

<b>Core Curriculum Courses Required:</b>		<b>Units</b>
CIT 012	Introduction to Networking	4.0
CIT 021	Cisco Network Fundamentals (Cisco-1)	4.0
CIT 022	Routing Protocols and Concepts (Cisco-2)	4.0
CIT 078	Microsoft Server Essentials 1	4.0

<b>Plus two or more additional courses from the following electives (at least 8 units):</b>		<b>Units</b>
CIT 011	Desktop Operating Systems (A+, Part 1)	4.0
CIT 016	IT Security & Ethical Hacking	4.0
CIT 023	LAN Switching and Wireless (Cisco-3)	4.0
CIT 024	Accessing the WAN (Cisco-4)	4.0

<b>Required Units for the Major:</b>	<b>24.0</b>
Completion of General Education Requirements and electives as needed to reach 60 units.	
<b>Total Required Units:</b>	<b>60.0</b>

## COMPUTER INFORMATION TECHNOLOGY (CIT)

### Certificate of Achievement in Cisco Certified Network Administration (CCNA)

The Certificate of Achievement in Cisco Certified Network Administration (CCNA) is designed to provide the knowledge and skills needed to install, operate, and troubleshoot a small-to-medium size enterprise branch network, which includes connecting to multiple WANs, basic security measures, and wireless extension of the network. This program prepares students for the globally-recognized Cisco CCNA certification.

#### Program Learning Outcomes

- Students will install, operate, and troubleshoot medium-sized routed and switched networks.
- Students will implement and troubleshoot various protocols to manage addressing, perform load balancing and authentication.
- Students will establish and troubleshoot connection to service provider over WAN.

#### Career/Transfer Opportunities

Career opportunities include the following: computer technician, system administrator, network technician, network engineer.

To earn this certificate, students must complete the minimum required courses with a grade of C (or P) or better.

<b>Core Curriculum Courses Required:</b>		<b>Units</b>
CIT 021	Cisco Network Fundamentals (Cisco-1)	4.0
CIT 022	Routing Protocols and Concepts (Cisco-2)	4.0
CIT 023	LAN Switching and Wireless (Cisco-3)	4.0
CIT 024	Accessing the WAN (Cisco-4)	4.0

<b>Total Required Units:</b>	<b>16.0</b>
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#### Gainful Employment Disclosure Information

In compliance with the Gainful Employment Act, Mission College provides information on costs, normal time for completion, and average debt load incurred by students for all Career Technical Education programs that offer Certificates of Achievement. The link for this information is: [gainfulemployment.missioncollege.edu](http://gainfulemployment.missioncollege.edu).

## COUNSELING (COU)

### Associate in Arts in Liberal Arts

To earn this degree, students must meet the following requirements:

1. Choose option A or B or C for the General Education pattern related to your educational goal:
  - a. Associate of Arts/Associate of Science General Education;
  - b. California State University General Education Breadth (CSU GE-B); or
  - c. Intersegmental General Education Transfer Curriculum (IGETC)
2. Complete a minimum of 18 units in one of the five Areas of Emphasis:
  - a. Communication in the English Language and Critical Thinking
  - b. Natural Science and Mathematics
  - c. Arts and Humanities
  - d. Social and Behavioral Sciences
3. For all options, complete necessary Mission College Graduation and Proficiency requirements (COM, LIB, REA).

## COUNSELING (COU)

### Associate in Arts in Liberal Arts: Arts and Humanities

The Associate in Arts in Liberal Arts with an emphasis in Arts and Humanities provides students the opportunity to cultivate intellect, imagination, sensibility and sensitivity. Students will respond subjectively as well as objectively to aesthetic experiences and will develop an understanding of the integrity of both emotional and intellectual responses. Students will also refine their affective, cognitive, and physical faculties through studying great works of the human imagination. Critical thinking skills and self-understanding through these courses provide a framework for lifelong study in the arts and humanities areas and offers students a breadth of knowledge that could be focused into single discipline degrees as well as applied to an interdisciplinary degree.

