratory, online, hybrid

**COURSES FULFILL**

- o Requirements for a skills certificate (<18 units) in Nutrition
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Kinesiology and Wellness
- o General education breadth requirements for transfer to CSU
- o Requirements for an associate degree for transfer in Nutrition
- o Transfer requirements for Nutrition majors

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Although the numbers of Nutrition and Foods sections were the same in 2012 and 2015, student enrollment and the average enrollment per section decreased by 10.6 percent.
- o **Productivity:** The fill rate at census decreased from over 100 percent in 2012 to 90 percent in 2015. The amount of FTES earned by Nutrition and Foods courses decreased proportionately to the decrease in enrollment.

- o **Student retention and success:** The student retention rates in Nutrition and Foods courses were virtually the same in 2012 and 2015. The Mt. SAC average successful course completion rate for students in Nutrition and Foods courses in fall 2015 was comparable to the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to Nutrition and Foods are projected to increase in number. Positions as a dietitian and nutritionist typically require a bachelor’s degree, and courses in Nutrition and Foods at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for occupations such as dietetic technicians.

Students who are already employed use Nutrition and Foods courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 40 students in this category who completed Nutrition and Foods courses at Mt. SAC, the median increase in their earnings was 21.3 percent.

**DATA**

<b>Nutrition and Foods (NF)</b>	<b>Fall 2012</b>	<b>Fall 2015</b>	<b>% Change</b>
<b>Enrollment</b>			
Enrollment	1,087	972	-10.6%
Number of Sections	32	32	0.0%
Average Enrollment per Section	34.0	30.4	-10.6%
<b>Productivity</b>			
Fill Rate at Census	103.7%	90.1%	-13.1%
Discipline FTES	111.7	101.8	-8.9%
Discipline FTEF	6.5	6.5	0.2%
<b>Student Retention and Success</b>			
Retention Rate	84.1%	83.7%	-0.5%

<b>Discipline</b>	<b>Retention Fall 2015</b>	<b>Successful Course Completion Rate Fall 2015</b>	
	Mt. SAC	Mt. SAC	Statewide
Nutrition and Foods	83.7%	69%	68%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### NUTRITION AND FOODS (cont.)

#### PROJECTED GROWTH FOR NUTRITION AND FOODS: SLOWER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. The labor market projections foresee an increase in the numbers of job opportunities at both the associate degree and bachelor's degree levels. Given the enrollment trends for Nutrition and Foods and these projections, Nutrition and Foods is likely to increase in student enrollment over the next decade, but it is unlikely to grow at the same rate as the overall College-wide enrollment.

#### CHALLENGES AND OPPORTUNITIES

- o Pursue the Commission of Dietetic Registration's and Accreditation Council for Education in Nutrition and Dietetics' requirements for associate level certification
- o Expand the curriculum as needed to prepare students to meet Certified Dietary Manager requirements
- o Develop an associate degree for transfer in Food Science

#### IMPLICATIONS FOR FACILITIES

- o Add space as needed to accommodate the requirements for an associate degree for transfer in Food Science
- o Add office space

#### LABOR MARKET DATA: NUTRITION AND FOODS

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
29-1031	Dietitians and Nutritionists	3,807	4,346	14%	699	140	\$33.66	Bachelor's
29-2051	Dietetic Technicians	1,538	1,737	13%	283	57	\$15.80	Associate

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# ORNAMENTAL HORTICULTURE

The **Ornamental Horticulture** program prepares students to breed, grow, and use ornamental plant varieties for commercial and aesthetic purposes. Students in this program benefit from hands-on experiences in two locations:

- o The Farm, a 110-acre living laboratory that is collaboratively shared by all specializations in the Agricultural Sciences Department, and
- o The College grounds, which includes a rich diversity of planting materials as well as mature trees and shrubs.

**SCOPE OF COURSE WORK**

- o 29 degree-applicable courses
- o On-campus lecture, on-campus laboratory, off-campus sites, online

**COURSES FULFILL**

- o Requirements for certificates of achievement (>18 units) in
  - Horticulture Science
  - Interior Landscaping
  - Landscape Construction
  - Landscape and Park Maintenance
  - Landscape Design I
  - Landscape Design II
  - Landscape Equipment Technology
  - Landscape Irrigation
  - Nursery Management
  - Park Management
  - Sports Turf Management
  - Tree Care and Maintenance
- o Requirements for associate degrees in
  - Agri-Technology
  - Equipment Technology
  - Integrated Pest Management

- Ornamental Horticulture
- Park/Sports Turf Management
- o Requirements for an associate degree for transfer in Plant Science
- o General education breadth requirements for associate degrees and transfer to CSU

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Two fewer Ornamental Horticulture sections were offered in fall 2015 compared to fall 2012. Enrollment decreased by a little over 12 percent and the average enrollment per section decreased slightly.
- o **Productivity:** The fill rates at census were above capacity in both 2012 and 2015. The amount of FTES earned in Ornamental Horticulture courses decreased proportionate to the decrease in enrollment.
- o **Student retention and success:** The student retention rates in 2012 and 2015 were the same for Ornamental Horticulture courses. The Mt. SAC average successful course completion rate for Ornamental Horticulture courses in fall 2015 was significantly below the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to Ornamental Horticulture are projected to increase in number. Advanced positions may require a bachelor's degree, and courses in Ornamental Horticulture at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn certificates of achievement and associate degrees, which make them competitive applicants for

**DATA**

Ornamental Horticulture (AGOR)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	533	466	-12.6%
Number of Sections	19	17	-10.5%
Average Enrollment per Section	28.1	27.4	-2.3%
<b>Productivity</b>			
Fill Rate at Census	104.4%	106.2%	1.7%
Discipline FTES	79.9	68.1	-14.8%
Discipline FTEF	5.3	4.6	-12.6%
<b>Student Retention and Success</b>			
Retention Rate	88.9%	88.4%	-0.5%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Ornamental Horticulture	88.4%	58%	74%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### ORNAMENTAL HORTICULTURE (cont.)

occupations, such as farm equipment mechanics. Students who are already employed may use Ornamental Horticulture courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013 – 2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 10 students in this category who completed courses at Mt. SAC related to careers in Horticulture, the median increase in their earnings was 33.0 percent.

#### PROJECTED GROWTH FOR ORNAMENTAL HORTICULTURE: FASTER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive enrollment trends and labor market projections for increased employment opportunities, Ornamental Horticulture is projected to exceed the College's projected overall growth rate.

The following curricular changes promise to support the continuation of the positive trends in Ornamental Horticulture:

- o The number of units required to complete certificates has been reduced with the aim of increasing student enrollment and certificate completion rates
- o Methods of instruction now include online and hybrid options
- o Certificate programs in high demand areas (Urban Sustainable Agriculture, Landscape Water Management, and Organic Production) will be developed

#### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to increase students' successful course completion rates
- o Expand the curriculum to include new or revised topics/courses that incorporate contemporary topics, such as drought and water issues; pesticides and fertilizer regulations; and organic production and sustainable horticulture
- o Expand marketing to increase student awareness of the opportunities in this program
- o Use the Farm and its facilities to increase community awareness and experiences, such as completing the Agricultural Literacy Trail
- o Add retail space

#### IMPLICATIONS FOR FACILITIES

- o Develop and implement plans to replace, repurpose, and/or modernize the Farm's land use, facilities, and infrastructure to support its use as a state-of-the-art teaching laboratory

#### LABOR MARKET DATA: ORNAMENTAL HORTICULTURE

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	25,135	25,895	3%	2,601	520	\$29.35	HS diploma or equivalent
39-9032	Recreation Workers	23,519	26,476	13%	5,308	1,062	\$12.13	HS diploma or equivalent
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	8,491	8,658	2%	1,072	214	\$18.17	HS diploma or equivalent
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	5,246	5,436	4%	863	173	\$27.22	HS diploma or equivalent
11-9013	Farmers, Ranchers, and Other Agricultural Managers	2,672	1,775	(34%)	193	39	\$19.82	HS diploma or equivalent
47-4051	Highway Maintenance Workers	1,624	1,813	12%	427	85	\$22.05	HS diploma or equivalent

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

## INSTRUCTIONAL PROGRAMS ORNAMENTAL HORTICULTURE (cont.)

### LABOR MARKET DATA: ORNAMENTAL HORTICULTURE (CONT.)

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	1,310	1,379	5%	197	39	\$16.02	HS diploma or equivalent
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	715	614	(14%)	91	18	\$21.53	HS diploma or equivalent
49-3041	Farm Equipment Mechanics and Service Technicians	391	403	3%	73	15	\$20.77	HS diploma or equivalent

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties



# INSTRUCTIONAL PROGRAMS

## PARALEGAL

The **Paralegal** program prepares students for employment as paralegals or legal assistants in both private and public sectors. Paralegals are employed or retained by a lawyer, law office, governmental agency, or other entity in a capacity or function, which involves the performance, under the direction and supervision of an attorney, of specifically delegated substantive legal work. This curriculum and program practices are routinely reviewed and approved by the American Bar Association.

### SCOPE OF COURSE WORK

- o 22 degree-applicable courses
- o On-campus lecture

### COURSES FULFILL

- o Requirements for an associate degree in Paralegal/Legal Assistant

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Two additional sections of Paralegal courses were offered in fall 2015 to meet the College's increased student enrollment. In that same semester, enrollment decreased almost 32 percent and the average enrollment in each section decreased a little over 40 percent.
- o **Productivity:** In both semesters, the fill rates at census were near capacity. The amount of FTES earned by Paralegal courses decreased proportionately to the decrease in enrollment.
- o **Student retention and success:** The student retention rates in Paralegal courses declined slightly in fall 2015 compared to fall 2012. The Mt. SAC average successful course completion

rate for Paralegal courses in fall 2015 was comparable to the statewide average for the same discipline.

### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in various occupations related to Paralegal are projected to increase in number. Students interested in this field may also earn associate degrees, which make them competitive applicants for occupations such as legal secretaries and court reporters.

Students who are already employed may use Paralegal courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 27 students in this category who completed Paralegal courses at Mt. SAC, the median increase in their earnings was 5.0 percent.

### PROJECTED GROWTH FOR PARALEGAL: SLOWER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. During the period that College-wide enrollment increased between 2012–2015, the enrollment in Paralegal courses decreased. It is likely that this decline was due to the inversion relationship between the job market and enrollment in career technical education courses. Current labor market projections indicate that students will have opportunities for employment. While the Paralegal program is likely

### DATA

Paralegal (PLGL)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	562	383	-31.9%
Number of Sections	14	16	14.3%
Average Enrollment per Section	40.1	23.9	-40.4%
<b>Productivity</b>			
Fill Rate at Census	115.5%	90.8%	-21.4%
Discipline FTES	59.0	40.2	-31.9%
Discipline FTEF	2.8	3	7.1%
<b>Student Retention and Success</b>			
Retention Rate	89.3%	87.1%	-2.5%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Paralegal	87.1%	73%	72%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### PARALEGAL (cont.)

to increase in enrollment over the next decade, it is unlikely to grow at the same rate as the overall College-wide enrollment.

#### CHALLENGES AND OPPORTUNITIES

- o Develop partnerships with law firms or legal clinics to provide students with internship opportunities to support student acquisition of workplace skills
- o Offer online sections

#### IMPLICATIONS FOR FACILITIES

- o Facilities needs will be met by the Business and Computer Technology Complex scheduled to open in 2017

#### LABOR MARKET DATA: PARALEGAL

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
43-6012	Legal Secretaries	15,445	15,603	1%	1,171	234	\$23.68	HS diploma or equivalent
23-2011	Paralegals and Legal Assistants	14,612	15,701	7%	2,783	557	\$26.42	Associate
23-2099	Legal Support Workers, All Other	3,812	3,893	2%	525	105	\$24.11	HS diploma or equivalent
23-2093	Title Examiners, Abstractors, and Searchers	3,495	3,542	1%	476	95	\$23.59	HS diploma or equivalent
23-2091	Court Reporters	1,338	1,301	(3%)	168	34	\$30.26	Postsecondary non-degree award

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

# INSTRUCTIONAL PROGRAMS

## PHILOSOPHY

**Philosophy** introduces students to the study of the fundamental nature of knowledge, reality, and values. The program explores the sources and limits of knowledge and the nature of reality, self, truth, ethics, religion, science, language, beauty, political theory, and mind.

### SCOPE OF COURSE WORK

- o 16 degree-applicable courses
- o On-campus lecture, online lecture, hybrid

### COURSES FULFILL

- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in Humanities
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Transfer requirements for Philosophy majors

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Twelve fewer sections of Philosophy courses offered in fall 2015 compared to fall 2012. The total enrollment in Philosophy courses as well as the average enrollment per section decreased.
- o **Productivity:** The fill rate at census in fall 2015 was lower than the fill rate at census in fall 2012. The amount of FTES earned by Philosophy courses decreased proportionately to the decrease in enrollment.
- o **Student retention and success:** The student retention rates in Philosophy courses increased between 2012 and 2015. The Mt. SAC average successful course completion

rate for Philosophy courses in fall 2015 was above the statewide average for the same discipline.

