# MATHEMATICS, ASSOCIATE IN SCIENCE DEGREE FOR TRANSFER (AS-T)

**Banner Code:** 1_AST_MATH
**Financial Aid Eligible**

Students graduating with an Associate in Science in Mathematics for Transfer Degree are well positioned to complete a Bachelor's Degree in a similar major within the California State University system with 60 units of upper-division coursework. Students who complete the Mathematics AS-T degree are guaranteed admission to the CSU system, but not to a particular campus or major. Students must maintain a minimum grade point average (GPA) of at least 2.0 in all CSU-transferable coursework. While a minimum 2.0 is required for CSU admission, some majors may require a higher GPA. Please consult a counselor for more information.

## Program Outcome

Students will be eligible and prepared for admission (SB 1440 and Education Code 66746) to California State University system schools.

## Associate Degree for Transfer Requirements

The following is required for all AA-T or AS-T degrees:

1. Minimum of 60 CSU-transferable semester units.
2. Minimum GPA of at least 2.0 in all CSU transferable coursework. While a minimum of 2.0 is required for admission, some majors require a higher GPA. Consult with a counselor for more information.
3. Completion of a minimum of 18-semester units in the major as detailed in the Degree and Certificate section of this catalog. All courses in the major must be completed with a grade of C (or "P") or better.
4. Certified completion of the California State University General Education-Breadth pattern (CSU General Education Breadth — Option 2 (https://catalog.cccd.edu/orange-coast/general-education-patterns/associate-degree-general-education-option-2/)) OR the Intersegmental General Education Transfer Curriculum (IGETC — Option 3 (https://catalog.cccd.edu/orange-coast/general-education-patterns/associate-degree-general-education-option-3/)).
5. A minimum of 12 units in residence within the Coast Colleges (Orange Coast College, Golden West College and/or Coastline College).

| Course | Title | Units |
|---|---|---|
| **Required Courses** | | |
| *Core Courses* | | |
| MATH A180 | Calculus 1 | 4 |
| or MATH A180H | Calculus 1 Honors | |
| MATH A185 | Calculus 2 | 4 |
| or MATH A185H | Calculus 2 Honors | |
| MATH A280 | Calculus 3 | 4-5 |
| or MATH A280H | Calculus 3 Honors | |
| *List A* | | |
| MATH A235 | Applied Linear Algebra | 3-5 |
| or MATH A285 | Introduction to Linear Algebra and Differential Equations | |
| or MATH A285H | Introduction to Linear Algebra and Differential Equations Honors | |
| *List B* | | |
| Select one of the following: | | 3-5 |
| Any course not used in List A | | |
| CS A150 | C++ Programming Language 1 | |
| CS A170 | Java Programming 1 | |
| MATH A160 | Introduction to Statistics | |
| MATH A230 | Introduction to Discrete Mathematics | |
| PHYS A185 | Calculus Based Physics: Mechanics | |
| or PHYS A185H | Calculus-Based Physics: Mechanics Honors | |
| Program Major Units | | 18-23 |
| CSU or IGETC for CSU | | 37-39 |
| Transferable electives as needed to satisfy unit requirement | | Varies |
| Total Units | | 60 |

## Program Sequence - CSU

These sequences at Orange Coast College are general course curriculum maps for students to finish all major and general education requirements for two-year completion of degrees, and/or fulfillment of transfer requirements. The course sequence may include course prerequisites and other placement requirements. **Students are advised to meet with an Orange Coast College Counselor to review course selections and sequences to ensure that completion of this program will meet a student's transfer and career goals.**

| Course | Title | Units |
|---|---|---|
| **Year 1** | | |
| **Semester 1** | | |
| MATH A180 | Calculus 1 | 4 |
| or MATH A180H | or Calculus 1 Honors | |
| CSU GE AREA A2- CHOOSE ONE | | 3 |
| CSU GE AREA C1- CHOOSE ONE | | 3 |
| CSU GE AREA C1 or C2- CHOOSE ONE | | 3 |
| CSU GE AREA D- CHOOSE ONE | | 3 |
| | **Units** | **16** |
| **Semester 2** | | |
| MATH A185 | Calculus 2 | 4 |
| or MATH A185H | or Calculus 2 Honors | |
| HIST A170 | History of the United States to 1876 [1] | 3 |
| or HIST A170H | or History of the United States to 1876 Honors | |
| or HIST A175 | or History of the United States Since 1876 | |
| or HIST A175H | or History of the United States Since 1876 Honors | |
| CSU GE AREA A3- CHOOSE ONE | | 3-4 |
| CSU GE AREA B1 (with lab)- CHOOSE ONE [2] | | 4 |
| | **Units** | **14-15** |

