

# MATHEMATICS (For Transfer)

## DEGREES, CERTIFICATES AND AWARDS

Associate in Science Degree in Mathematics for Transfer (AS-T)

### DESCRIPTION

Mathematics, one of the oldest disciplines, is the study of order, structure, and form for the sciences and technology. Areas of mathematics include arithmetic, algebra, geometry, calculus, and various other theoretical and applied subjects. Mathematics is the foundation for many fields of study, including biological, physical, computer, behavioral, and social sciences, as well as engineering. Students may take mathematics courses to prepare for a mathematics major, to meet prerequisites in related disciplines, or to fulfill general education requirements.

The Associate in Science for Transfer (AS-T) is intended for students who plan to complete a bachelor's degree in a similar major at a CSU campus. Students completing this degree (AS-T) are guaranteed admission to the CSU system, but not to a particular campus or major.

### PROGRAM LEARNING OUTCOMES

1. Students will use mathematical reasoning to solve problems and a generalized problem solving process to work word problems.
2. Students will learn mathematics through modeling real-world situations.
3. Students will use appropriate technology to enhance their mathematical thinking and understanding, solve mathematical problems, and judge the reasonableness of their results.

### ASSOCIATE DEGREE PROGRAM ( For Transfer)

The Associate in Arts for Transfer (AA-T) or the Associate in Science for Transfer (AS-T) degree is intended for students who plan to complete a bachelor's degree in a similar major at a CSU campus. Students completing these degrees (AA-T or AS-T) are guaranteed admission to the CSU system, but not to a particular campus or major. In order to earn one of these degrees, students must complete 60 semester units of CSU transferable coursework with a minimum GPA of 2.0. Students transferring to a CSU campus that does accept the AA-T or AS-T will be required to complete no more than 60 units after transfer to earn a bachelor's degree (unless the major is a designated "high-unit" major). This degree may not be the best option for students intending to transfer to a particular CSU campus or to university or college that is not part of the CSU system. Students should consult with a counselor when planning to complete this degree for more information on university admission and transfer requirements.

### TRANSFER PREPARATION

Courses that fulfill major requirements for an associate degree at Imperial Valley College may not be the same as those required for completing the major at a transfer institution offering a bachelor's degree. Students who plan to transfer to a four-year college or university should schedule an appointment with an IVC Counselor to develop a student education plan (SEP) before beginning their program.

#### Transfer Resources:

[www.ASSIST.org](http://www.ASSIST.org) – CSU and UC Articulation Agreements and Majors Search Engine

[www.CSUMentor.edu](http://www.CSUMentor.edu) – CSU System Information

[www.universityofcalifornia.edu/admissions/index.html](http://www.universityofcalifornia.edu/admissions/index.html) - UC System Information

[www.aiccu.edu](http://www.aiccu.edu) – California Independent Colleges and Universities, Association of

<http://wiche.edu/wue> - Western Undergraduate Exchange Programs

### CAREER OPPORTUNITIES

Virtually all two-year career programs in business or technology fields also require a solid foundation in mathematics. Many BA/BS level careers require extensive background in Mathematics.

- Auditor
- Actuary
- Appraiser
- Assessor
- Biology/Agriculture
- Budget Analyst
- Business/Economics
- Casualty Rater
- Chemistry
- Controller
- Education
- Engineer
- Engineering Analyst
- Finance Director
- Financial Analyst
- Industry
- Investment Analyst
- Loan Officer
- Marketing/Advertising
- Mathematician
- Mathematics
- Numerical Analyst
- Operations Analyst
- Opinion Polling
- Physical Science
- Public Health
- Sociology
- Statistician
- Systems Analyst
- Tax Collector
- Teacher
- Technical Writer

### FINANCIAL AID

Paying for the cost of a college education requires a partnership among parents, students and the college. As the cost of higher education continues to rise we want you to know that IVC offers a full array of financial aid programs – grants, work study, scholarships, and fee waivers (we do not participate in the federal loan programs). These programs are available to both full and part time students who are seeking a degree or certificate. For those who qualify, financial aid is available to help with tuition, fees, books and supplies, food, housing, transportation, and childcare. Please log onto our website for additional information: [www.imperial.edu/students/financial-aid-and-scholarships/](http://www.imperial.edu/students/financial-aid-and-scholarships/)

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## ASSOCIATE DEGREE PROGRAM

### MATHEMATICS

Associate in Science Degree in Mathematics for Transfer (AS-T) – 18.0-19.0 units

ALL COURSES FOR THIS MAJOR MUST BE COMPLETED WITH A MINIMUM GRADE OF "C" OR BETTER.

### REQUIREMENTS FOR THE DEGREE

- I. **Units/GPA** – Must complete 60 CSU transferable semester units with a minimum grade point average (GPA) of at least 2.0 in all CSU transferable coursework. *NOTE: While a minimum of 2.0 is required for admission, some institutions and majors may require a higher GPA. Please consult with a counselor for more information.*
- II. **General Education** – Must complete one of the following general education transfer patterns:
  - A. California State University General Education Breadth Pattern (CSU GE-B) – 39 units minimum
  - B. Intersegmental General Education Transfer Curriculum (IGETC) – 37 units minimum
- III. **Eighteen to Nineteen (18-19) units required for the major.**  
**Required for the Major (12.0 units)**

|      |     |                                   |     |
|------|-----|-----------------------------------|-----|
| MATH | 192 | Analytic Geometry and Calculus I  | 4.0 |
| MATH | 194 | Analytic Geometry and Calculus II | 4.0 |
| MATH | 210 | Multivariable Calculus            | 4.0 |

**List A: Select one course (3.0 units)** 3.0

|      |     |  |
|------|-----|--|
| MATH | 220 | Elementary Differential Equations (3.0)                |
| MATH | 230 | Introduction to Linear Algebra with Applications (3.0) |

**List B: Select one course (3.0-4.0 units)** 3.0-4.0

Any List A course not already used.

|      |     |   |
|------|-----|---|
| CIS  | 210 | Programming in C++ (3.0)                                  |
| CS   | 221 | Introduction to Object-Oriented Programming in Java (3.0) |
| CS   | 231 | Introduction to Data Structures (3.0)                     |
| MATH | 119 | Elementary Statistics (4.0)                               |
| MATH | 240 | Discrete Mathematics (3.0)                                |
| PHYS | 200 | General Physics I (4.0)                                   |

|  |             |
|--|-------------|
| Total Major Units  | 18.0-19.0   |
| CSU GE-B or IGETC Pattern                                | 37.0-39.0   |
| Electives (as needed to reach 60 CSU transferable units) |             |
| <b>Total Maximum Units:</b>                              | <b>60.0</b> |