### PROJECTED GROWTH FOR PHILOSOPHY: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the level of enrollment reached in 2012, the Philosophy program has the potential to keep pace with the College's overall growth.

### CHALLENGES AND OPPORTUNITIES

- o Promote the associate degree for transfer in Philosophy once approved by the Chancellor's Office
- o Assess the feasibility of increasing the level of English required for Philosophy courses

### IMPLICATIONS FOR FACILITIES

- o Add or remodel classrooms to include
  - Flexible seating arrangements to promote interaction
  - Smart technology for presentations
  - Support for student devices
- o Add classrooms
- o Add offices

### DATA

Philosophy (PHIL)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	2,011	1,547	-23.1%
Number of Sections	62	50	-19.4%
Average Enrollment per Section	32.4	30.9	-4.6%
<b>Productivity</b>			
Fill Rate at Census	96.2%	89.4%	-7.1%
Discipline FTES	205.6	157.9	-23.2%
Discipline FTEF	12.2	10	-18.0%
<b>Student Retention and Success</b>			
Retention Rate	84.4%	86.0%	1.9%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Philosophy	86.0%	66%	61%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

INSTRUCTIONAL PROGRAMS

# PHOTOGRAPHY

**Photography** prepares students for employment in a variety of careers in the changing field of photography and imaging.

**SCOPE OF COURSE WORK**

- o 18 degree-applicable courses
- o On-campus lecture, on-campus laboratory

**COURSES FULFILL**

- o Requirements for certificates of achievement (>18 units) in
  - Photography—Level I
  - Photography—Level II
  - Photography—Digital Technician
  - Photography Video Production
  - Graphic Design
- o Requirements for associate degrees in Liberal Arts and Sciences with an emphasis in
  - Communication
  - Fine Arts
- o Requirements for an associate degree for transfer in History
- o Requirements for an associate degree in Photography
- o Requirements for an associate degree in Television Production
- o General education breadth requirements for associate degrees and transfer to CSU

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Ten sections of Photography courses were added in fall 2015 compared to fall 2012. Enrollment increased 34.4% percent. The average enrollment per section was comparable in the two semesters, demonstrating that the additional sections met the increase in students’ needs.

- o **Productivity:** Although the fill rate at census was lower in 2015 compared to 2012, FTES increased due to the increase in total enrollment.
- o **Student retention and success:** Student retention rates in Photography courses increased slightly between 2012–2015. However, the Mt. SAC average successful course completion rate for Photography courses in fall 2015 was lower than the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

It is difficult to standardize labor market data for creative arts because many of the employment opportunities are self-employment or freelance. According to the *2017 Otis Report of the Creative Economy*, the Los Angeles metropolitan area was home to the second largest number of creative workers, with more than 429,400 wage and salary workers in the creative industries. Between 2009–2014, the number of self-employed workers in the creative arts in Los Angeles and Orange counties increased at an annual average rate of 4.1 percent (31,641 firms in total), which is slightly higher than the region’s 3.1 percent increase across all industries. (Source: otis.edu)

Over the next five years jobs in various occupations related to Photography are projected to increase in number. Advanced positions in the fine arts may require a bachelor’s degree, and courses in Photography at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn certificates of achievement and associate degrees, which make them competitive applicants for related occupations.

**DATA**

Photography (PHOT)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	410	551	34.4%
Number of Sections	19	29	52.6%
Average Enrollment per Section	21.6	19	-12.0%
<b>Productivity</b>			
Fill Rate at Census	114.6%	108.5%	-5.4%
Discipline FTES	66.7	89	33.3%
Discipline FTEF	5.6	6.7	20.5%
<b>Student Retention and Success</b>			
Retention Rate	84.8%	86.2%	1.9%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Photography	86.2%	60%	71%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS PHOTOGRAPHY (cont.)

Students who are already employed may use Photography courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 13 students in this category who completed Mt. SAC Photography courses, the median increase in their earnings was 72.7 percent.

### PROJECTED GROWTH FOR PHOTOGRAPHY: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Given the enrollment trends for Photography and the labor market projections for increased job opportunities, this program is likely to keep pace with the College's projected growth rate.

### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to improve students' successful course completion rates, such as equity tutoring
- o Add courses and certificates to address technological innovations, such as the convergence of still and video techniques and unmanned aerial vehicles/unmanned aircraft systems, photogrammetry
- o Collaborate with other disciplines, such as Aeronautics, Agriculture, Real Estate, and Business Management to develop programs, courses, and certificates that mirror contemporary uses of imaging technologies

- o Create student internship opportunities to support student acquisition of business management skills

### IMPLICATIONS FOR FACILITIES

- o Add or remodel facilities to offer instruction in unmanned aerial vehicles/unmanned aircraft systems to include:
  - A large classroom and innovative laboratory space
  - Makerspace to support the unmanned aerial vehicle/unmanned aerial vehicle systems
  - Outdoor netted facility for unmanned aerial vehicles/unmanned aircraft systems to be shared with other programs such as Aeronautics, Aircraft Maintenance Technology, and Graphic Design and Illustration
- o Add a studio laboratory to be shared across the commercial and entertainment arts that supports group work, including flat screens for animation critiques, digital pads/pens, and large monitors
- o Add a photography studio laboratory
- o Add storage

### LABOR MARKET DATA: PHOTOGRAPHY

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
27-4021	Photographers	10,842	12,024	11%	2,746	549	\$18.81	HS diploma or equivalent

### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

## INSTRUCTIONAL PROGRAMS

# PHYSICS AND PHYSICAL SCIENCE

**Physics** is the study of how the physical world works and why materials and objects behave the way they do. It includes the underlying principles and laws of nature and the application of those principles and laws to make estimations and predictions.

**Physical Science**, the study of nature and properties of energy and nonliving matter, is an interdisciplinary field that includes physics, chemistry, astronomy, and earth science.

### SCOPE OF COURSE WORK

- o Physics: Nine degree-applicable courses
- o Physical Science: Two degree-applicable courses
- o On-campus lecture, on-campus laboratory

### COURSES FULFILL

- o Requirements for associate degrees in Liberal Arts and Sciences with an emphasis in
  - Kinesiology and Wellness
  - Mathematics
  - Natural Sciences
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Transfer requirements for Physics majors

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** An additional section was offered in fall 2015 compared to the offerings in fall 2012 for this discipline. However, enrollment declined by a little over eight percent between these two semesters.

- o **Productivity:** The fill rate in Physics and Physical Sciences courses at census was lower in 2015 compared to 2012, although the amount of FTES increased slightly between 2012 and 2015.
- o **Student retention and success:** Student retention rates in Physics and Physical Science courses increased between 2012–2015. However, the Mt. SAC average successful course completion rates for both Physics and the general Physical Science courses in fall 2015 were below the statewide average for the same disciplines.

### PROJECTED GROWTH FOR PHYSICS AND PHYSICAL SCIENCE: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Although enrollment in Physics and Physical Science did not increase proportionate to the College-wide increase in enrollment from 2012 and 2015, these disciplines are projected to grow at the same pace as the College-wide growth rate because the courses provide students with requirements that fulfill general education breadth requirements.

### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to improve students' successful course completion rates, such as standardized test questions and expanding student access to STEM coaching
- o Evaluate the effectiveness of the Mathematics prerequisites in increasing students' successful course completion rates

### DATA

Physics (PHSC, PHYS)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	655	600	-8.4%
Number of Sections	22	23	4.5%
Average Enrollment per Section	29.8	26.1	-12.4%
<b>Productivity</b>			
Fill Rate at Census	115.9%	107.5%	-7.2%
Discipline FTES	127.0	134.4	5.8%
Discipline FTEF	7.9	9.9	24.9%
<b>Student Retention and Success</b>			
Retention Rate	79.1%	80.3%	1.6%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC Physical Science and Physics combined	Mt. SAC By Discipline	Statewide By Discipline
Physical Science	80.3%	62%	69%
Physics	80.3%	61%	72%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### PHYSICS AND PHYSICAL SCIENCE (cont.)

- Evaluate transfer agreements contingent on changes in the CSU system
- Add an associate degree for transfer in Physics
- Develop a calculus-based physics course for non-engineers
- Establish an online platform for course materials and homework assignments

#### IMPLICATIONS FOR FACILITIES

- Add three Physics laboratories in Building 16 that include
  - A laboratory prep room
  - Offices
  - Storage



INSTRUCTIONAL PROGRAMS

# POLITICAL SCIENCE

**Political Science** introduces students to the theories and methodology used in the scientific study of political institutions and behavior.

**SCOPE OF COURSE WORK**

- o Ten degree-applicable courses
- o On-campus lecture

**COURSES FULFILL**

- o Requirements for an associate degree for transfer in Political Science
- o Requirements for an associate degree for transfer in Environmental Studies
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Humanities
  - Social and Behavioral Sciences
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Transfer requirements for Political Science majors

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Eight additional sections of Political Science were offered in fall 2015 to meet the increased student enrollment. Although the total enrollment increased 14.5 percent, the average enrollment per section decreased slightly between fall 2012 and fall 2015.
- o **Productivity:** While the overall fill rates at census were comparable in both semesters in this snapshot, the amount of FTES increased proportionately to the increase in enrollment.

- o **Student retention and success:** The student retention rates in Political Science courses were the same in fall 2012 and fall 2015. The Mt. SAC average successful course completion rate for Political Science courses in fall 2015 was comparable to the statewide average for the same discipline.

**PROJECTED GROWTH FOR POLITICAL SCIENCE: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data, Political Science is projected to keep pace with the College’s overall growth.

**CHALLENGES AND OPPORTUNITIES**

- o Expand curriculum to include a methods course and a Latino Political Science course
- o Develop an online Political Science course
- o Incorporate social justice issues throughout the curriculum

**IMPLICATIONS FOR FACILITIES**

- o Add or remodel classrooms to allow greater flexibility in seating arrangements and to promote interaction

**DATA**

Political Science (POLI)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	1,452	1,663	14.5%
Number of Sections	35	43	22.9%
Average Enrollment per Section	41.5	38.7	-6.8%
<b>Productivity</b>			
Fill Rate at Census	104.2%	97.7%	-6.2%
Discipline FTES	152.3	173.7	14.0%
Discipline FTEF	7	8.6	22.9%
<b>Student Retention and Success</b>			
Retention Rate	85.3%	85.4%	0.0%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Political Science	85.4%	64%	65%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

INSTRUCTIONAL PROGRAMS

# PSYCHIATRIC TECHNICIAN

The **Psychiatric Technician** program prepares students for entry-level practice as psychiatric technicians. Working under the supervision of psychiatrists, registered psychiatric nurses, psychologists, and nurse practitioners, psychiatric technicians provide hands-on care to people with mental illnesses or developmental disabilities. This program prepares student for the California State Licensure Examination of Psychiatric Technicians.

**SCOPE OF COURSE WORK**

- o 12 degree-applicable courses
- o On-campus lecture, on-campus laboratory, and off-campus clinical practice

**COURSES FULFILL**

- o Requirements for certificates of achievement (>18 units) in Psychiatric Technician
- o Requirements for associate degrees in Psychiatric Technician
- o General education breadth requirements for transfer to CSU

**EXTERNAL ACCREDITATION**

- o Board of Vocational Nurses and Psychiatric Technicians

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** The same numbers of sections were offered in fall 2012 and fall 2015. Enrollment declined slightly as did the average enrollment per section.
- o **Productivity:** In both semesters, the fill rates at census were near capacity. The amount of FTES earned by Psychiatric Technician courses decreased slightly over the two semesters.

- o **Student retention and success:** Student retention rates in Psychiatric Technician courses were over 92 percent in both 2012 and 2015. The Mt. SAC average successful course completion rate for Psychiatric Technician courses in fall 2015 was below the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs in various occupations related to Psychiatric Technician are projected to increase in number. Some positions in this field require an advanced degree, and courses in Psychiatric Technician at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may earn certificates of achievement and associate degrees, which make them competitive applicants for occupations such as psychiatric technicians, psychiatric aides, and community health workers.

Students who are already employed may use Psychiatric Technician courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 25 students in this category who completed Psychiatric Technician courses at Mt. SAC, the median increase in their earnings was 54.2 percent.

