

## **CTE MQ Equivalency General Education Equivalency Examples**

### **General Education and Major Preparation Requirements for an Associate's Degree**

In a traditional Associate or Arts or Associate of Science degree, a student must complete a minimum of 60 semester (90 quarter) units. Of the total units, at least 18 semester (27 quarter) units of general education coursework is required in addition to meeting competency requirements in written expression and mathematics and at least 18 semester (27 quarter) units of major preparation (Title 5 §55063). The eighteen units of general education is expected in the follow areas (Title 5 §55063 (b)(1)):

- A. Natural Sciences (minimum 3 units)
- B. Social and Behavioral Sciences (minimum 3 units)
- C. Humanities (minimum 3 units)
- D.1. Language and Rationality: English Composition (minimum 3 units)
- D.2. Language and Rationality: Communication and Analytical Thinking (min. 3 units)
- Three additional units taken in any area
- Ethnic Studies must be addressed (See guidance for Areas B & C) (Title 5 §55063 (b)(2))

### **Competencies: Written Expression and Mathematics**

Written Expression: competence in written expression shall be demonstrated by obtaining a satisfactory grade in an English course at the level of the course typically known as Freshman Composition. Satisfactory completion of an English course at the level of Freshman Composition shall satisfy both this competency requirement and the coursework requirement set forth in subdivision (b)(1)(D)(i) of [Title 5 §55063].

Mathematics: competence in mathematics shall be demonstrated by obtaining a satisfactory grade in a mathematics course at the level of the course typically known as Intermediate Algebra (either Intermediate Algebra or another mathematics course at the same level, with the same rigor and with Elementary Algebra as a prerequisite, approved locally). Satisfactory completion of a mathematics course at the level of Intermediate Algebra shall satisfy both this competency requirement and the coursework requirement set forth in subdivision (b)(1)(D)(ii) of [Title 5 §55063].

### **Need for Equivalency**

Many disciplines have a demonstrated need for instructors while industry has well-qualified employees who are potential instructors but who have not earned an Associates degree. **Work on this**

### **Purpose of General Education**

The general education component of a degree is expected to produce a citizen who can interact effectively with the world around them based on critical thinking and reasoning, sound oral and written communication, an applied understanding of other peoples and cultures, and applied experiences with science and its impact on people. For potential faculty members, general education preparation should also influence a person's approach to teaching and ability to recognize how their discipline interacts with all others and communicate that to students. This crosswalk is intended to help equivalency committees understand the potential for satisfaction of general education elements of a degree through experiential learning, while also helping potential candidates prepare the evidence necessary to demonstrate achievement of general education outcomes through means other than traditional classroom instruction.

### **Purpose of General Education Equivalency Examples**

Equivalency committees of an academic senate are generally responsible for the evaluation of a faculty candidate's qualifications when questions arise regarding minimum qualifications. These same committees are also responsible for making recommendations on approving or rejecting requests for equivalency. Often, for disciplines where the minimum qualification is an associates degree and six years of experience, faculty candidates will have significant discipline experience but lack the more formal academic credentials. This situation is particularly problematic in many career technical education (CTE) disciplines. The purpose of the GE equivalency examples are to provide local equivalency committees with a user-friendly tool when reviewing CTE faculty portfolios for equivalency. It also serves as a framework for human resources to demonstrate compliance with accreditation standards regarding qualifications of faculty. The GE equivalency examples facilitate finding the link between industry-specific artifacts (tangible evidence of competencies) and the competencies associated with each of the four General Education Areas of Title 5, Chapter 6, Subchapter 1, Article 6, 55063.

Faculty have developed GE equivalency examples for many CTE disciplines. Examples that are not discipline-specific are also available. Equivalency committees are encouraged to use the examples in concert with robust conversations with local CTE Faculty experts.