| Course | Title | Units |
|---|---|---|
| **Year 2** | | |
| **Semester 1** | | |
| MATH A280<br>or MATH A280H | Calculus 3<br>or Calculus 3 Honors | 4-5 |
| PSCI A180<br>or PSCI A180H | American Government [1]<br>or American Government Honors | 3 |
| CSU GE AREA A1- CHOOSE ONE | | 3 |
| ELECTIVE (UC TRANSFERABLE) [3] | | 3 |
| ADT LIST A COURSE- CHOOSE ONE | | 3-5 |
| MATH A235<br>or MATH A285<br>or<br>MATH A285H | Applied Linear Algebra<br>or Introduction to Linear Algebra and Differential Equations<br>or Introduction to Linear Algebra and Differential Equations Honors | |
| | **Units** | **16-19** |
| **Semester 2** | | |
| CSU GE AREA B2 (no lab)- CHOOSE ONE [2] | | 3 |
| CSU GE AREA E- CHOOSE ONE | | 3 |
| CSU GE AREA F- CHOOSE ONE | | 3 |
| ELECTIVE (CSU TRANSFERABLE) [3] | | 2 |
| ADT LIST B COURSE- CHOOSE ONE | | 3-5 |
| CS A150<br>or CS A170<br>or MATH A160<br>or MATH A230<br>or PHYS A185<br>or<br>PHYS A185H | C++ Programming Language 1<br>or Java Programming 1<br>or Introduction to Statistics<br>or Introduction to Discrete Mathematics<br><br>or Calculus Based Physics: Mechanics<br>or Calculus-Based Physics: Mechanics Honors | |
| | **Units** | **14-16** |
| | **Total Units** | **60-66** |

[1] American Ideals Requirement - CSU Graduation Requirement
[2] Lab can be taken with B1 or B2
[3] VARIES TO REACH MINIMUM 60 TRANSFERABLE UNITS

# Program Sequence - IGETC

These sequences at Orange Coast College are general course curriculum maps for students to finish all major and general education requirements for two-year completion of degrees, and/or fulfillment of transfer requirements. The course sequence may include course prerequisites and other placement requirements. **Students are advised to meet with an Orange Coast College Counselor to review course selections and sequences to ensure that completion of this program will meet a student's transfer and career goals.**

| Course | Title | Units |
|---|---|---|
| **Year 1** | | |
| **Semester 1** | | |
| MATH A180<br>or MATH A180H | Calculus 1<br>or Calculus 1 Honors | 4 |
| IGETC GE AREA 1A- CHOOSE ONE | | 3 |
| IGETC GE AREA 3A- CHOOSE ONE | | 3 |
| IGETC GE AREA 4- CHOOSE ONE | | 3 |
| | **Units** | **13** |
| **Semester 2** | | |
| MATH A185<br>or MATH A185H | Calculus 2<br>or Calculus 2 Honors | 4 |
| HIST A170<br>or HIST A170H<br>or HIST A175<br>or HIST A175H | History of the United States to 1876 [1]<br>or History of the United States to 1876 Honors<br>or History of the United States Since 1876<br>or History of the United States Since 1876 Honors | 3 |
| IGETC GE AREA 1B- CHOOSE ONE | | 3-4 |
| IGETC GE AREA 4- CHOOSE ONE | | 3 |
| IGETC GE AREA 5B (no lab)- CHOOSE ONE [2] | | 3 |
| | **Units** | **16-17** |
| **Year 2** | | |
| **Semester 1** | | |
| MATH A280<br>or MATH A280H | Calculus 3<br>or Calculus 3 Honors | 4-5 |
| PSCI A180<br>or PSCI A180H | American Government [4]<br>or American Government Honors | 3 |
| IGETC GE AREA 1C- CHOOSE ONE or ELECTIVE (UC TRANSFERABLE) [5] | | 3 |
| IGETC GE AREA 3A OR 3B- CHOOSE ONE | | 3 |
| ADT LIST A COURSE- CHOOSE ONE | | 3-5 |
| MATH A235<br>or MATH A285<br>or<br>MATH A285H | Applied Linear Algebra<br>or Introduction to Linear Algebra and Differential Equations<br>or Introduction to Linear Algebra and Differential Equations Honors | |
| | **Units** | **16-19** |
| **Semester 2** | | |
| ELECTIVE (UC TRANSFERABLE) [3] | | 5 |
| IGETC GE AREA 5A (with lab)- CHOOSE ONE [2] | | 4 |
| LOTE: Foreign Language or ELECTIVE (UC TRANSFERABLE) [6] | | 3-5 |
| ADT LIST B COURSE- CHOOSE ONE | | 3-5 |
| CS A150<br>or CS A170<br>or MATH A160<br>or MATH A230<br>or PHYS A185<br>or<br>PHYS A185H | C++ Programming Language 1<br>or Java Programming 1<br>or Introduction to Statistics<br>or Introduction to Discrete Mathematics<br><br>or Calculus Based Physics: Mechanics<br>or Calculus-Based Physics: Mechanics Honors | |
| | **Units** | **15-19** |
| | **Total Units** | **60-68** |

[1] American Ideals Requirement - IGETC GE AREA 3B and CSU Graduation Requirement OR take another course from IGETC GE AREA 3B
[2] Lab can be taken with 5A or 5B
[3] VARIES TO REACH MINIMUM 60 TRANSFERABLE UNITS
[4] American Ideals Requirement - IGETC GE AREA 4 and CSU Graduation Requirement OR take another course from IGETC GE AREA 4
[5] IGETC GE Area 1C - CSU Requirement
[6] LOTE Requirement for UC only. If met LOTE through HS then take elective units to meet minimum 60 transferable units