**DATA**

Psychiatric Technician (MENT)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	293	287	-2.0%
Number of Sections	18	18	0.0%
Average Enrollment per Section	16.3	15.9	-2.0%
<b>Productivity</b>			
Fill Rate at Census	95.6 %	97.9%	2.5%
Discipline FTES	96.2	95.4	-0.9%
Discipline FTEF	11.1	11.7	5.3%
<b>Student Retention and Success</b>			
Retention Rate	97.3%	97.1%	-0.7%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Psychiatric Technician	97.1%	85%	93%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### PSYCHIATRIC TECHNICIAN (cont.)

#### PROJECTED GROWTH FOR PSYCHIATRIC TECHNICIAN: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. The labor market data projects that although a surge in the job opportunities for Psychiatric Technicians is unlikely, the numbers of trained workers in related occupations is likely to increase. Based on the stability of the enrollment trends and the labor market data, Psychiatric Technician is projected to keep pace with the College's overall growth.

#### CHALLENGES AND OPPORTUNITIES

- Revise curriculum to reflect the shift from institutional-based services to community-based services
- Expand the types of off-campus clinical settings to expose students to a greater variety of disorders

#### IMPLICATIONS FOR FACILITIES

- Build mental health simulation laboratory using virtual reality to simulate mental health conditions
- Develop a private outdoor space for assault response training

#### LABOR MARKET DATA: PSYCHIATRIC TECHNICIAN

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
21-1093	Social and Human Service Assistants	21,835	26,336	21%	6,952	1,390	\$18.69	HS diploma or equivalent
21-1099	Community and Social Service Specialists, All Other	5,149	5,900	15%	1,312	262	\$25.55	Master's
29-2053	Psychiatric Technicians	3,030	3,074	1%	231	46	\$28.25	Postsecondary non-degree award
21-1094	Community Health Workers	2,148	2,561	19%	654	131	\$19.51	HS diploma or equivalent
31-1013	Psychiatric Aides	1,644	1,784	9%	340	68	\$13.64	HS diploma or equivalent

#### NOTE

- Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

# INSTRUCTIONAL PROGRAMS

# PSYCHOLOGY

**Psychology** introduces students to the principles and methodologies used in the scientific study of mental processes and behaviors. The program prepares students to identify research and statistical methods appropriate to psychology, compare and contrast the major theoretical perspectives in psychology, and synthesize the relationships between biological and behavioral functions.

#### SCOPE OF COURSE WORK

- o 14 degree-applicable courses
- o On-campus lecture, on-campus laboratory, online lecture

#### COURSES FULFILL

- o Requirements for an associate degree for transfer in Psychology
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Kinesiology and Wellness
  - Social and Behavioral Sciences
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Transfer requirements for Psychology majors

#### DATA ANALYSIS/SUMMARY

- o **Enrollment:** The numbers of sections of Psychology courses were increased more than 60 percent between fall 2012 and fall 2015 to meet the College's increased student enrollment. Although the average enrollment per section decreased, total enrollment increased almost 34 percent.

- o **Productivity:** In both semesters, the fill rates at census were above or near capacity. The amount of FTES earned by Psychology courses increased proportionately to the increase in enrollment.
- o **Student retention and success:** The student retention rates in Psychology were comparable in 2012 and 2015. The Mt. SAC average successful course completion rate for Psychology courses in fall 2015 was slightly above the statewide average for the same discipline.

#### PROJECTED GROWTH FOR PSYCHOLOGY: FASTER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the recent enrollment data, Psychology is projected to grow faster than the College's growth rate.

#### CHALLENGES AND OPPORTUNITIES

- o Expand the use of psychological studies research projects

#### IMPLICATIONS FOR FACILITIES

- o Add social sciences laboratory for teaching research methods and conducting experiments to be shared with Sociology

#### DATA

Psychology (PSYC)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	2,320	3,101	33.7%
Number of Sections	54	88	63.0%
Average Enrollment per Section	43.0	35.2	-18.0%
<b>Productivity</b>			
Fill Rate at Census	105.7%	97.9%	-7.4%
Discipline FTES	257.1	348.3	35.5%
Discipline FTEF	11.6	19.2	65.5%
<b>Student Retention and Success</b>			
Retention Rate	92.0%	90.8%	-1.3%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Psychology	90.8%	71%	68%

#### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

# INSTRUCTIONAL PROGRAMS

## RADIO

The **Radio** curriculum prepares students for a variety of entry-level jobs in both the non-performance and performance areas of the broadcasting and related industries.

### SCOPE OF COURSE WORK

- o 37 degree-applicable courses (shared with Television)
- o On-campus lecture, on-campus laboratory courses

### COURSES FULFILL

- o Requirements for a certificate of achievement (>18 units) in
  - Radio Broadcasting: Behind the Scenes
  - Radio Broadcasting: On the Air
  - Social Media and Broadcasting
- o Requirements for an associate degree in
  - Radio Broadcasting: Behind the Scenes
  - Radio Broadcasting: On the Air
- o General education breadth requirements for associate degrees

### DATA ANALYSIS/SUMMARY: SHARED RADIO-TELEVISION COURSE

Since the course R-TV 01 Introduction to Electronic Media is shared between Radio and Television, data for this course are included in both program descriptions.

- o **Enrollment:** Enrollment decreased almost 11 percent between 2012–2015 even though three sections were offered each semester. The average enrollment per section also decreased 11 percent.
- o **Productivity:** As a result of the decrease in enrollment, the fill rate at census and the

amount of FTES earned by this discipline was lower in 2015 compared to 2012.

- o **Student retention and success:** The student retention rate decreased slightly between 2012 and 2015.

### DATA ANALYSIS/SUMMARY: RADIO

- o **Enrollment:** Enrollment in Radio courses increased almost 12 percent between 2012 and 2015. Four additional sections were offered in fall 2015 compared to fall 2012. However, the addition of these sections had the effect of decreasing the average enrollment per section. A possible explanation for this decline in the average enrollment per section is that during this period a new radio station was being constructed and the former radio station was in a state of disrepair.
- o **Productivity:** The impact of the reduction in enrollment per section is also seen in the reduction of the fill rate at census in these two semesters. The positive impact of increasing the number of sections offered is seen in the slight increase in the amount of FTES earned by this discipline.
- o **Student retention and success:** The student retention rates in Radio courses were comparable in fall 2015 and fall 2015. Statewide successful course completion rates are not available for Radio as a stand-alone discipline. The Mt. SAC average successful course completion rate for Radio and Television courses was comparable to the statewide average for the same discipline.

### DATA

Shared Radio and Television course (R-TV 01)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	103	92	-10.7%
Number of Sections	3	3	0.0%
Average Enrollment per Section	34.3	30.7	-10.7%
<b>Productivity</b>			
Fill Rate at Census	98.1%	90.1%	-8.2%
Discipline FTES	10.81	9.65	-10.7%
Discipline FTEF	0.6	0.6	0.0%
<b>Student Retention and Success</b>			
Retention Rate	93.2%	89.8%	-3.7%

Radio courses (R-TV 02, 03, 04, 05, 06, 07A, 09, 10, 11A, 11B, 15, 17, 31, 32, 35, 96A, 96B, 96C, 97A, 97B)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	135	151	11.9%
Number of Sections	5	9	80.0%
Average Enrollment per Section	27.0	16.8	-37.9%
<b>Productivity</b>			
Fill Rate at Census	108.5%	83.6%	-23.0%
Discipline FTES	13.5	15.1	12.0%
Discipline FTEF	0.9	1.2	40.2%
<b>Student Retention and Success</b>			
Retention Rate	91.1%	93.0%	2.1%

## INSTRUCTIONAL PROGRAMS

### RADIO (cont.)

#### LABOR MARKET DATA ANALYSIS

A surge in digital entertainment from new online shows on Amazon, YouTube and other new media outlets has increased employment in Hollywood. The 2017 *Otis Report on the Creative Economy* forecasts an increase in entertainment jobs in Los Angeles County from 2011–2018. (Source: *otis.edu*)

Over the next five years jobs in various occupations related to Radio are projected to increase in number. Positions such as radio announcers and news analysts typically require a bachelor's degree, and courses in Radio at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn certificates of achievement and associate degrees, which make them competitive applicants for related occupations. Students currently employed in the field may take Mt. SAC Radio courses to advance in their current positions.

#### PROJECTED GROWTH FOR RADIO: SLOWER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. The labor market trends in this field are promising, but a bachelor's degree is the typical requirement for entry-level employment. Given the enrollment trends for Radio, this program's enrollment may grow over the next decade, but it is unlikely to grow at the same rate as the overall College-wide enrollment.

#### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to increase the visibility of the radio station

#### IMPLICATIONS FOR FACILITIES

- o Install low power FM repeaters and other technology to strengthen the signal resulting from the current poor location of the transmitter
- o Add a large, visible radio station sign in Building 13 adjacent to the station
- o Add radio booth and equipment in the new stadium and gymnasium to broadcast sporting and other events

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC Radio	Mt. SAC Radio and Television	Statewide Radio and Television
Radio	93%	78%	76%

#### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

#### LABOR MARKET DATA: RADIO

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
27-3011	Radio and Television Announcers	2,020	2,053	2%	375	75	\$20.06	Bachelor's
27-3021	Broadcast News Analysts	434	461	6%	100	20	\$31.86	Bachelor's

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# RADIOLOGIC TECHNOLOGY

The **Radiologic Technology** program prepares students for entry-level positions as radiographers in hospitals and health care facilities. Radiographers use medical imaging equipment to assist in the diagnosis of disease. The curriculum prepares students for the American Registry of Radiologic Technologists examination leading to licensure as a radiologic technologist.

**SCOPE OF COURSE WORK**

- o 21 degree-applicable courses
- o On-campus lecture, on-campus lab, off-campus clinical practice

**COURSES FULFILL**

- o Requirements for a certificate of achievement (>18 units) in Mammography and Computed Tomography
- o Requirements for an associate degree in Radiologic Technology

**EXTERNAL ACCREDITATION**

- o Joint Review Committee on Education in Radiologic Technology

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Although the number of sections in Radiologic Technology remained the same, enrollment increased in fall 2015 compared to fall 2012 as did the average enrollment per section.
- o **Productivity:** The fill rate at census increased significantly between 2012–2015, reaching 90% capacity in fall 2015. FTES earned by Radiologic Technology increased almost eight percent between 2012–2015.

- o **Student retention and success:** The student retention rate in Radiologic Technology was an impressive 91 percent in 2012 and increased to an even more impressive 100 percent in 2015. Mt. SAC’s average successful course completion rate for Radiologic Technology courses in fall 2015 was higher than the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs for radiologic technologists are projected to increase. Students interested in this field may earn associate degrees, which are required for work in this occupation. Students currently employed in the field may take Mt. SAC Radiologic Technology courses to advance in their current positions by earning certificates of achievement in specializations such as Mammography and Computed Tomography.

**PROJECTED GROWTH FOR RADIOLOGIC TECHNOLOGY: SLOWER THAN COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data and the labor market projections for increased employment opportunities, Radiologic Technology has the potential to keep pace with the College’s overall growth. However, the growth of this program is constrained by the limited number of off-campus clinical sites. Given this limit, this program is projected to continue to thrive with approximately the same number of students.

**DATA**

<b>Radiologic Technology (RAD)</b>	<b>Fall 2012</b>	<b>Fall 2015</b>	<b>% Change</b>
<b>Enrollment</b>			
Enrollment	202	229	13.4%
Number of Sections	11	11	0.0%
Average Enrollment per Section	18.4	20.8	13.4%
<b>Productivity</b>			
Fill Rate at Census	80.6%	90.8%	12.7%
Discipline FTES	52.4	56.5	7.7%
Discipline FTEF	3.7	3.6	-3.2%
<b>Student Retention and Success</b>			
Retention Rate	91.1%	100.0%	9.7%

<b>Discipline</b>	<b>Retention Fall 2015</b>	<b>Successful Course Completion Rate Fall 2015</b>	
	Mt. SAC	Mt. SAC	Statewide
Radiologic Technology	100.0%	98%	92%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

INSTRUCTIONAL PROGRAMS  
**RADIOLOGIC TECHNOLOGY (cont.)**

CHALLENGES AND OPPORTUNITIES

- o Ensure that on-campus equipment matches the equipment students use in clinical sites

IMPLICATIONS FOR FACILITIES

- o Add equipment for Computed Tomography and Mammography
- o Add a computer classroom to be shared among the Health Sciences programs
- o Add a learning center and space for student study groups

LABOR MARKET DATA: RADIOLOGIC TECHNOLOGY

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
29-2034	Radiologic Technologists	7,279	8,114	11%	1,581	316	\$33.01	Bachelor's

NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

# INSTRUCTIONAL PROGRAMS

## REAL ESTATE

The **Real Estate** program prepares students for the Real Estate Broker License exam and subsequent employment in a real estate career. The curriculum, which is statutorily driven, includes topics such as real estate principles, practices, finance, economics, taxes, mortgages, escrow, appraisal, property management, and investment planning.

