

MATHEMATICS, ASSOCIATE IN SCIENCE DEGREE FOR TRANSFER

Banner Code: 2_AST_MATH

Control Number: 30641

Financial Aid Eligible

By successfully completing the courses for an AS-T in Mathematics at Golden West College, the student will gain a practical and theoretical understanding for future studies in mathematics. Students satisfying requirements for the Associate in Science in Mathematics for Transfer are guaranteed transfer into a bachelor's program in mathematics at a California State University campus. Students intending to transfer to a particular CSU campus or to a university or college that is not part of the California State University system should consult with a counselor when planning to complete the degree to verify that a particular college acknowledges and accepts the AS-T in Mathematics conferred by Golden West College.

Program Level Learning Outcomes

Upon completion of this program, students will be able to:

1. State the definition of derivatives, and compute the derivatives of basic and transcendental functions of one or more variables.
2. Apply concepts of differential and integral calculus of one or more variables to solve problems involving rates, area, volume, and lengths of arcs.
3. State the definition of integrals, and calculate definite and indefinite integrals involving basic and transcendental functions.
4. Graph equations in the rectangular, polar, cylindrical, and spherical coordinate systems, curves defined parametrically, conic sections, vectors, and vector-valued functions.
5. Solve first-order differential equations and compute partial derivatives.
6. Perform matrix operations, eigenvalue and eigenvector computations, and applications.

Associate Degree for Transfer Graduation Requirements

Associate Degrees for Transfer require students to meet the following requirements:

- Completion of 60 semester units or 90 quarter units of degree-applicable courses,
- Minimum overall grade point average of 2.0,
- Minimum grade of "C" (or "P") for each course in the major, and
- Completion of IGETC and/or CSU GE-Breadth.

Students should consult a GWC counselor in order to select the best pathway to meet their educational goals. For students who intend to transfer, the choice of general education will be specific to both their major and transfer institution.

Course	Title	Units
Required Courses		
MATH G180	Calculus 1	4

Course	Title	Units
MATH G185	Calculus 2	4
MATH G280	Calculus 3	4
List A		
<i>Select one of the following:</i>		4-5
MATH G235	Applied Linear Algebra	4
MATH G285	Introduction to Linear Algebra and Differential Equations	5
List B		
<i>Select one of the following:</i>		4
Any course from List A not used		
PHYS G185	Calculus Based Physics: Mechanics	4
CS G175	C++ Programming 1	3
MATH G160	Introduction To Statistics	4
Major Total		20-21
GE Pattern (CSU GE-Breadth or IGETC)		37-39
Total units that may be double-counted		3-7
Transferable Electives (as needed to reach 60 units)		0-7
Total Units		60

Recommended Program Sequence

These sequences are general course maps for students to finish all major and general education requirements for two-year completion of degrees, completion of short-term certificates, and/or fulfillment of transfer requirements. However, this may not be an appropriate path for all students. The two-year sequence is based on English and Math placement and meeting other course prerequisites. **Students are advised to meet with a GWC Counselor to review course selections and sequences to ensure that completion of this program will meet a student's transfer and career goals.**

Year 1:

Course	Title	Units
Semester 1		
MATH G180	Calculus 1	4
ENGL G100	Freshman Composition [^]	4
Area A1: Oral Communication course		3
Area E: Lifelong Learning & Self-Development course		3
<i>Units</i>		<i>14</i>

Course	Title	Units
Semester 2		
MATH G185	Calculus 2	4
Area A3: Critical Thinking course		3-4
HIST G170	History Of The United States To 1876 (Area C2: Humanities course)	3
or HIST G175 History of the United States Since 1876		
Area C1: Arts course		3
<i>Units</i>		<i>13-14</i>

Year 2:

Course	Title	Units
Semester 3		
MATH G280	Calculus 3	4

Course	Title	Units
Area B2: Life Science course (with or without lab) *		3-4
Area D: Social & Behavioral Science course		3
<i>Select one of the following:</i>		4-5
MATH G235	Applied Linear Algebra	4
MATH G285	Introduction to Linear Algebra and Differential Equations	5
<i>Units</i>		14-16

Course	Title	Units
Semester 4		
Area B1: Physical Science course (with or without lab) *		3-4
PSCI G180	American Government (Area D: Social & Behavioral Science course)	3
or PSCI G181	American Government: The Politics of Race and Ethnicity	
Area C: Arts & Humanities course		3
Area F: Ethnic Studies course		3
<i>Select one of the following NOT already taken:</i>		4
MATH G235	Applied Linear Algebra	4
CS G175	C++ Programming 1	3
PHYS G185	Calculus Based Physics: Mechanics	4
MATH G160	Introduction To Statistics	4
<i>Units</i>		16-17
Total minimum units required		60

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Program sequence may not be recommended for students who self-place into ENGL G100S. Students should see a Counselor for appropriate advisement.

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Either B1 or B2 must include a lab.