#### Program Learning Outcomes

- Students will explain or demonstrate the connections between language, communication, and culture.
- Students will create, critique or analyze key elements of artistic expression by individuals or cultures.
- Students will interpret art forms and analyze humanistic texts in their historical and social contexts.

#### Career/Transfer Opportunities

The program is intended for students who are considering transfer, but have not decided on a major; students who are required to complete a degree for job promotion; or students who may wish to further their education and are considering a major that is interdisciplinary in focus.

To earn this degree, students must meet the following requirements:

- a. Completion of 60 degree applicable units with an overall GPA of 2.0.
- b. Completion of a minimum of 18 semester units in the major with a grade of C (or P) or better.
- c. Completion of the Associate in Arts graduation requirements.

Select a minimum of 18 units from the approved CSU GE-B Area C. Include courses from at least two different disciplines. These courses emphasize the study of cultural, literary, and humanistic activities as well as artistic expression of human beings.

Students will evaluate and interpret the ways in which people through the ages in different cultures have responded to themselves and the world around them in artistic and cultural creation. Students will also learn to value aesthetic understanding and incorporate these concepts when constructing value judgments.

See pages 40-42 for approved CSU GE-B Pattern, Area C courses.

Completion of General Education Requirements and electives as needed to reach 60 units.

**Total Required Units:** 60.0

## COUNSELING (COU)

### Associate in Arts in Liberal Arts: Communication in the English Language and Critical Thinking

The Associate in Arts in Liberal Arts with an emphasis in Communication in the English Language and Critical Thinking provides students the opportunity to develop knowledge and understanding of the form, content, context, and effectiveness of communication. Students will develop proficiency in oral and written communication in English, examining communication from the rhetorical perspective and practicing reasoning and advocacy, organization, and accuracy. Students will practice the discovery, critical evaluation, and reporting of information, as well as reading, writing, and listening effectively. Students will also will understand logic and its relation to language; elementary inductive and deductive processes, including an understanding of the formal and informal fallacies of language and thought; and the ability to distinguish matters of fact from issues of judgment or opinion. Critical thinking skills and self-understanding through these courses provide a framework for lifelong learning in written and oral communication and offers students a breadth of knowledge that could be focused into single discipline degrees as well as applied to an interdisciplinary degree.

#### Program Learning Outcomes

- Students will comprehend and analyze written and oral information effectively.
- Students will use language as a tool for logical thought, clear and precise expression, and critical evaluation of communication.

#### Career/Transfer Opportunities

The program is intended for students who are considering transfer, but have not decided on a major; students who are required to complete a degree for job promotion; or students who may wish to further their education and are considering a major that is interdisciplinary in focus.

**To earn this degree, students must meet the following requirements:**

- Completion of 60 degree applicable units with an overall GPA of 2.0.
- Completion of a minimum of 18 semester units in the major with a grade of C (or P) or better.
- Completion of the Associate in Arts graduation requirements.

**Select a minimum of 18 units from the approved CSU GE-B Area A. Include courses from at least two different disciplines.**

These courses emphasize the content of communication as well as the form and should provide an understanding of the psychological basis and social significance of communication. Students will be able to assess communication as the process of human symbolic interaction. Students will also develop skills in the areas of reasoning and advocacy, organization, accuracy, reading and listening effectively. Students will be able to integrate important concepts of critical thinking as related to the development of analysis, critical evaluation, to reason inductively and deductively that will enable them to make important decisions regarding their own lives and society at large.

See pages 40-42 for approved CSU GE-B Pattern, Area A courses.

Completion of General Education Requirements and electives as needed to reach 60 units.