### SCOPE OF COURSE WORK

- o 12 degree-applicable courses
- o On-campus lecture, online, hybrid

### COURSES FULFILL

- o Requirements for a skills certificate (<18 units) in Real Estate Sales
- o Requirements for a certificate of achievement (> 18 units) in Real Estate Broker
- o Requirements for an associate degree in Real Estate

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** All measures of Real Estate enrollment decreased: the total enrollment, the number of sections offered, and the average enrollment per section.
- o **Productivity:** Due to the decrease in enrollment, the fill rate at census and the amount of FTES earned by the Real Estate program decreased.
- o **Student retention and success:** The student retention rates in Real Estate courses were the same in fall 2012 and fall 2015. Similarly, the Mt. SAC average successful course completion rate for Real Estate courses in fall 2015 matched the statewide average for the same discipline.

### LABOR MARKET DATA ANALYSIS

Over the next five years jobs in various occupations related to Real Estate are projected to increase in number. Positions as an appraiser or assessor typically require a bachelor's degree, and courses in Real Estate at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for related occupations such as real estate sales agents or brokers and property managers.

Students who are already employed use Real Estate courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 47 students in this category who completed Real Estate courses at Mt. SAC, the median increase in their earnings was 11.5 percent.

### PROJECTED GROWTH FOR REAL ESTATE: SLOWER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. During the period that College-wide enrollment increased between 2012–2015, the enrollment in Real Estate courses decreased no doubt due to a corresponding decline in the real estate market. The housing market is now recovering and the labor market projections indicate that students will continue to have opportunities for employment in this field.

### DATA

Real Estate (BUSR)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	453	379	-16.3%
Number of Sections	13	12	-7.7%
Average Enrollment per Section	34.9	31.6	-9.4%
<b>Productivity</b>			
Fill Rate at Census	91.6	85.1	-7.1%
Discipline FTES	47.3	39.2	-17.1%
Discipline FTEF	2.4	2.4	0.0%
<b>Student Retention and Success</b>			
Retention Rate	85.9	85.9	0.0%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Real Estate	85.9%	69%	69%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### REAL ESTATE (cont.)

While the Real Estate program is likely to increase in enrollment over the next decade, it is unlikely to grow at the same rate as the overall College-wide rate.

#### CHALLENGES AND OPPORTUNITIES

- o Develop marketing plans to promote the value of the Real Estate courses

#### IMPLICATIONS FOR FACILITIES

- o Facilities needs will be met by the Business and Computer Technology Complex scheduled to open in 2017

#### LABOR MARKET DATA: REAL ESTATE

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
41-9022	Real Estate Sales Agents	28,570	28,904	1%	2,075	415	\$19.64	HS diploma or equivalent
11-9141	Property, Real Estate, and Community Association Managers	20,628	21,882	6%	3,345	669	\$25.76	HS diploma or equivalent
41-9021	Real Estate Brokers	8,748	8,843	1%	624	125	\$25.34	HS diploma or equivalent
13-2021	Appraisers and Assessors of Real Estate	4,733	4,925	4%	691	138	\$28.80	Bachelor's

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# REGISTERED VETERINARY TECHNOLOGY

The **Registered Veterinary Technology** program prepares students for a career as a veterinary technician. The curriculum includes the care and handling of all species of animals and the basic principles of normal and abnormal life processes as well as procedures for the examination, diagnosis, and care of animals. Courses include practice in clinical procedures under the supervision of a licensed veterinarian. Successful completion of the associate degree in Registered Veterinary Technology is required to take the Veterinary Technician National Examination and the California Registered Veterinary Technician Examination.

This program is supported by the Farm, a 110-acre living laboratory that is collaboratively shared by all specializations in the Agricultural Sciences Department and provides students with unique hands-on experiences in the production, care, and marketing of farm animals and plants.

**SCOPE OF COURSE WORK**

- o 12 degree-applicable courses
- o On-campus lecture, on-campus laboratory

**COURSES FULFILL**

- o Requirements for an associate degree in Registered Veterinary Technology

**EXTERNAL ACCREDITATION**

- o American Veterinary Medical Association

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Two sections of Registered Veterinary Technology were added in fall 2015 compared to fall 2012. Enrollment increased

by 17.3 percent while the average enrollment per section remained the same.

- o **Productivity:** The fill rates at census were above capacity in both 2012 and 2015. The amount of FTES earned in Registered Veterinary Technology courses increased almost 13 percent.
- o **Student retention and success:** The student retention rates in Registered Veterinary Technology courses were strong in both 2012 and 2015. The Mt. SAC average successful course completion rate for Registered Veterinary Technology courses in fall 2015 was slightly below the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs for Registered Veterinary Technicians are projected to increase in number. Students interested in this field may earn an associate degree, which is required for work in this occupation.

Students who are already employed may use Registered Veterinary Technology courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013 – 2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 20 students in this category who completed Registered Veterinary Technology courses at Mt. SAC, the median increase in their earnings was 84.4 percent.

**DATA**

Registered Veterinary Technology (AGHE)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	364	427	17.3%
Number of Sections	12	14	16.7%
Average Enrollment per Section	30.3	30.5	0.6%
<b>Productivity</b>			
Fill Rate at Census	121.2%	136.8%	12.9%
Discipline FTES	61.8	68.9	11.4%
Discipline FTEF	3.8	4.4	16.0%
<b>Student Retention and Success</b>			
Retention Rate	92.5%	92.1%	-0.5%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Registered Veterinary Technology	92.1%	73%	75%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

INSTRUCTIONAL PROGRAMS  
**REGISTERED VETERINARY TECHNOLOGY**  
*(cont.)*

**PROJECTED GROWTH FOR REGISTERED VETERINARY TECHNOLOGY: FASTER THAN COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the positive enrollment trends and labor market projections for increased employment opportunities, Registered Veterinary Technology is projected to exceed the College’s projected overall growth rate.

Program growth will be restricted by the numbers and types of animals housed on the Farm. Animal contact hours limit the amount and type of students-to-animal contact in training facilities.

**CHALLENGES AND OPPORTUNITIES**

- o Evaluate the potential of developing a veterinary assistant certificate

**IMPLICATIONS FOR FACILITIES**

- o Develop and implement plans to replace, repurpose, and/or modernize the Farm’s land use, facilities, and infrastructure to support its use as a state-of-the-art teaching laboratory

**LABOR MARKET DATA: REGISTERED VETERINARY TECHNOLOGY**

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
29-2056	Veterinary Technologists and Technicians	3,271	4,120	26%	1,046	209	\$17.39	Associate

**NOTE**

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# RESPIRATORY THERAPY

The **Respiratory Therapy** program prepares students for advanced-level practice as respiratory therapists. A respiratory therapist, under the direction of a physician, treats a patient’s diseased or ineffective respiratory system by applying medical gases under pressure and other therapies to improve breathing. The program prepares students to take the credentialing examination administered by the National Board for Respiratory Care.

**SCOPE OF COURSE WORK**

- o 16 degree-applicable courses
- o On-campus lecture, on-campus lab, and off-campus clinical practice

**COURSES FULFILL**

- o Requirements for an associate degree in Respiratory Therapy

**EXTERNAL ACCREDITATION**

- o Committee on Accreditation for Respiratory Care

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Enrollment in Respiratory Therapy courses increased in fall 2015 compared to fall 2012 while the number of sections remained the same.
- o **Productivity:** The fill rate at census increased between 2012–2015, reaching almost 85% capacity in fall 2015. FTES earned by Respiratory Therapy increased a little over 12 percent between 2012 and 2015.
- o **Student retention and success:** Student retention rates in Respiratory Therapy courses were comparable in both semesters in this

snapshot. The successful course completion rate for students in Mt. SAC’s Respiratory Therapy courses in fall 2015 was below the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs for Respiratory Therapists are projected to increase in number. Students interested in this field may earn an associate degree, which is required for work in this occupation.

**PROJECTED GROWTH FOR RESPIRATORY THERAPY: SLOWER THAN COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data and the labor market projections for increased employment opportunities, Respiratory Therapy has the potential to keep pace with the College’s overall growth. However, the growth of this program is constrained by the number of off-campus clinical sites. Given this limit, this program is projected to continue to thrive with approximately the same number of students.

**CHALLENGES AND OPPORTUNITIES**

- o Expand clinical sites to increase student enrollment
- o Ensure that on-campus equipment matches the equipment that students use in clinical sites

**DATA**

Respiratory Therapy (RESD)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	177	192	8.5%
Number of Sections	9	9	0.0%
Average Enrollment per Section	19.7	21.3	8.4%
<b>Productivity</b>			
Fill Rate at Census	74.2%	84.9%	14.4%
Discipline FTES	32.8	36.8	12.4%
Discipline FTEF	4.6	4.0	-11.8%
<b>Student Retention and Success</b>			
Retention Rate	97.6%	97.9%	0.3%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Respiratory Therapy	97.9%	84%	91%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### RESPIRATORY THERAPY *(cont.)*

#### IMPLICATIONS FOR FACILITIES

- Update equipment and technology in the skills lab as well as in classrooms including
  - Smart boards
  - An audio system
  - Support for student devices at every seat
  - Compressed air service in the skills lab
- Add a dedicated health careers computerized testing room
- Add storage

#### LABOR MARKET DATA: RESPIRATORY THERAPY

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
29-1126	Respiratory Therapists	7,214	7,967	10%	1,665	333	\$35.86	Associate
29-2054	Respiratory Therapy Technicians	368	364	(1%)	28	6	\$35.73	Associate

#### NOTE

- Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

INSTRUCTIONAL PROGRAMS

# SIGN LANGUAGE AND INTERPRETING

**Sign Language and Interpreting** introduces students to American Sign Language and Deaf Culture and prepares students for entry-level employment as Sign Language Interpreters. Sign Language users and interpreters, with an understanding of the culture and community of Deaf individuals, communicate and interface with Deaf people in the community. School districts, colleges and universities, hospitals, government agencies and private businesses may employ sign language interpreters. Sign Language users also apply their knowledge to many different occupations.

**SCOPE OF COURSE WORK**

- o 16 degree-applicable courses
- o On-campus lecture, on-campus laboratory

**COURSES FULFILL**

- o Required preparation to apply for National Interpreting Certification through the Registry of Interpreters for the Deaf
- o Requirements for a certificate of achievement (> 18 units) in Sign Language/Interpreting
- o Requirements for an associate degree in Sign Language/Interpreting
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Transfer requirements for Sign Language majors

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Five additional sections of Sign Language and Interpreting courses were offered in fall 2015 compared to fall 2012

to meet the College’s increased student enrollment. Total enrollment increased while the average enrollment per section was stable.

- o **Productivity:** In both semesters, the fill rates at census were near capacity. The amount of FTES earned by Sign Language and Interpreting courses increased slightly more than the increase in enrollment.
- o **Student retention and success:** The student retention rates in Sign Language/Interpreting were comparable in 2012 and 2015. The Mt. SAC average successful course completion rate for Sign Language and Interpreting courses in fall 2015 was below the statewide average for the same discipline.

**LABOR MARKET DATA ANALYSIS**

Over the next five years jobs for interpreters and translators are projected to increase in number. These positions typically require a bachelor’s degree, and courses in Sign Language and Interpreting at Mt. SAC prepare students for successful transfer in this major.

Students who are already employed may take Sign Language and Interpreting courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 13 students in this category who completed Sign Language and Interpreting courses at Mt. SAC, the median increase in their earnings was 25.6 percent.

**DATA**

Sign Language and Interpreting (SIGN)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	771	900	16.7%
Number of Sections	28	33	17.9%
Average Enrollment per Section	27.5	27.3	-1.0%
<b>Productivity</b>			
Fill Rate at Census	97.6%	94.1%	-3.6%
Discipline FTES	98.9	119.4	20.8%
Discipline FTEF	6.3	8.1	29.9%
<b>Student Retention and Success</b>			
Retention Rate	90.1%	90.6%	0.5%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Sign Language and Interpreting	90.6%	66%	74%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

# SIGN LANGUAGE AND INTERPRETING

(cont.)

### PROJECTED GROWTH FOR SIGN LANGUAGE AND INTERPRETING: FASTER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the recent enrollment data and the labor market projections of increased job opportunities in this field, Sign Language and Interpreting is projected to grow faster than the College's growth rate.

