# COMPUTER SCIENCE, ASSOCIATE IN SCIENCE FOR TRANSFER

The Associate in Science in Computer Science for Transfer degree (AS-T in Computer Science) provides students with sufficient understanding of computer science concepts, skills, and applications to attain upper-division status in computer science at a California State University, majoring in computer science, software engineering, or game programming. Successful completion of the Associate in Science in Computer Science for Transfer degree (AS-T in Computer Science) guarantees the student acceptance to a California State University (but does not guarantee acceptance to a particular campus or major) to pursue a baccalaureate degree, in preparation to pursue a career in the field of computer science. Students must complete the Associate Degree for Transfer requirements to earn the AS-T degree.

## Learning Outcomes

Upon successful completion of the program, students will be able to:

- Design, implement, test, and debug a program using structured and object-oriented design principles.
- Write programs that use data structures such as arrays, records, strings, linked lists, stacks, queues, trees, and hash tables.
- Write programs in assembly language.
- Use formal tools of symbolic logic to model real-life situations, including those arising in computing contexts.

## Associate in Science for Transfer Degree Major Requirements

| Code | Title | Units |
|---|---|---|
| **Required Core** | | |
| CSIS 10A | Programming Methods I: Java | 4 |
| CSIS 10B | Programming Methods II: Java | 4 |
| CSIS 11 | Computer Architecture and Organization | 3 |
| CSIS 12 | Discrete Structures | 3 |
| MATH 20A | Calculus with Analytic Geometry I | 4 |
| MATH 20B | Calculus with Analytic Geometry II | 4 |
| PHYS 3A | Science and Engineering Physics I | 4 |
| PHYS 3B | Science and Engineering Physics II | 4 |
| **TOTAL MAJOR UNITS** | | **30** |
| **Additional Requirements** | | **30** |
| Complete IGETC pattern and electives, if needed, for a total of 60 transferable units. | | |
| **Total Units** | | **60** |

Please refer to the graduation requirements section of the Catalog for information about degree and certificate requirements including Reading and Writing, Mathematics, Information Competency, and General Education requirements.

The model sequence of coursework below is one pathway for students to complete the program. The information below is not an official educational plan. An MPC Counselor can assist you with creating a personalized education plan based on your academic, career, and personal goals. Visit MPC's Counseling website for more information about Counseling and up-to-date program requirements.

## Suggested 2-Year Course Sequence

**Year 1**

| Fall | | Units |
|---|---|---|
| ENGL 1A or ENGL 1AE | College Composition or College Composition: Enhanced | 3 |
| MATH 20A | Calculus with Analytic Geometry I | 4 |
| CSIS 10A | Programming Methods I: Java | 4 |
| IGETC Area 4 (US-1 Course Recommended) | | 3 |
| | **Units** | **14** |

| Spring | | |
|---|---|---|
| ENGL 2 | Argumentative Writing and Critical Thinking | 3 |
| MATH 20B | Calculus with Analytic Geometry II | 4 |
| CSIS 12 | Discrete Structures | 3 |
| IGETC Area 4 (US-2 & 3 Course Recommended) | | 3 |
| IGETC Area 5B | | 3 |
| | **Units** | **16** |

| Summer | | |
|---|---|---|
| IGETC Area 6 (UC Requirement) | | 0-5 |
| SPCH 1 or SPCH 2 (CSU Requirement) | | 0-3 |
| | **Units** | **0-8** |

**Year 2**

| Fall | | |
|---|---|---|
| MATH 20C | Calculus of Several Variables | 4 |
| PHYS 3A | Science and Engineering Physics I | 4 |
| IGETC Area 3A | | 3 |
| IGETC Area 3B | | 3 |
| | **Units** | **14** |

| Spring | | |
|---|---|---|
| CSIS 10B | Programming Methods II: Java | 4 |
| CSIS 11 | Computer Architecture and Organization | 3 |
| PHYS 3B | Science and Engineering Physics II | 4 |
| IGETC Area 3A or 3B | | 3 |
| IGETC Area 4 | | 3 |
| | **Units** | **17** |
| | **Total Units** | **61-69** |

MPC transfer programs are designed to enable students to complete lower-division requirements in preparation for transfer to a baccalaureate-granting institution.

The Student Transfer Achievement Reform Act (Senate Bill 1440, codified in California Education Code sections 66746-66749) guarantees admission to California State University (CSU) system for any community college student who earns an Associate Degree for Transfer (ADT), although not to a particular campus or major. Upon transferring to a CSU campus that accepts the Associate in Arts for Transfer (AA-T) or Associate in Science for Transfer (AS-T), students will be required to complete no more than 60 upper-division units to earn a bachelor's degree in a same or similar major (unless designated as a "high-unit" major).

The following Associate Degree for Transfer requirements must be completed to earn the AA-T or AS-T degree:

a. Minimum of 60 CSU-transferable semester units;

b. Minimum grade point average (GPA) of 2.0 in all CSU-transferable coursework (while a minimum of 2.0 is required for admission, some majors may require a higher GPA);

c. Completion of a minimum of 18 semester units as detailed in the Major Requirements;

d. Completion of all courses in the major with a grade of C or better (or a "P" if the course is taken on a "Pass/No Pass" basis);

e. Certified completion of the California State University General Education-Breadth pattern (CSU GE-Breadth) pattern; OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.

All students should consult with a Counselor to discuss transfer pathways and specific university admission requirements. Visit MPC's Counseling website for more information about Counseling services provided by MPC and to connect with a Counselor.

MPC "Ready to Work" Career Education programs offer students the opportunity to gain knowledge and skills needed for employment and job advancement.

All students should consult with a Counselor to discuss career pathways, for support with career exploration and planning, and to create a personalized education plan to help them meet their academic, career, and personal goals. Visit MPC's Counseling website for more information about Counseling services provided by MPC and to connect with a Counselor.

Additional resources are available through MPC's Career & Transfer Resource Center (CTRC). The CTRC offers career resources, workshops, guidance and referrals. Visit the CTRC for support finding online career information and other resources to explore majors, occupations, and employment information.