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## GE Equivalency Examples

**A: Natural Sciences:** Courses in the natural sciences are those which examine the physical universe, its life forms, and its natural phenomena. To satisfy the general education requirement in natural sciences, a course shall be designed to help the student develop an appreciation and understanding of the scientific method, and encourage an understanding of the relationships between science and other human activities (Title 5 §55063 (b)(1)(A)). This category would include introductory or integrative courses in astronomy, biology, chemistry, general physical science, geology, meteorology, oceanography, physical geography, physical anthropology, physics and other scientific disciplines.

### **Purpose for Including One Course (3 units) in Natural Sciences for General Education**

- Develop the ability to examine the physical universe, its life forms, and its natural phenomena
- Develop an appreciation of, understanding of, and ability to apply the scientific method
- Develop the ability to understand the relationship between science and other human activities

### **Examples of C-ID approved courses included in Area A Natural Sciences**

AG-AS 104 Introduction to Animal Science  
 ANTH 110 Introduction to Biological Anthropology  
 BIOL 140 Organismal Biology  
 BIOL 190 Cell and Molecular Biology  
 CHEM 100 Chemistry and Society  
 CHEM 102 Introduction to Organic and Biochemistry  
 CHEM 101 Introduction to Chemistry  
 CHEM 140 / PHYS 140 Survey of Chemistry and Physics  
 GEOG 130 Introduction to Weather and Climate  
 GEOL 120 Earth Science / GEOL 121 Earth Science with Lab  
 GEOL 130 Environmental Geology  
 GEOL 100 Physical Geology / GEOL 100 Physical Geology with Lab  
 GEOL 200 Geology of California  
 PHYS 105 Algebra/Trigonometry-Based Physics

### **Examples of evidence to demonstrate competency to the one:**

Note: Industry recognized credentials could demonstrate competency through exams, papers, practicum or other components of the credential process.

<b>Examples of Evidence Establishing Competency to GE Area</b>	
General Equivalency Considerations	<ul style="list-style-type: none"> <li>• Artifact or work product documenting understanding and knowledge of our environment as it relates to specific sector, industry, or civic skills</li> <li>• Artifact or work product documenting a defined purpose, constructed hypothesis/theory/idea, testing of the hypothesis, data collection, data analysis, development of conclusions, and communication of results as it relates to sector, industry, or civic-specific skills</li> <li>• Artifact or work product demonstrating a sector, industry, or civic-based mechanical diagnosis and provision of solutions</li> </ul>

Discipline-Specific Examples: <b>Aviation</b>	Ref: FAR 61.185(2) The aeronautical knowledge areas for a recreational, private, and commercial pilot certificate applicable to the aircraft industry for which flight instructor privileges are sought. <ul style="list-style-type: none"> <li>• Weather theory, weather behavior, and weather hazards</li> <li>• Understanding and application of Newton’s Basic Laws of Motion and Bernoulli’s Principle</li> <li>• Weather services, weather briefings, weather reports, forecasts, charts and multifunction weather displays</li> <li>•</li> </ul>
Discipline-Specific Examples: <b>Automotive Technician</b>	Using service manuals to understand the theory of the systems being diagnosed, follow testing and diagnostic procedures to isolate and repair system defects, and verify the repair resolved the system defect.
Discipline-Specific Examples: <b>TBD</b>	

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## GE Equivalency Examples

**B: Social and Behavioral Sciences:** Courses in the social and behavioral sciences are those which focus on people as members of society. To satisfy the general education requirement in social and behavioral sciences, a course shall be designed to develop an awareness of the method of inquiry used by the social and behavioral sciences. It shall be designed to stimulate critical thinking about the ways people act and have acted in response to their societies and should promote appreciation of how societies and social subgroups operate (Title 5 §55063 (b)(1)(B)). This category would include introductory or integrative survey courses in cultural anthropology, cultural geography, economics, history, political science, psychology, sociology and related disciplines.