- o Locate Language Learning Center closer to the World Languages classrooms
- o Dedicate space to develop a larger Speech Sign Success Center/Deaf Cultural Center

### CHALLENGES AND OPPORTUNITIES

- o Develop and implement strategies to improve students' successful course completion rates
- o Develop an associate degree and an associate degree for transfer in Sign Language/Deaf Studies/Deaf Culture
- o Articulate with American Sign Language programs in local high schools
- o Partner with four-year institutions to create a smooth transition for students majoring in interpreter training
- o Develop a bachelor's degree in Sign Language and Interpreting
- o Develop hybrid courses
- o Develop strategies to promote the understanding and value of deaf culture

### IMPLICATIONS FOR FACILITIES

- o Add or remodel classrooms to include flexible seating arrangements and sufficient space to allow faculty and student communication in sign language
- o Add video system to Language Learning Center

### LABOR MARKET DATA: SIGN LANGUAGE AND INTERPRETING

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015-2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
27-3091	Interpreters and Translators	4,490	5,330	19%	1,244	249	\$22.64	Bachelor's

### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

# INSTRUCTIONAL PROGRAMS

# SOCIOLOGY

**Sociology** introduces students to the study of the social lives of peoples, groups, and societies, including study of the behavior of persons as social beings and the scientific study of social inequalities.

## SCOPE OF COURSE WORK

- o 17 degree-applicable courses
- o On-campus lecture, online lecture, hybrid

## COURSES FULFILL

- o Requirements for an associate degree for transfer in Sociology
- o Requirements for an associate degree in Social and Behavioral Sciences
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Kinesiology and Wellness
  - Social and Behavioral Sciences
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- o Transfer requirements for Sociology majors

## DATA ANALYSIS/SUMMARY

- o **Enrollment:** Although an additional section of Sociology was offered in fall 2015 compared to fall 2012 to meet the College's increased student enrollment, total enrollment in Sociology declined as did the average enrollment per section.
- o **Productivity:** The fill rates at census in both 2012 and 2015 were strong, close to or above 90 percent. The amount of FTES earned by Sociology courses decreased slightly in fall 2015 proportionate to the decrease in enrollment.

- o **Student retention and success:** The student retention rates in Sociology were comparable in 2012 and 2015. The Mt. SAC average successful course completion rate for Sociology courses in fall 2015 was slightly above the statewide average for the same discipline.

## PROJECTED GROWTH FOR SOCIOLOGY: FASTER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data, the level of enrollment reached in fall 2012, and the new transfer degree in Sociology, this discipline is projected to grow faster than the College's growth rate.

## CHALLENGES AND OPPORTUNITIES

- o Develop a research center on campus to assist with students' research projects

## IMPLICATIONS FOR FACILITIES

- o Add or remodel classrooms to create flexible seating arrangements to promote interaction and includes secure storage, smart technology and support for student devices
- o Add social sciences laboratory for teaching research methods and conducting experiments to be shared with Psychology
- o Add offices

## DATA

Sociology (SOC)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	2,828	2,690	-4.9%
Number of Sections	69	70	1.4%
Average Enrollment per Section	41.0	38.4	-6.2%
<b>Productivity</b>			
Fill Rate at Census	94.2%	89.6%	-4.9%
Discipline FTES	289.6	275.2	-5.0%
Discipline FTEF	13.4	14	4.5%
<b>Student Retention and Success</b>			
Retention Rate	88.9%	89.2%	0.4%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Sociology	89.2%	70%	67%

## NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

# TELEVISION

The **Television** program trains students in the theoretical, technical, and creative skills required for careers in television and film industries.

### SCOPE OF COURSE WORK

- o 37 degree-applicable courses (shared with Radio)
- o On campus lecture, on-campus laboratory, mobile lecture and laboratory

### COURSES FULFILL

- o Requirements for a certificate of achievement in Television Crew
- o Requirements for an associate degree in Television Production
- o Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Communication
  - Language Arts
  - Social and Behavioral Sciences
- o General education breadth requirements for associate degrees and transfer to CSU

### DATA ANALYSIS/SUMMARY: SHARED RADIO-TELEVISION COURSE

Since the course R-TV 01 Introduction to Electronic Media is shared between Radio and Television, data for this course are included in both program descriptions.

- o **Enrollment:** Enrollment decreased almost 11 percent between 2012–2015 even though three sections were offered each semester. As a result, the number of students per section also decreased by 11 percent.
- o **Productivity:** As a result of the decrease in enrollment, the fill rate at census and the

amount of FTES earned by this discipline was lower in 2015 compared to 2012.

- o **Student retention:** The student retention rate decreased slightly between 2012 and 2015.

### DATA ANALYSIS/SUMMARY: TELEVISION

- o **Enrollment:** The number of sections of Television courses doubled between 2012 and 2015 in response to student demand. Even with this increase in the number of sections, the average enrollment per section increased, which demonstrates that the additional sections met students' needs.
- o **Productivity:** Although the fill rate at census was lower in 2015 compared to 2012, FTES almost doubled due to the increase in total enrollment.
- o **Student retention:** The student retention rate for Television courses decreased slightly between 2012 and 2015. Statewide successful course completion rates are not available for Television as a stand-alone discipline. The Mt. SAC average successful course completion rate for Radio and Television courses was comparable to the statewide average for the same discipline.

### LABOR MARKET DATA ANALYSIS

A surge in digital entertainment from new online shows on Amazon, YouTube and other new media outlets has increased employment in Hollywood. The *2017 Otis Report on Creative Economy* forecasts the addition of entertainment jobs in Los Angeles County from 2011–2018. (Source: *otis.edu*)

### DATA

Radio and Television courses (R-TV 01)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	103	92	-10.7%
Number of Sections	3	3	0.0%
Average Enrollment per Section	34.3	30.7	-10.7%
<b>Productivity</b>			
Fill Rate at Census	98.1%	90.1%	-8.2%
Discipline FTES	10.81	9.65	-10.7%
Discipline FTEF	0.6	0.6	0.0%
<b>Student Retention and Success</b>			
Retention Rate	93.2%	89.8%	-3.7%

Television (R-TV 14, 18, 19A, 19B, 21, 22, 23, 24, 25, 28, 29)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	87	179	105.7%
Number of Sections	4	8	100.0%
Average Enrollment per Section	21.8	22.4	2.9%
<b>Productivity</b>			
Fill Rate at Census	104.1%	93.3%	-10.4%
Discipline FTES	12.2	24.3	98.9%
Discipline FTEF	1.1	2.1	99.1%
<b>Student Retention and Success</b>			
Retention Rate	97.8%	93.9%	-4.0%

## INSTRUCTIONAL PROGRAMS

### TELEVISION (cont.)

Over the next five years jobs in various occupations related to Television are projected to increase in number. Positions such as producers and directors typically require a bachelor's degree, and courses in Television at Mt. SAC prepare students for successful transfer in this major. Students interested in this field may also earn certificates of achievement and associate degrees, which make them competitive applicants for related occupations. Students currently employed in the field may take Mt. SAC Television courses to advance in their current positions.

#### PROJECTED GROWTH FOR TELEVISION: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data and the encouraging labor market data, Television is projected to keep pace with the College's overall growth. The potential for enrollment growth is enhanced by the College's acquisition of a state-of-the-art mobile broadcasting unit.

#### CHALLENGES AND OPPORTUNITIES

- o Develop strategies to support students who lack the requisite college-level skills in mathematics and English
- o Expand curriculum to create separate Producer and Video Engineering classes and increase training in soft skills throughout the program
- o Revise courses as needed to ensure alignment with transfer requirements

- o Use the new mobile unit to
  - Provide training in audio, instant replay, and graphics
  - Enable the production and broadcasting of sports and community activities
  - Partner with Diamond Bar to provide broadcast support for its new cable channel

#### IMPLICATIONS FOR FACILITIES

- o Locate two dedicated teaching spaces in the same building to maximize faculty and student use of shared equipment
- o Add secure equipment storage

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC Television	Mt. SAC Radio and Television	Statewide Radio and Television
Television	93.9%	78%	76%

#### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

#### LABOR MARKET DATA: TELEVISION

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
27-2012	Producers and Directors	25,462	28,371	11%	7,372	1,474	\$41.72	Bachelor's
27-4032	Film and Video Editors	12,685	14,276	13%	2,221	444	\$41.28	Bachelor's

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

# INSTRUCTIONAL PROGRAMS

## THEATER

**Theater** provides students with theoretical and practical training in all aspects of theater, providing preparation in acting, stagecraft, costuming, make-up, lighting, and playwriting. Main stage productions are used to provide performance opportunities and reinforce classroom instruction. Courses prepare students for transfer and/or professional training.

### SCOPE OF COURSE WORK

- o 12 degree-applicable courses
- o On campus lecture, on-campus laboratory

### COURSES FULFILL

- o Requirements for an associate degree for transfer in Theater Arts
- o General education breadth requirements for associate degrees and transfer (CSU and IGETC)

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Six additional sections of Theater were offered in fall 2015 compared to fall 2012. Enrollment increased 22.4 percent and the average enrollment per section was only slightly reduced by the addition of these sections, demonstrating that the additional sections met students' needs.
- o **Productivity:** Although the fill rate at census was lower in 2015 compared to 2012, total FTES increased due to the increase in enrollment in Theater courses.
- o **Student retention and success:** Although the student retention rates decreased between 2012–2015, the Mt. SAC average successful course completion rate in Theater courses

in fall 2015 was the same as the statewide average for the same discipline.

### PROJECTED GROWTH FOR THEATER: SAME AS COLLEGE-WIDE GROWTH RATE

It is difficult to standardize labor market data for creative arts because many of the employment opportunities are self-employment or freelance. According to the *2017 Otis Report of the Creative Economy*, the Los Angeles metropolitan area was home to the second largest number of creative workers, with more than 429,400 wage and salary workers in the creative industries. Between 2009–2014, the number of self-employed workers in the creative arts in Los Angeles and Orange counties increased at an annual average rate of 4.1 percent (31,641 firms in total), which is slightly higher than the region's 3.1 percent increase across all industries. (Source: otis.edu)

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data, Theater is projected to keep pace with the College's overall growth.

### CHALLENGES AND OPPORTUNITIES

- o Revise curriculum and practices as needed to accommodate advances in technical theater
- o Develop a certificate of achievement in Technical Theater
- o Collaborate with Music to share audio production, editing, and recording equipment
- o Expand internships with local high schools
- o Collaborate with Dance and Music to increase the numbers and types of productions

### DATA

Theater (THTR)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	415	508	22.4%
Number of Sections	16	22	37.5%
Average Enrollment per Section	25.9	23.1	-11.0%
<b>Productivity</b>			
Fill Rate at Census	103.7%	92.2%	-11.0%
Discipline FTES	50.97	58.1	14.0%
Discipline FTEF	3.6	4.6	28.9%
<b>Student Retention and Success</b>			
Retention Rate	94.2%	89.7%	-4.7%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Theater	89.7%	77%	77%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS THEATER (cont.)

### IMPLICATIONS FOR FACILITIES

- Improve signage and lighting outside the Performing Arts Center
- Add rehearsal space dedicated to the Theater program
- Remodel the studio theater to upgrade:
  - Sound/support booth
  - Grid for lighting
  - Lobby
- Add laboratory for technical theater classes

3.260

MT. SAN ANTONIO COLLEGE 2018 EDUCATIONAL AND FACILITIES MASTER PLAN  
CBT AND HMC ARCHITECTS / DRAFT DATED 12.12.18



3.261

MT. SAN ANTONIO COLLEGE 2018 EDUCATIONAL AND FACILITIES MASTER PLAN  
CBT AND HMC ARCHITECTS / DRAFT DATED 12.12.18

## INSTRUCTIONAL PROGRAMS

# WELDING

**Welding** prepares students for employment with a comprehensive array of courses including basic welding, metallurgy, blueprint reading, welding power, and certification. Training is focused on workplace readiness and the development of hands-on skills supported by the technical knowledge needed to enter the profession of welding and related careers.

### SCOPE OF COURSE WORK

- o 15 degree-applicable courses
- o On-campus lecture, on-campus laboratory

### COURSES FULFILL

- o Requirements for a skills certificates (< 18 units) in
  - Welding
- o Requirements for certificates of achievement (> 18 units) in
  - Welder—Gas Tungsten Arc Welding
  - Welder—Licensed
  - Welding—Semiautomatic Arc Welding
- o Requirements for an associate degree in Welding

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** Although an additional section of Welding was offered in fall 2015, the enrollment in Welding courses decreased between 2012 and 2015, having the effect of also decreasing the average enrollment per section.
- o **Productivity:** Although the fill rate at census was lower in 2015 compared to 2012, the sections were filled to capacity. The amount of FTES earned by Welding declined slightly.

- o **Student retention and success:** The student retention rates in Welding courses decreased between 2012–2015. The Mt. SAC average successful course completion rate for Welding courses in fall 2015 was slightly below the statewide average for the same discipline.

### LABOR MARKET DATA ANALYSIS

Over the next five years jobs for Welders are projected to decrease in number. Students interested in this field may earn skills certificates, certificates of achievement, and associate degrees, which make them competitive applicants for occupations that require proficiency in welding.