**Total Required Units:** 60.0

## COUNSELING (COU)

### Associate in Arts in Liberal Arts: Natural Science and Mathematics

The Associate in Arts in Liberal Arts with an emphasis in Natural Science and Mathematics provides students the opportunity to develop knowledge of scientific theories, concepts, and data about both living and nonliving systems. Students will achieve an understanding and appreciation of scientific principles and the scientific method, as well as the potential limits of scientific endeavors and the value systems and ethics associated with human inquiry. In addition, students shall develop skills and understanding beyond the level of intermediate algebra. Students will not just practice computational skills, but will be able to explain and apply basic mathematical concepts and will be able to solve problems through quantitative reasoning. Critical thinking skills and self-understanding through these courses provide a framework for lifelong learning in the math and science areas and offers students a breadth of knowledge that could be focused into single discipline degrees as well as applied towards an interdisciplinary degree.

#### Program Learning Outcomes

- Students will solve problems using quantitative information in verbal, numeric, graphic, and symbolic form.
- Students will apply scientific and/or mathematical processes and theories to address real-world applications.
- Students will understand how findings and ideas in science can be applied to explain phenomena and events and influence the larger society.

#### Career/Transfer Opportunities

The program is intended for students who are considering transfer, but have not decided on a major; students who are required to complete a degree for job promotion; or students who may wish to further their education and are considering a major that is interdisciplinary in focus.

**To earn this degree, students must meet the following requirements:**

- Completion of 60 degree applicable units with an overall GPA of 2.0.
- Completion of a minimum of 18 semester units in the major with a grade of C (or P) or better.
- Completion of the Associate in Arts graduation requirements.

Select a minimum of 18 units from the approved CSU GE-B Area B list. At least one mathematics course and one science course must be included. These courses emphasize the natural sciences which examine the physical universe, its life forms and its natural phenomena. Courses in math emphasize the development of mathematical and quantitative reasoning skills beyond the level of intermediate algebra. Students will be able to demonstrate an understanding of the methodologies of science as investigative tools. Students will also examine the influence that the acquisition of scientific knowledge has on the development of the world's civilizations.

See pages 40-42 for approved CSU GE-B Pattern, Area B courses.

Completion of General Education Requirements and electives as needed to reach 60 units.

**Total Required Units:** 60.0

## COUNSELING (COU)

### Associate in Arts in Liberal Arts: Social and Behavioral Sciences

The Associate in Arts in Liberal Arts with an emphasis in Social and Behavioral Sciences provides students with a broad perspective on human behavior. It is designed to stimulate appreciation for, and understanding of, values, ideas, and artifacts of culture and society. Critical thinking skills and self-understanding through these courses provide a framework for lifelong study in liberal arts. Successful completion of the curriculum in Social and Behavioral Sciences offers students a breadth of knowledge that could be focused into single discipline degrees as well as applied to an interdisciplinary degree

#### Program Learning Outcomes

- Students will evaluate and critique the interactions between individuals and the societies and/or social subgroups of which they are a part.
- Students will think critically about ways people have acted in response to their societies.
- Students will apply the principles, methodologies, value systems, ethics, and thought processes employed in human inquiry.

#### Career/Transfer Opportunities

The program is intended for students who are considering transfer, but have not decided on a major; students who are required to complete a degree for job promotion; or students who may wish to further their education and are considering a major that is interdisciplinary in focus.

**To earn this degree, students must meet the following requirements:**

- Completion of 60 degree applicable units with an overall GPA of 2.0.
- Completion of a minimum of 18 semester units in the major with a grade of C (or P) or better.
- Completion of the Associate in Arts graduation requirements.

Select a minimum of 18 units from the approved CSU GE-B Area D list. Include courses from at least two different disciplines. These courses emphasize the perspectives, concepts, theories, and methodologies of the disciplines typically found in the vast variety of disciplines that comprise study in the Social and Behavioral Sciences.

Students will study about themselves and others as members of a larger society. Topics and discussion to stimulate critical thinking about ways people have acted in response to their societies will allow students to evaluate how societies and social subgroups operate.

See pages 40-42 for approved CSU GE-B Pattern, Area D courses.

Completion of General Education Requirements and electives as needed to reach 60 units.