### **Purpose for Including One Course (3 units) in Social and Behavioral Sciences for General Education**

- Develop an awareness of the methods of inquiry used by the social and behavioral sciences.
- Stimulate critical thinking about ways people act or have acted in response to their societies
- Promote appreciation of how societies and social subgroups operate
- Promote an understanding and appreciation of ethnic groups (Title 5 §55063 (b)(2) requires a course in Ethnic Studies. It is most likely met through the course/experience/ability counted in Area B or Area C)

### **Examples of C-ID courses included in Area B Social and Behavioral Sciences**

ANTH 150 Introduction to Archaeology (or in Area A?)  
ANTH 120 Introduction to Cultural Anthropology  
ECON 201 Principles of Microeconomics  
ECON 202 Principles of Macroeconomics  
GEOG 120 Introduction to Human Geography  
HIST 150 World History to 1500  
HIST 160 World History since 1500  
HIST 130 United States History to 1877  
HIST 170 Western Civilization I  
HIST 180 Western Civilization II  
HIST 140 United States History since 1865  
POLS 110 Introduction to American Government and Politics  
POLS 130 Introduction to Comparative Government and Politics  
POLS 150 Introduction to Political Science  
POLS 120 Introduction to Political Theory and Thought  
POLS 140 Introduction to International Relations  
PSY 120 Introduction to Abnormal Psychology  
PSY 130 Introduction to Human Sexuality  
PSY 115 Psychology of Personal and Social Adjustment  
PSY 180 Introduction to Lifespan Psychology  
PSY 110 Introductory Psychology  
SOC1 140 Introduction to Gender  
SOC1 160 Introduction to Crime  
SOC1 110 Introduction to Sociology  
SOC1 130 Introduction to Marriage and Family  
SOC1 150 Introduction to Race and Ethnicity  
SOC1 115 Social Problems

**Examples of evidence to demonstrate competency:**

Note: Industry recognized credentials could demonstrate competency through exams, papers, practicum or other components of the credential process.

- Trainings on job sites – sexual harassment trainings; diversity trainings; cultural competency/awareness training; navigation of community and workplace situations using historical knowledge of a field and its relation to society and culture.

	<b>Examples of Evidence Establishing Competency to GE Area</b>
General Equivalency Considerations	<ul style="list-style-type: none"> <li>• Artifact or work product documenting awareness in social or institutional ethics, macro or micro economics, or local politics as it relates to sector, industry, or civic-specific skills</li> <li>• Artifact or work product documenting leadership decisions involving employee development, evaluation, and reprimands as they relate to sector, industry, or civic-specific skills</li> <li>• Artifact or work product documenting active involvement in community advocacy organizations as it relates to sector, industry, or civic-specific skills</li> <li>• Artifact or work product demonstrating completion or delivery of trainings related to sexual harassment, diversity, and cultural competency</li> </ul>
Discipline-Specific Examples: <b>Aviation</b>	<p>Ref: FAR 61.185(2) The aeronautical knowledge areas for a recreational, private, and commercial pilot certificate applicable to the aircraft industry for which flight instructor privileges are sought.</p> <ul style="list-style-type: none"> <li>• Risk management and stress as it relates to aeronautical decision making. This includes crew resource management and single pilot resource management</li> <li>• Aeromedical factors which include health and physiological factors</li> </ul>
Discipline-Specific Examples: <b>Automotive Technician</b>	<ul style="list-style-type: none"> <li>• ASE certification in area C1 Automobile Service Consultant Certification Test because the test contains questions on communications, customer and internal relations, vehicle systems knowledge, sales skills, and shop operations.</li> <li>• A job title of supervisor, manager, or foreman based upon performance of customer service and human resource duties as part of the job.</li> </ul>
Discipline-Specific Examples: <b>TBD</b>	

## GE Equivalency Examples

**C: Humanities:** Courses in the humanities are those which study the cultural activities and artistic expressions of human beings. To satisfy the general education requirement in the humanities, a course shall be designed to help the student develop an awareness of the ways in which people throughout the ages and in different cultures have responded to themselves and the world around them in artistic and cultural creation and help the student develop aesthetic understanding and an ability to make value judgments (Title 5 §55063 (b)(1)(C)). Such courses could include introductory or integrative courses in the arts, foreign languages, literature, philosophy, and religion.