Students who are already employed may take Welding courses to advance in their current positions. Skills Builder data reflect the change in wages for students who completed higher level CTE coursework in 2013–2014 but who did not subsequently transfer to a four-year institution or complete a degree or certificate. Of the 39 students in this category who completed Welding courses at Mt. SAC, the median increase in their earnings was 36.5 percent.

### PROJECTED GROWTH FOR WELDING: SLOWER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Given the enrollment trends for Welding and the labor market projections, this program is projected to increase in enrollment over the next decade, but is unlikely to grow at the same rate as the general, College-wide enrollment.

### DATA

Welding (WELD)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	343	334	-2.6%
Number of Sections	17	18	5.9%
Average Enrollment per Section	20.2	18.6	-8.0%
<b>Productivity</b>			
Fill Rate at Census	114.5%	102.3%	-10.7%
Discipline FTES	61.9	60.1	-3.0%
Discipline FTEF	4.8	5.2	8.9%
<b>Student Retention and Success</b>			
Retention Rate	93.2%	87.4%	-6.1%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Welding	87.4%	76%	79%

### NOTES

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

### WELDING (cont.)

#### CHALLENGES AND OPPORTUNITIES

- o Develop certificates in areas such as pipe welding, reinforcing steel-rebar, and Fabrication Technology
- o Assess current certificates to reduce redundancy
- o Collaborate with Industrial Design Engineering and Manufacturing Technology to develop an interdisciplinary degree
- o Revise the units required for each certificate to improve the number of certificates awarded
- o Meet rapidly growing employment demands caused by an outdated infrastructure, economic growth, the aerospace industry, and an aging workforce

#### IMPLICATIONS FOR FACILITIES

- o Add a multi-use welding laboratory
- o Add a lecture/computer laboratory space adjacent to the shop that will be shared with Air Conditioning and Refrigeration program
- o Remodel storage space to accommodate lengths of welding rod material
- o Add offices

#### LABOR MARKET DATA: WELDING

SOC	Occupation Examples, not an Exhaustive List	2015 Jobs (actual)	2020 Jobs (projected)	2015–2020 % Change	Openings	Annual Openings	Median Hourly Earnings	Typical Entry Level Education
51-4121	Welders, Cutters, Solderers, and Brazers	14,316	14,067	(2%)	2,291	458	\$17.05	HS diploma or equivalent
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	1,688	1,482	(12%)	225	45	\$14.99	HS diploma or equivalent

#### NOTE

- o Data for Los Angeles, Orange, Riverside, and San Bernardino Counties

## INSTRUCTIONAL PROGRAMS

# WORLD LANGUAGES

The **World Languages** program provides students with an understanding of the acquisition of language with a focus on reading, writing, listening, and speaking within a diverse environment. The program offers courses in Arabic, Chinese, French, German, Italian, Japanese, and Spanish.

### SCOPE OF COURSE WORK

- 37 degree-applicable courses: two Arabic, four Chinese, seven French, three German, eight Italian, five Japanese, eight Spanish

### COURSES FULFILL

- Requirements for an associate degree in Liberal Arts and Sciences with an emphasis in
  - Fine Arts
  - Language Arts
- Requirements for an associate degree for transfer in History
- General education breadth requirements for associate degrees and transfer (CSU and IGETC)
- Transfer requirements for majors in World Languages

### DATA ANALYSIS/SUMMARY

- **Enrollment:** As College-wide enrollment increased between 2012–2015, enrollment increased in four World Languages: Arabic, French, German, and Japanese, but decreased in Chinese, Italian, and Spanish. The numbers of sections in each World Language increased or decreased proportionate to the enrollment changes, with the exception of Spanish.

Although four additional sections of Spanish were offered in fall 2015, total enrollment in that semester decreased.

- **Productivity:** The fill rates at census for all of the World Languages courses were 75% or higher. In both fall 2012 and fall 2015. The amount of FTES earned by each of the World Languages increased or decreased between 2012 and 2015 parallel to the enrollment in those courses.
- **Student retention and success:** The student retention rates in all World Languages courses were comparable in 2012 and 2015, with the exceptions of an increase in student retention rates in Arabic courses and a decrease in student retention rates in German courses. The Mt. SAC average successful course completion rates in fall 2015 for Arabic, French, German, and Spanish courses were below the statewide averages for the same languages, while the successful course completion rates in fall 2015 for Chinese, Italian, and Japanese were comparable to the statewide averages for these disciplines.

### PROJECTED GROWTH FOR WORLD LANGUAGES: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Given the enrollment trends for World Languages, this program is projected to grow at the same rate as the overall College-wide enrollment.

### CHALLENGES AND OPPORTUNITIES

- Develop and implement strategies to improve students' successful course completion rates
- Increase the number of languages that provide two kinds of courses: one designed as a foreign language for students not native to the language and one as a heritage language for students who are native to the language
- Promote the associate of arts degree in World Languages and Global Studies
- Develop a general linguistics course
- Develop language courses for professional contexts, such as Spanish for medical personnel
- Expand assessment and placement procedures, including credit-by-exam opportunities
- Increase opportunities for students to communicate in a language interpersonally, contextually, and realistically

### IMPLICATIONS FOR FACILITIES

- Add or remodel classrooms to provide flexible seating
- Increase availability and quality of classroom technology, such as high-quality video/audio systems and equipment for teleconferencing to talk with speakers in other countries

INSTRUCTIONAL PROGRAMS  
**WORLD LANGUAGES (cont.)**

DATA

Arabic (ARAB)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	34	71	108.8%
Number of Sections	1	2	100.0%
Average Enrollment per Section	34	35.5	4.4%
<b>Productivity</b>			
Fill Rate at Census	106.3%	101.4%	-4.6%
Discipline FTES	4.8	10.1	108.7%
Discipline FTEF	0.3	0.5	96.3%
<b>Student Retention and Success</b>			
Retention Rate	85.3%	91.7%	7.5%

Chinese (CHIN)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	533	379	-28.9%
Number of Sections	17	14	-17.6%
Average Enrollment per Section	31.4	27.1	-13.7%
<b>Productivity</b>			
Fill Rate at Census	99.6%	86.1%	-13.6%
Discipline FTES	75.5	53.7	-28.8%
Discipline FTEF	4.5	3.7	-17.6%
<b>Student Retention and Success</b>			
Retention Rate	87.5%	85.9%	-1.9%

French (FRCH)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	382	418	9.4%
Number of Sections	13	15	15.4%
Average Enrollment per Section	29.4	27.9	-5.1%
<b>Productivity</b>			
Fill Rate at Census	88.7%	81.9%	-7.7%
Discipline FTES	52.7	57.5	9.0%
Discipline FTEF	2.9	3.9	37.3%
<b>Student Retention and Success</b>			
Retention Rate	83.5%	83.8%	0.3%

German (GERM)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	99	132	33.3%
Number of Sections	4	5	25.0%
Average Enrollment per Section	24.8	26.4	6.7%
<b>Productivity</b>			
Fill Rate at Census	75.6%	76.9%	1.7%
Discipline FTES	14.1	18.7	33.4%
Discipline FTEF	1.1	1.3	25.2%
<b>Student Retention and Success</b>			
Retention Rate	91.2%	84.9%	-6.9%

INSTRUCTIONAL PROGRAMS  
**WORLD LANGUAGES (cont.)**

Italian (ITAL)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	442	359	-18.8%
Number of Sections	15	13	-13.3%
Average Enrollment per Section	29.5	27.6	-6.3%
<b>Productivity</b>			
Fill Rate at Census	87.9%	82.9%	-5.6%
Discipline FTES	60.9	49.3	-19.0%
Discipline FTEF	3.4	3.4	0.0%
<b>Student Retention and Success</b>			
Retention Rate	88.4%	90.5%	2.3%

Japanese (JAPN)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	654	680	4.0%
Number of Sections	20	22	10.0%
Average Enrollment per Section	32.7	30.9	-5.5%
<b>Productivity</b>			
Fill Rate at Census	99.1%	94.5%	-4.6%
Discipline FTES	92.7	96.4	4.0%
Discipline FTEF	5.3	5.9	9.9%
<b>Student Retention and Success</b>			
Retention Rate	84.9%	83.3%	-1.9%

Spanish (SPAN)	Fall 2012	Fall 2015	% Change
<b>Enrollment</b>			
Enrollment	1,512	1,415	-6.4%
Number of Sections	45	49	8.9%
Average Enrollment per Section	33.6	28.9	-14.0%
<b>Productivity</b>			
Fill Rate at Census	100.4	86.9	-13.4%
Discipline FTES	213.7	200.4	-6.2%
Discipline FTEF	12.0	13.1	8.8%
<b>Student Retention and Success</b>			
Retention Rate	87.4%	87.0%	-0.4%

Discipline	Retention Fall 2015	Successful Course Completion Rate Fall 2015	
	Mt. SAC	Mt. SAC	Statewide
Arabic	91.7%	66%	84%
Chinese	85.9%	75%	76%
French	83.8%	58%	65%
German	84.9%	55%	66%
Italian	90.5%	66%	68%
Japanese	83.3%	65%	68%
Spanish	87.0%	62%	70%

**NOTES**

- o Retention Rate: Compares the number of students enrolled at census with the number of student who received any grade at the end of the semester: A,B,C,D,F,P,NP,I\*,IPP,INP,FW
- o Successful Course Completion Rate: Compares the number of students enrolled at census with the number of student who received a C or better at the end of the semester or a grade of A,B,C,P,IA,IB,IC,IPP

## INSTRUCTIONAL PROGRAMS

# OVERVIEW: SCHOOL OF CONTINUING EDUCATION

Mt. SAC's School of Continuing Education offers a range of noncredit and not-for-credit courses and programs to prepare students for success in employment and/or college-level coursework. Students choose from 382 noncredit courses that may lead to one of 41 certificates of completion, one of 11 certificates of competency, and/or an Adult High School Diploma. Students do not pay an enrollment fee for noncredit courses and certificates. Noncredit instruction accounted for 19 percent of the College's FTES (Full-time Equivalent Students) in 2015–2016. (Refer to Chapter 2: *Profile of the College's Communities and Students*.)

Upon satisfactory completion of a sequence of two or more courses, students may qualify for a:

- o Certificate of Competency in a recognized career field articulated with degree-applicable coursework, completion of an associate degree, or transfer to a baccalaureate institution,
- o Certificate of Completion leading to improved employability or job opportunities, or
- o Adult High School Diploma

The funding model for California community colleges changed with the approval of Title 5, section 55151, which allocated the same level of funding for noncredit Career Development and College Preparation courses as allocated for credit courses. This change prompted significant expansion of the College's School of Continuing Education, which was the fourth largest noncredit program in the state in 2015–2016, generating 6,253 FTES (Full-Time Equivalent Students).

Mirroring its communities, the College's noncredit student population is diverse in terms of race/ethnicity. Of those who reported their race/ethnicity, the noncredit student population is 90 percent non-white. The two largest ethnic groups are Latino (59 percent) and Asian (16 percent). The majority of noncredit students enrolled at Mt. SAC are over the age of 50.

In addition to noncredit offerings, the School of Continuing Education provides fee-based non-degree-applicable offerings and contract education as well as a robust array of student services. Student services include embedded counseling, soft-skills, tutoring, and assessment.

The *Mt. SAC 2018 Educational and Facilities Master Plan* is grounded in an analysis of the current status of and the challenges and opportunities faced by all instructional programs and services offered to students. The following section includes a description of each of the five units in the School of Continuing Education.

- o Adult Basic Education
- o Community and Contract Education
- o Education for Older Adults and Adults with Disabilities
- o English as a Second Language
- o Short-term Vocational

Descriptions of the noncredit and not-for-credit instructional units are organized into five sections.

### UNIT DESCRIPTION

Descriptions of the noncredit instructional units include the types of courses and certificates offered by each unit.

### DATA

Data on noncredit instructional units are presented for fall 2012 and fall 2015 on the following benchmarks as appropriate.

- o Enrollment as measured by the number of sections offered, the total duplicated student headcount, and the amount of FTES generated by the unit.
- o Students' outcomes/achievement as measured by rate at which enrolled students completed the course with a passing grade.

### PROJECTED GROWTH

Based on current population and economic projections, Mt. SAC projects that it will grow between 0.18–1.22 percent each year over the next ten years. The mid-point of this range is the projection that Mt. SAC will grow 0.75 percent per year over the next decade. At this projected growth rate, the College will continue to fulfill its mission of providing higher education opportunities for the surrounding communities by keeping pace with the projected population growth for this region.

Each noncredit program is likely to grow in order to serve a greater number of students, but the programs are not likely to grow at the same rate. The projected rate of growth for each noncredit unit is identified relative to the projected rate of growth for the College:

- o Slower than the projected mid-point range of 0.75 percent growth per year for each of the next ten years,

- o At the same rate as the projected mid-point range of 0.75 percent growth per year for each of the next ten years, or
- o Faster than the projected mid-point range of 0.75 percent growth per year for each of the next ten years.