**Total Required Units:** 60.0

## COUNSELING (COU)

### Certificate of Achievement in Transfer Studies - CSU GE-B

The Certificate of Achievement in Transfer Studies – CSU GE-B is designed to provide students the knowledge, skills, experiences, and perspectives that will enable them to expand their capacities to take part in a wide range of human interests and activities; to confront personal, cultural, moral, and social problems

that are an inevitable part of human life; and to cultivate both the requisite skills and enthusiasm for lifelong learning. These courses offer the opportunity for students to develop knowledge of, or skills related to, quantitative reasoning, information literacy, intellectual inquiry, global awareness and understanding, human diversity, civic engagement, communication competence, ethical decision-making, environmental systems, technology, lifelong learning and self-development, and physical and emotional health throughout a lifetime. The variety of different subjects provide a well-rounded or "liberal" education and develop the knowledge, skills, and attitudes that together help create an educated person.

#### Program Learning Outcomes

- Students will engage in meaningful verbal and nonverbal expression through written, oral, signed, and/or artistic communication of ideas and concepts.
- Students will apply principles of scientific and critical inquiry, including quantitative and qualitative techniques, to the analysis of relevant questions, problems, or issues.
- Students will analyze the interconnectivity between social, political, economic, and ecological systems to effectively live and work in diverse communities.
- Students will apply techniques for physical and mental development that include the application of ethical principles to personal, academic, and professional matters.

#### Career/Transfer Opportunities

This certificate is designed for students who intend to complete university general education requirements prior to transfer to a California State University (CSU) campus. Completion of the California State University General Education – Breadth (CSU GE-B) will permit a student to transfer from a California Community College to a CSU campus generally without the need, after transfer, to take additional lower-division, general education courses to satisfy campus general education requirements.

**To earn this certificate, students must complete the minimum required courses with a grade of C (or P) or better.**

See CSU GE-B course listing on pages 40-42

**Total Required Units:** 39.0 - 48.0

## COUNSELING (COU)

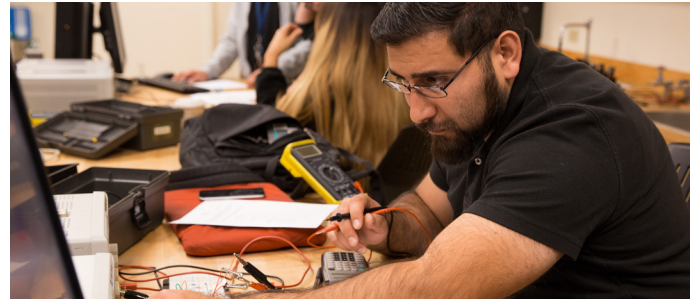
### Certificate of Achievement in Transfer Studies - IGETC

The Certificate of Achievement in Transfer Studies – IGETC is designed to provide students the knowledge, skills, experiences, and perspectives that will enable them to expand their capacities to take part in a wide range of human interests and activities; to confront personal, cultural, moral, and social problems that are an inevitable part of human life; and to cultivate both the requisite skills and enthusiasm for lifelong learning. These courses offer the opportunity for students to develop knowledge of, or skills related to, quantitative reasoning, information literacy, intellectual inquiry, global awareness and understanding, human diversity, civic engagement, communication competence, ethical decision-making, environmental systems, technology, lifelong learning and self-development, and physical and emotional health throughout a lifetime. The variety of different subjects provide a well-rounded or "liberal" education and develop the knowledge, skills, and attitudes that together help create an educated person.

#### Program Learning Outcomes

- Students will engage in meaningful verbal and non-verbal expression through written, oral, signed, and/or artistic communication of ideas and concepts.

- Students will apply principles of scientific and critical inquiry, including quantitative and qualitative techniques, to the analysis of relevant questions, problems, or issues.
- Students will evaluate and interpret the ways in which people through the ages in different cultures have responded to themselves and the world around them in artistic and cultural creation.
- Students will apply techniques for physical and mental development that include the application of ethical principles to personal, academic, and professional matters.