### Purpose for Including One Course (3 units) in Humanities for General Education

- Develop an awareness of the way in which people throughout the ages and in different cultures have responded to themselves and the world around them in artistic and cultural creations.
- Develop or demonstrate aesthetic understanding and an ability to make value judgements.
- Promote an understanding and appreciation of ethnic groups (Title 5 §55063 (b)(2) requires a course in Ethnic Studies. It is most likely met through the course/experience/ability counted in Area B or Area C)

### Examples of courses included in Area C Humanities

- **Embed C-ID Course titles to indicate courses.**
- ARTH 110 Survey of Western Art from Prehistory through the Middle Ages
- ARTH 120 Survey of Western Art from Renaissance to Contemporary
- ARTH 150 Survey of Modern Art
- ARTH 100 Understanding Art
- ARTH 130 Survey of Asian Art
- ENGL 160 Survey of British Literature I
- ENGL 120 Introduction to Literature
- ENGL 135 Survey of American Literature 2
- ENGL 165 Survey of British Literature 2
- ENGL 180 Children's Literature
- ENGL 130 Survey of American Literature 1
- ENGL 145 Survey of World Literature 2
- ENGL 140 Survey of World Literature 1
- PHIL 130 History of Ancient Philosophy
- PHIL 140 History of Modern Philosophy
- PHIL 100 Introduction to Philosophy
- SPAN 110 Elementary Spanish II
- SPAN 220 Spanish for Heritage Speakers I
- SPAN 100 Elementary Spanish I
- THTR 112 Theatre Appreciation
- THTR 111 Introduction to Theatre

### Examples of evidence to demonstrate competency:

Note: Industry recognized credentials could demonstrate competency through exams, papers, practicum or other components of the credential process.

	<b>Examples of Evidence Establishing Competency to GE Area</b>
General Equivalency Considerations	<ul style="list-style-type: none"> <li>• Artifact or work product demonstrating experience working and living in other cultures and with other languages.</li> <li>• Cultural competency certification or production of cultural competency documents</li> <li>• Adaptation to civic and industry cultures and language</li> <li>• Strategic planning</li> </ul>
Discipline-Specific Examples: <b>Aviation</b>	<p>Ref: FAR 61.185(2) The aeronautical knowledge areas for a recreational, private, and commercial pilot certificate applicable to the aircraft industry for which flight instructor privileges are sought.</p> <ul style="list-style-type: none"> <li>• Personal minimums related to risk management</li> </ul>
Discipline-Specific Examples: <b>Automotive Technician</b>	<ul style="list-style-type: none"> <li>• Demonstrated ability to use a scan tool to communicate with a vehicle and decipher hundreds of possible vehicle data PIDs (Parameter IDs) given in the form of acronyms such as TPS (Throttle Position Sensor), ECT (Engine Coolant Temperature) and LTFT (Long Term Fuel Trim).</li> <li>• Demonstrated ability to visually inspect and perform functional tests on emission system components and decipher Vehicle Emission Control Information labels with acronyms such as PCV (Positive Crankcase Ventilation), HO2S (Heated Oxygen Sensor), and PAIR (Pulsed Air Injection Reaction) as a certified smog technician.</li> </ul>
Discipline-Specific Examples: <b>TBD</b>	

## GE Equivalency Examples

**D: Language and Rationality:** Courses in language and rationality are those which develop for the student the principles and applications of language toward logical thought, clear and precise expression and critical evaluation of communication in whatever symbol system the student uses (Title 5 §55063 (b)(1)(D)). Such courses include:

(i) English Composition. Courses fulfilling the written composition requirement shall be designed to include both expository and argumentative writing.

- Students earning an Associate's degree must demonstrate competence in written expression. Traditionally, this competence is demonstrated by obtaining a satisfactory grade in an English course at the level of the course typically known as Freshman Composition. Any other considerations must be equivalent.
- Satisfactory completion of an English course at the level of Freshman Composition shall satisfy both this competency requirement and the coursework requirement set forth in subdivision (b)(1)(D)(i) of [Title 5 §55063].
- If other skills are used to satisfy equivalency to coursework required for competency requirements, then competency requirements shall be considered separately.