### CHALLENGES AND OPPORTUNITIES

The challenges and opportunities included in this section describe anticipated programmatic changes at a broad level, such as correcting an identified weakness or developing new certificates. Maintenance-of-effort activities and specific requests for staffing or budgetary modifications are not included in this section because these challenge are more appropriately included in the annual Planning for Institutional Effectiveness reports.

### IMPLICATIONS FOR FACILITIES

This section lists each discipline's needs and requests for new and remodeled facilities. This section does not reflect the College's analysis or prioritization of facilities needs and requests.

INSTRUCTIONAL PROGRAMS

# ADULT BASIC EDUCATION

**Adult Basic Education** offers noncredit courses in career readiness, basic skills, high school equivalency preparation, and secondary education. Certificates of Competency are issued to students completing a sequence of noncredit courses for the purpose of transitioning to credit, a degree, or baccalaureate institution.

**COURSES INCLUDE**

- o Basic skills, computer literacy and college placement test preparation
- o High School Equivalency Preparation (GED/HiSET)
- o Adult High School Diploma, High School Credit Recovery, and Summer High School Program
- o Armed Services Vocational Aptitude Battery Preparation (ASVAB)

**SCOPE OF COURSEWORK**

- o 67 courses: 29 in Basic Skills; 38 in High School Basic Skills

**COURSES FULFILL**

- o Requirements for Certificates of Competency in
  - Basic Career Readiness
  - Basic Skills
  - Secondary Education
  - High School Equivalency Preparation
  - Armed Services Vocational Aptitude Battery
  - Financial and Database Management

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Enrollment decreases when the unemployment rate drops, which occurred in Adult Basic Education Department. Enrollment also decreased because the high school program streamlined coursework and introduced ways for students to accelerate completion of the diploma. The Summer High School program, which assists high school students in becoming college-ready, offered significantly more sections in summer 2015 than in summer 2012.
- o **Student outcomes/achievement:** Course completion increased from fall 2012 to fall 2015 due to strategic interventions, such as embedded counseling, tutoring, and acceleration strategies.

**PROJECTED GROWTH FOR ADULT BASIC EDUCATION: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the positive trends in the enrollment data and the educational needs of adults over age 25 (see Chapter 2: *Profile of the College’s Communities and Students*), Adult Basic Education is projected to keep pace with the College’s overall growth over the next decade.

**DATA**

<b>Enrollment: Adult Basic Education</b>	<b>Fall 2012</b>	<b>Fall 2015</b>
Number of Sections	54	53
Total enrolled	1,375	1,174
FTEs	85.1	74.2
<b>Student outcomes/achievement</b>		
Course completion (Pass/Satisfactory Progress—Success)	88%	98%

<b>Enrollment: Summer High School</b>	<b>Summer 2012</b>	<b>Summer 2015</b>
Number of Sections	334	469
Total enrolled	8,736	11,339
FTEs	1,801.9	2,465.1
<b>Student outcomes/achievement</b>		
Course completion (Pass/Satisfactory Progress—Success)	85%	89%

## INSTRUCTIONAL PROGRAMS

### ADULT BASIC EDUCATION *(cont.)*

#### CHALLENGES AND OPPORTUNITIES

- Meet students' needs and institutional demands for growth with limited and inadequate facilities
- Develop additional certificates and courses as bridges to college and employment
- Develop additional partnerships with credit divisions, such as the recent partnership with Nursing and Psychiatric Technician programs
- Develop and implement strategies to increase persistence, program completion, and transition for disproportionately impacted populations
- Expand embedded counseling and similar programs offering extra support to students
- Expand the use of instructional technology in the classroom
- Develop pathways for students' smooth transition from noncredit programs into college-level programs
- Collaborate with English and Mathematics to develop contextualized noncredit certificates and coursework

#### IMPLICATIONS FOR FACILITIES

- Add permanent on-campus facilities of sufficient size to:
  - Expand noncredit basic skills, adult secondary programs, and support programs
  - Embed instructional and counseling support within classrooms and labs
  - Support students in transitioning from noncredit into credit programs
  - Improve technology within Adult Basic Education classrooms and laboratories



INSTRUCTIONAL PROGRAMS

# COMMUNITY AND CONTRACT EDUCATION

**Community Education** offers a variety of unique and innovative fee-based classes and programs. These include career and professional development programs, motorcyclist training, financial planning workshops, CPR and first aid classes, sports and fitness, and special programs for kids and youth. Students do not earn college credit when they complete Community Education courses. As a self-supporting program, Community Education is funded through fees charged to every participant.

**COURSES INCLUDE**

- o College for Kids
- o CPR and First Aid
- o Financial Planning and Investing
- o Institute of Reading Development
- o Makeup artistry
- o Medical Billing
- o Motorcyclist Training
- o Online Learning
- o Phlebotomy
- o Sports and Fitness
- o Swim
- o Water Technology

**Contract Education** is offered through the Workforce Training Center that provides customized performance-based training, assessment, and consulting services designed to assist business, industry, and other organizations to improve the quality of their products and services and to increase their competitiveness in domestic and international markets. Courses are funded through fees specific to each contract.

**COURSES INCLUDE**

- o Bookkeeping Preparation
- o Supervisory Training
- o Welding
- o Machining
- o MS Excel
- o Social Media and Marketing
- o Team Management

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Although Community Education Fee-based and Contract Education enrollment remained relatively stable between fall 2012 and fall 2015, revenue increased due to an increase in the fill rates for Community Education offerings, up from 7.4 percent in fall 2012 to 11.9 percent in fall 2015.

**PROJECTED GROWTH FOR COMMUNITY AND CONTRACT EDUCATION: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data, Community Education is projected to keep pace with the College’s overall growth over the next decade.

**CHALLENGES AND OPPORTUNITIES**

- o Expand clinical sites for Phlebotomy program
- o Recruit content-expert faculty for Community and Contract Education
- o Partner with local industries to provide Contract Education

**IMPLICATIONS FOR FACILITIES**

- o Add a dedicated classroom and laboratory for Community and Contract Education

DATA

Enrollment	Fall 2012	Fall 2015
Number of Sections	231	144
Total enrolled	1,718	1,722

## INSTRUCTIONAL PROGRAMS

# EDUCATION FOR OLDER ADULTS AND ADULTS WITH DISABILITIES

**Education for Older Adults** program offers classes in health, art, civic engagement, and vocational areas for adults who are 55 years old and older. Given the financial challenges that come with longevity, courses in vocational areas focus on re-entry into the work force, emerging technologies, micro-enterprise, and enhanced workplace and employability skills. Courses in emerging technologies address the need to communicate, live, and work in a digital world. Classes are conducted at senior/community centers and residential facilities throughout the District.

**The Adults with Disabilities** program promotes the independent living and employment skills of individuals with intellectual disabilities. The goal is to provide students with the skills necessary in independent living and working environments. Classes are conducted at community centers throughout the District

### SCOPE OF COURSEWORK

- o 37 total Education for Older Adults and Adults with Disabilities courses: 23 vocational; 9 in health; 3 in the arts, and 2 specialized courses for Adults with Disabilities

### COURSES FULFILL

**Education for Older Adults:** Requirements for certificates of completion in

- o Micro Enterprises
- o Computer Presentation and Publication Applications
- o Excel Applications
- o Office Computer Applications, Levels 1, 2
- o Couture Tailoring

**Adults with Disabilities:** Requirements for certificates of completion in

- o Independent Living Skills
- o Job Readiness and Career Preparation
- o Micro Enterprises

### DATA ANALYSIS/SUMMARY

- o **Enrollment:** The number of sections, enrollment, and off-campus sites increased between fall 201 and fall 2015 to meet student needs. This increase is expected to continue increasing over the next five years.
- o **Student outcomes/achievement:** Course completion rates have remained steady with high success rates.

### PROJECTED GROWTH FOR EDUCATION FOR OLDER ADULTS AND ADULTS WITH DISABILITIES: SAME AS COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data and the projections for age distribution in the local population, Education for Older Adults and Adults with Disabilities program is projected to keep pace with the College's overall growth over the next decade.

### CHALLENGES AND OPPORTUNITIES

- o Keep pace with student demand given the projected increased in the population aged 55 and older
- o Meet students' needs and institutional demands for growth with limited and inadequate facilities

### DATA

Enrollment: Education for Older Adults and Adults with Disabilities	Fall 2012	Fall 2015
Number of Sections	141	174
Total enrolled	3,632	3,828
FTEs	244.6	261.0
Student outcomes/achievement		
Course completion (Pass/Satisfactory Progress—Success)	95%	95%

## INSTRUCTIONAL PROGRAMS

# EDUCATION FOR OLDER ADULTS AND ADULTS WITH DISABILITIES *(cont.)*

### IMPLICATIONS FOR FACILITIES

- Add permanent on-campus facilities of sufficient size to:
  - Expand noncredit basic skills, adult secondary programs, and support programs
  - Embed instructional and counseling support within classrooms and labs
  - Support students in transitioning from noncredit into credit programs
  - Improve technology within Adult Basic Education classrooms and laboratories



INSTRUCTIONAL PROGRAMS

# ENGLISH AS A SECOND LANGUAGE

The **English as a Second Language (ESL)** program provides noncredit courses for English language learners at seven levels of proficiency to prepare them for credit or career pathways. ESL courses are designed to support non-native English speakers to attain their goals of academic achievement, career preparation, and civic participation. The ESL program also provides a robust array of instructional and career support services, such as a Language Learning Center (serving both credit and noncredit students), a dedicated ESL Library and reading program, and an annual ESL Career Conferences.

Students in the noncredit ESL program may transition directly into the College’s credit ESL program (American Language) from the high intermediate level (Level 4). Most noncredit ESL students, however, opt to transition to credit ESL through the **Vocational ESL (VESL) Career Paths** program, which offers instruction in language, computers, and career preparation. The VESL program is structured as a cohort model with contextualized curriculum and tutoring support.

**COURSES INCLUDE**

- o Level classes from Pre-Level 1 through Level 6, focusing on integrated skills and grammar
- o Skill-focused classes such as Speaking and Writing
- o Specialized courses, such as Test of English as a Foreign Language (TOEFL) Preparation, Citizenship Preparation, and Career and Life Planning
- o Contextualized VESL courses such as Microcomputer Applications and ESL for Health Professionals

**SCOPE OF COURSEWORK**

- o 21 total noncredit ESL courses: 7 levels of ESL; 4 levels of speaking courses; 4 levels of writing courses; VESL Career Paths; Deaf ESL 1 & 2, Citizenship, TOEFL Preparation, and Career & Life Planning
- o On-campus lecture and laboratory

**COURSES FULFILL**

- o Requirements for certificates of competency in
  - ESL Beginning Level
  - ESL Intermediate Level
  - ESL Advanced Level
  - VESL Career Paths

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** In Fall 2012, Skills courses were offered in two 6-week sessions. These courses were later offered as 14-week courses to increase student persistence and progress, as reflected in Fall 2015. Other contributions to increased FTES and enrollment include the addition of core Level class offerings in ESL as well as offering classes across the campus.
- o **Student outcomes/achievement:** Course completion rates in certificated Level classes have been stable while course completion rates in Skills classes have dropped slightly.

**PROJECTED GROWTH FOR ESL: SAME AS COLLEGE-WIDE GROWTH RATE**

Using a mid-point of 0.75 percent annual growth, the College’s projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data and the demographics of the local communities, ESL is projected to keep pace with the College’s overall growth over the next decade.

DATA

Enrollment	Fall 2012	Fall 2015
Number of Sections	119	108
Total enrolled	2,266	2,753
FTES	594.1	738.9
Student outcomes/achievement		
Course completion (Pass/Satisfactory Progress—Success)	91%	87%

## INSTRUCTIONAL PROGRAMS

### ENGLISH AS A SECOND LANGUAGE (cont.)

#### CHALLENGES AND OPPORTUNITIES

- Expand the Vocational English as a Second Language Career Paths Programs to provide opportunities for transition to jobs and careers with high employability potential
- Improve outreach to and access for students who are socio-economically disadvantaged
- Increase the enrollment of Hispanic populations currently disproportionate in the communities served by the College
- Streamline pathways for students from K-12 adult school to noncredit ESL through articulation and partnership
- Develop pathways for students' smooth transition from noncredit ESL into college-level courses
- Collaborate with English and Mathematics to develop contextualized noncredit certificates and coursework

#### IMPLICATIONS FOR FACILITIES

- Add permanent on-campus facilities of sufficient size to:
  - Expand noncredit basic skills, adult secondary programs, and support programs
  - Embed instructional and counseling support within classrooms and labs
  - Support students in transitioning from noncredit into credit programs
  - Improve technology in ESL and VESL classrooms and laboratories to match the technology-intensive used in ESL credit teaching and learning programs
  - Include flexible seating arrangements to foster communication in both lecture settings as well as small group assignments

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MT. SAN ANTONIO COLLEGE 2018 EDUCATIONAL AND FACILITIES MASTER PLAN  
CBT AND HMC ARCHITECTS / DRAFT DATED 12.12.18



3.287

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INSTRUCTIONAL PROGRAMS

# SHORT-TERM VOCATIONAL

**Short-term Vocational** programs are designed for student completion within a year or less. These noncredit courses and certificates provide the skills and knowledge needed in specific vocational areas such as health careers, electronics, business, computer technology, and welding. Some noncredit certificates are dual-listed, meaning that they mirror credit courses and allow students to earn certificates of completion in different career paths.