*Note: Completing courses that satisfy CSU's U.S. History, Constitution and American Ideals requirement prior to transfer is highly recommended.*

### Career/Transfer Opportunities

This certificate is designed for those who intend to complete university general education requirements prior to transfer to a California State University (CSU) or University of California (UC) campus. Completion of the Intersegmental General Education Transfer Curriculum (IGETC) will permit a student to transfer from a California Community College to a CSU or UC campus generally without the need, after transfer, to take additional lower-division, general education courses to satisfy campus general education requirements.

**To earn this certificate, students must complete the minimum required courses with a grade of C (or P) or better.**

See IGETC course listing on pages 37-39

**Total Required Units: 34.0 - 43.0**

## ECONOMICS (ECN)

### Associate in Arts in Economics for Transfer (AA-T)

The Associate in Arts in Economics for Transfer (AA-T in Economics) is designed to provide a clear pathway to a CSU institution for students who plan to transfer and complete a CSU major or baccalaureate degree in Economics. California Community College students who are awarded an Associate in Arts in Economics for Transfer (AA-T in Economics) are guaranteed admission with junior standing somewhere in the CSU system and given priority admission consideration to their local CSU institution or to a program that is deemed similar to their community college major. This priority does not guarantee admission to specific majors or institutions.

#### Program Learning Outcomes:

- Students will apply general economic theories and models to describe economic phenomena.
- Students will analyze and make predictions about the impact of government intervention, and changing market conditions on consumer and producer behavior and well-being.
- Students will generate constructive analysis and creative solutions to real world issues, by drawing upon relevant data and utilizing suitable economic theories.

### Career/Transfer Opportunities

Career Opportunities include the following: economist, loan officer, systems analyst, project administrator, research assistant, sales engineer, state policy analyst, statistician, systems analyst, personal banker, insurance agent, stock broker, investment advisor, financial analyst, financial advisor, economic affairs officer, and many more.

**To earn this degree, students must meet the following requirements:**

- Completion of the following major courses with grades of C or better;
- Completion of 60 CSU-transferable semester units with a grade point average of at least 2.0 and;
- Certified completion of either the California State University General Education Breadth pattern (CSU GE-B) or the Intersegmental General Education Transfer Curriculum (IGETC).

#### Core Curriculum Courses Required:

		Units
ECN 001A	Principles of Macroeconomics	4.0
ECN 001B	Principles of Microeconomics	4.0
MAT 009	Integrated Statistics II OR	5.0
MAT 010	Elementary Statistics OR	4.0
MAT 010H	Elementary Statistics - Honors	4.0
MAT 012	Calculus for Business and Social Sciences OR	4.0
MAT 003A	Analytic Geometry and Calculus I	5.0

#### List A - Select one course (3-5 units):

		Units
ACC 001A	Financial Accounting	4.0
ACC 001B	Managerial Accounting	4.0
BUS 021	Introduction to Business Computing	3.0
BUS 078B	Business Communications	3.0
MAT 008	Finite Mathematics	3.0
MAT 003B	Analytic Geometry and Calculus II	5.0

#### List B - Select one course (3-5 units):

		Units
Any course not selected from List A		
ECN 006	The Global Economy	3.0
MAT 004A	Multivariable Calculus	4.0
MAT 004C	Linear Algebra	4.0

#### Units Required for the Major:

**22.0-26.0**  
Completion of General Education Requirements and electives as needed to reach 60 units.

**Total Required Units: 60.0**

## ENGINEERING (EGR)

### Associate in Science in Engineering

Engineers design and create the future. They use the principles of math, science, and engineering to design and build new products or to develop large-scale systems such as a transportation network or a water treatment plant. Engineering problems usually involve teams of people, so engineers must work well with others and communicate effectively.

The Associate in Science in Engineering is designed to prepare students for transfer to engineering programs at four-year universities. Upon completion of the the Associate in Science in Engineering, students will possess the knowledge and skills required for upper-division coursework in Engineering.

#### Program Learning Outcomes

- Students will analyze and interpret experimental results and/or data to make engineering problem decisions.
- Students will use math, science, and engineering concepts to describe, formulate, and solve engineering problems.