(ii) Communication and Analytical Thinking. Courses fulfilling the communication and analytical thinking requirement include oral communication, mathematics, logic, statistics, computer languages and programming, and related disciplines.

- Students earning an Associate's degree must demonstrate competence in mathematics. Traditionally, this competence is demonstrated by obtaining a satisfactory grade in a mathematics course at the level of the course typically known as Intermediate Algebra (either Intermediate Algebra or another mathematics course at the same level, with the same rigor and with Elementary Algebra as a prerequisite, approved locally). Any other considerations must be equivalent.
- Satisfactory completion of a mathematics course at the level of Intermediate Algebra shall satisfy both this competency requirement and the coursework requirement set forth in subdivision (b)(1)(D)(ii) of [Title 5 §55063].
- If other skills are used to satisfy equivalency to coursework required for competency requirements, then competency requirements shall be considered separately.

### Purpose for Including One Course (3 units) in Language and Rationality for General Education

- Develop the principles and applications of language toward logical thought, clear and precise expression and critical evaluation of communication in whatever symbol system the student uses.
- Develop expository and argumentative writing skills (English Composition)
- Develop oral communication and analytical thinking skills (Communication and Analytical Thinking)

### Examples of courses included in Area D Language and Rationality

Embed C-ID Course titles to indicate courses.

### Examples of evidence to demonstrate competency:

Note: Industry recognized credentials could demonstrate competency through exams, papers, practicum or other components of the credential process.

- **Writing:** Writing of manuals, technical writing/reports.
- **Communication:** Communication can be demonstrated through experience in sales.
- **Critical Thinking:** Problem-solving, programming, statistics, assessing data and statistics to draw conclusions

	<b>Examples of Evidence Establishing Competency to GE Area</b>
General Equivalency Considerations	<ul style="list-style-type: none"> <li>• Artifact or work product documenting logical thought in the identification of a work or civic challenge, development of specific solutions, implementation of solutions, and analysis of the outcomes and communication products of the project as they relate to sector, industry, or civic-specific skills</li> <li>• Artifact or work product documenting involvement in the analysis of a work process including a main idea, supporting details, and a final conclusion as it relates to sector, industry, or civic-specific skills</li> <li>• Artifact or work product demonstrating the ability to investigate a topic and compose a well-organized and grammatically correct document with appropriate integration and citation of external source information (English Composition).</li> <li>• Artifact or work product documenting the investigation of a topic or issue including the collection of evidence as well as the supporting arguments of a final position as they relate to sector, industry, or civic-specific skills</li> <li>• Artifact or work product demonstrating mastery of oral communication skills as they relate to sector, industry, or civic-specific skills</li> </ul>
Discipline- Specific Examples: <b>Aviation</b>	Ref: FAR 61.185(2) The aeronautical knowledge areas for a recreational, private, and commercial pilot certificate applicable to the aircraft industry for which flight instructor privileges are sought. <ul style="list-style-type: none"> <li>• English is the international language of aviation and proficiency must be demonstrated in reading, writing, and speech.</li> <li>• Certified flight instructors must receive instruction and complete and exam in the fundamentals of instruction which includes the learning process, elements of effective teaching, student evaluation and testing, course development, lesson planning, and classroom training techniques.</li> </ul>
Discipline- Specific Examples: <b>Automotive            Technology</b>	<ul style="list-style-type: none"> <li>• Artifact demonstrating the ability to decipher information from the customer in either oral or written form regarding their vehicle complaint and use of the information to diagnose the vehicle problem causing the customer's concern and communication of findings either orally or in written form to the service advisor or customer.</li> <li>• Translation of the results of the vehicle diagnosis into written form to either the service advisor or customer in such a way so a layperson can understand the diagnosis and repair of the vehicle (English Composition).</li> <li>• Every aspect of an automotive technician's job revolves around analytic thinking skills. Analytic thinking skills are used to confirm a customer's concern, perform root cause diagnostic procedures, and verify the repair (Communication and Analytical Thinking)</li> </ul>
Discipline- Specific Examples: <b>TBD</b>	