**SCOPE OF COURSEWORK**

- o 257 non-degree-applicable courses in 33 areas of study

**COURSES FULFILL**

- o Requirements for short-term vocational certificates of completion in:
  - Accounting
    - » Bookkeeping
    - » Computerized
    - » Payroll
  - Acute Care Nursing Assistant
  - Administrative Assistant—Levels 1, 2
  - Business Management—Levels 1, 2, 3
  - Certified Nursing Assistant
  - Computer Systems Technology
  - Computer and Networking Technology - Level 1
  - Electronic Assembly and Fabrication
  - Electronic Systems Technology Cabling and Wiring
  - Electronics Communications
  - Electronics Technology
  - Electronics and Computer Engineering Technology
  - Electronics: Industrial Systems

- Floral Design
- Certified Home Health Aide
- Horse Ranch Management
- Human Resources Management
- In-home Support Services
- Interior Design—Level 1
- International Business—Levels 1, 2
- Livestock Production Management
- MasterCAM
- Nursery Production Management
- Office Computer Applications
- Pet Science
- Photography—Level 1
- Retail Management—Levels 1, 2, 3
- Small Business Management—Levels 1, 2, 3
- Welding
  - » Automotive Welding, Cutting and Modification
  - » Gas Tungsten Arc Welding
  - » Licensed Welder
  - » Semiautomatic Arc Welding
  - » Welding

**DATA ANALYSIS/SUMMARY**

- o **Enrollment:** Enrollment in Short-term Vocational programs increased between 2012–2015 due to:
  - Expanded efforts to bring students into the Health Resource Center
  - The transfer of the Electronics Systems Technology program from credit to noncredit
  - Offering the Home Health Aide course in Fall 2015

**DATA**

<b>Enrollment</b>	<b>Fall 2012</b>	<b>Fall 2015</b>
Number of Sections	126	163
Total enrolled	464	587
FTES	29.2	37.1
<b>Student outcomes/achievement</b>		
Course completion (Pass/Satisfactory Progress—Success)	78%	82%

## INSTRUCTIONAL PROGRAMS

### SHORT-TERM VOCATIONAL (cont.)

- **Student outcomes/achievement:** Short-Term Vocational programs have a high completion rate due to the clear connection between passing courses and gaining employment. For example, in Fall 2015, there was a 90% pass rate in these health career programs: Home Health Aide, Certified Nursing Assistant, and Acute Certified Nursing Assistant.
- Develop and implement strategies to increase student completion of dual-listed courses and certificates
- Collaborate with the Curriculum Committee to develop a fast-track process for course and program approval
- Collaborate with English and Mathematics to develop contextualized noncredit certificates and coursework

#### PROJECTED GROWTH FOR SHORT-TERM VOCATIONAL: FASTER THAN COLLEGE-WIDE GROWTH RATE

Using a mid-point of 0.75 percent annual growth, the College's projected growth rate is 8.6 percent over the next ten years. Based on the trends in the enrollment data and the development of new offerings in the Short-term Vocational program, this unit is projected to grow faster than the College's overall growth over the next decade.

#### CHALLENGES AND OPPORTUNITIES

- Meet students' needs and institutional demands for growth with limited and inadequate facilities
- Keep pace with changing labor market to ensure that Short-term Vocational offerings match workforce needs
- Expand external partnerships to provide work-based learning opportunities and job placement opportunities
- Develop courses to be short-term and flexible to meet student demands and job growth
- Provide increased counseling and tutoring support for Short-term Vocational students, including those in dual-listed courses
- Add permanent on-campus facilities of sufficient size to:
  - Expand noncredit basic skills, adult secondary programs, and support programs
  - Embed instructional and counseling support within classrooms and labs
  - Support students in transitioning from noncredit into credit programs
  - Add laboratory space, simulation laboratories, and dedicated equipment for specialized courses, such as health careers and Electronics Systems Technology

#### IMPLICATIONS FOR FACILITIES



# INSTRUCTIONAL PROGRAMS SUMMARY

SUMMARY: PROJECTED GROWTH RATES FOR CREDIT AND SCHOOL OF CONTINUING EDUCATION INSTRUCTIONAL PROGRAMS

Faster than College-wide Growth Rate*	Same as College-wide Growth Rate*	Slower than College-wide Growth Rate*
Biological Sciences	Accounting	Aircraft Maintenance Technology
Chemistry	Administration of Justice	American Language
Communication (Speech)	Adult Basic Education	Art History
English	Aeronautics	Economics
Learning Centers	Agriculture and Animal Sciences	Fashion
Library/Learning Resources	Air Conditioning and Refrigeration	Histologic Technician Training
Mathematics	Alcohol and Drug Counseling	Interior Design
Ornamental Horticulture	Animation	Journalism
Psychology	Anthropology	Nursing
Registered Veterinary Technology	Architectural Technology	Nutrition and Foods
Short-term Vocational	Astronomy	Paralegal
Sign Language and Interpreting	Athletics	Radio
Sociology	Business Law	Radiologic Technology
	Business Management	Real Estate
	Child Development	Respiratory Therapy
	Community and Contract Education	Welding
	Computer and Networking Technology	
	Computer Information Systems	
	Computer Science	

SUMMARY: PROJECTED GROWTH RATES FOR CREDIT AND SCHOOL OF CONTINUING EDUCATION INSTRUCTIONAL PROGRAMS (CONT.)

Faster than College-wide Growth Rate*	Same as College-wide Growth Rate*	Slower than College-wide Growth Rate*
	Dance	
	Earth Sciences	
	Education of Older Adults and Adults with Disabilities	
	Electronics and Computer Engineering Technology	
	Emergency Medical Services	
	Engineering and Surveying	
	Engineering Construction Technology	
	English as a Second Language	
	Family and Consumer Science	
	Fine Arts	
	Fire Technology	
	Geography	
	Graphic Design and Illustration	
	History	
	Hospitality and Restaurant Management	
	Industrial Design Engineering	
	Kinesiology	
	Learning Assistance	
	Manufacturing Technology	
	Medical Terminology	

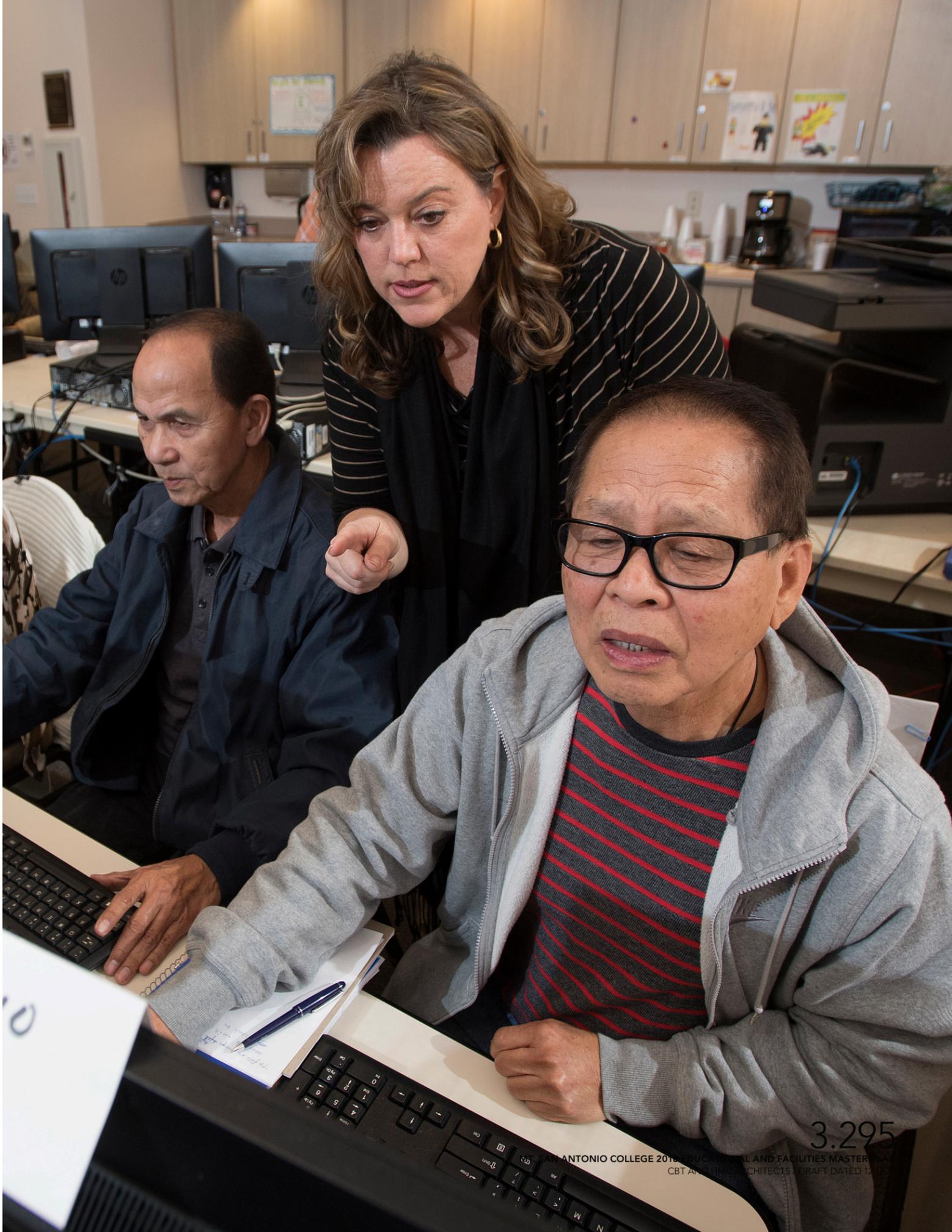
# INSTRUCTIONAL PROGRAMS SUMMARY (cont.)

SUMMARY: PROJECTED GROWTH RATES FOR CREDIT AND SCHOOL OF CONTINUING EDUCATION INSTRUCTIONAL PROGRAMS (CONT.)

Faster than College-wide Growth Rate*	Same as College-wide Growth Rate*	Slower than College-wide Growth Rate*
	Music	
	Philosophy	
	Photography	
	Physics and Physical Science	
	Political Science	
	Psychiatric Technician	
	Television	
	Theater	
	World Languages	

**NOTE**

- \*Growth rate = Using a mid-point of 0.75 percent annual growth, Mt. SAC’s projected growth rate is 8.6 percent over the next ten years.



INSTRUCTIONAL PROGRAMS

# GLOSSARY OF DATA ELEMENTS

GLOSSARY OF DATA ELEMENTS

<b>Enrollment</b>	
<b>Enrollment</b>	The total number of enrollments for all courses with the same course identifier. This is the number of enrollments rather than a student headcount, meaning that Individual students are counted more than once if they were enrolled in more than one course with the same course identifier.
<b>Number of sections</b>	The number of sections scheduled in fall 2012 or fall 2015 with this course identifier.
<b>Average enrollment per section</b>	The product after dividing total enrollment by the number of sections.
<b>Productivity</b>	
<b>Fill rate at census</b>	Ratio comparing enrollment in a section with the capacity of that section.  <i>A number of 100% indicates that the number of enrollments equals the capacity of that section.</i>
<b>FTES</b>	The number of FTES (full-time equivalent students) earned by the courses with the designated course identifier.  <i>FTES is the state metric for measuring workload and is the basis for state apportionment to the District.</i>
<b>FTEF</b>	The number of FTEF (full-time equivalent faculty) assigned to courses with the designated course identifier.
<b>Student Outcomes</b>	
<b>Retention rate</b>	Ratio comparing the number of students enrolled in a section at census with the number of students who received any grade in that section
<b>Student Successful Course Completion Rate</b>	Ratio comparing the number of students enrolled in a section at census with the number of students who received a grade of C or better in that section. The student successful course completion rate for the discipline at Mt. SAC in fall 2015 courses is compared to the statewide rate for that discipline in fall 2015.