

# COMPUTER SCIENCE, ASSOCIATE OF SCIENCE



## Get an Exciting Job in the Tech Industry

The **Associate of Science (AS) in Computer Science** provides graduates with a strong foundation in technology, preparing them for a range of career opportunities and pathways for further education. This degree equips students with the skills and knowledge needed to enter the workforce immediately or to pursue advanced studies, offering flexibility for diverse career goals.

Graduates of the AS program can begin their careers in **entry-level roles** such as web developers, computer support specialists, systems administrators, and programmers. These positions provide valuable hands-on experience and often serve as steppingstones to more advanced opportunities. The demand for tech skills spans various industries, including technology firms, financial services, healthcare, and government agencies, giving graduates the flexibility to explore different sectors.

For those seeking to advance their education, the AS degree is an excellent starting point for pursuing a **bachelor's degree** in computer science or related fields, which can open doors to higher-paying and more specialized roles. Additionally, earning **specialized certifications** in areas like cybersecurity, network administration, or programming languages can further enhance job prospects and allow for career specialization.

With experience and continued education, graduates can move into **advanced roles**, such as software developers, IT project managers, data scientists, and information security analysts. Over time, they may also progress into **leadership positions**, including IT directors or chief information officers (CIOs), where they manage teams and oversee technology strategies.

## Highlights of Career and Education Opportunities

- **Immediate Employment:**
  - Entry-level roles: Web developers, computer support specialists, systems administrators, programmers.
  - Diverse industries: Technology, finance, health care, government.
- **Further Education:**
  - Pursue a bachelor's degree for advanced career opportunities.
  - Obtain certifications in cybersecurity, network administration, or programming languages.
- **Career Advancement:**
  - Transition to advanced roles: Software developers, data scientists, IT project managers.
  - Move into leadership: IT directors, CIOs.

An AS in Computer Science is a versatile degree that supports immediate workforce entry while providing a pathway to advanced education and career growth. It enables graduates to thrive in a dynamic and technology-driven job market.

## Career Opportunities

- Artificial Intelligence
- Computer Architecture & Engineering
- Database Management Systems
- Graphics Systems
- Human-Computer Interaction
- Operating Systems & Networking
- Programming Systems
- Scientific Computing
- Security

## Earning Potential

Software developer (applications) - \$126,738<sup>1</sup>

Database administrator - \$103,744<sup>1</sup>

Computer hardware engineer - \$125,217<sup>1</sup>

Computer systems analyst - \$117,787<sup>1</sup>

Web developer - \$98,119<sup>1</sup>

Information security analyst - \$120,722<sup>1</sup>

Computer programmer - \$96,789<sup>1</sup>

Computer and information systems managers - \$172,008<sup>1</sup>

<sup>1</sup> Source: [texaswages.com](https://texaswages.com), (<https://texaswages.com>) median salary Gulf Coast region, 2023

## Campuses

Central Campus

North Campus

South Campus

San Jac Online

The Associate of Science (AS) degree is designed for students who plan to transfer to a four-year or upper-level college or university and major in mathematics, one of the sciences (biology, chemistry, geology, physics, biotechnology, or related field), engineering, or computer science. For more information, students may refer to the Core Curriculum (<https://publications.sanjac.edu/general-information/educational-programs/basics-core-curriculum-general-education-outcomes/>) section of the catalog. The AS degree differs from an Associate of Arts (AA) degree in the amount or level of mathematics and science required for degree completion. The College requires a minimum of 12 hours of mathematics, 12 hours in science, or 12 hours in computer sciences beyond the Core requirement for the degree.

Students seeking an AS degree should take science courses designed for majors rather than courses for non-majors. Science courses designed

for allied health students are not intended for academic transfer toward a science major.

Students choosing to pursue an AS degree should select from the following areas of study: Natural Science, Computer Science, Engineering, or Mathematics. Courses designed for non-majors do not apply to an AS degree:

- BIOL 1308 Biology for Non-Science Majors I (lecture)/BIOL 1108 Biology for Non-Science Majors I (lab);
- BIOL 1309 Biology for Non-Science Majors II (lecture)/BIOL 1109 Biology for Non-Science Majors II (lab);
- CHEM 1305 Introductory Chemistry I (lecture)/CHEM 1105 Introductory Chemistry I (lab); and
- GEOL 1301 Earth Sciences for Non-Science Majors I (lecture)/GEOL 1101 Earth Sciences for Non-Science Majors I (lab).

The College recommends these courses for the AA degrees.

## Plan of Study (Degree Plan)

### 2COSCI

Students who know the university to which they want to transfer to pursue a related bachelor's degree should use the appropriate transfer plan for the university listed on the Transfer Plans (MAPS) page from the tab above.

This plan of study is intended only for students who do not yet know the university to which they want to transfer or for students who do not currently plan to transfer after earning their associate degree.

#### First Year

First Term		Credits
ENGL 1301	Composition I	3
Transfer Path Courses (see list below)		3
American History		3
EDUC 1100	Learning Framework	1
COSC 1436	Programming Fundamentals I	4
<b>Credits</b>		<b>14</b>

#### Second Term

ENGL 1302	Composition II	3
or ENGL 2311	or Technical and Business Writing	
American History		3
Social and Behavioral Sciences		3
COSC 1437	Programming Fundamentals II	4
Transfer Path Courses (see list below)		3
<b>Credits</b>		<b>16</b>

#### Second Year

##### First Term

Life and Physical Science (Natural Science) lecture and lab		4
Creative Arts (Fine Arts)		3
GOVT 2305	Federal Government (Federal Constitution and Topics)	3
Transfer Path Courses (see list below)		4
<b>Credits</b>		<b>14</b>

##### Second Term

Life and Physical Science (Natural Science) lecture and lab		4
Language, Philosophy and Culture (Humanities)		3

Mathematics		3
GOVT 2306	Texas Government (Texas Constitution and Topics)	3
Component Area Option		3
<b>Credits</b>		<b>16</b>
<b>Total Credits</b>		<b>60</b>

## Transfer Path Courses

Code	Title	Credits
<b>Transfer Path</b>		
18 total semester credit hours (SCH), including:		
COSC 1436	Programming Fundamentals I	4
COSC 1437	Programming Fundamentals II	4
Select at least six SCH from the following:		6
COSC 2436	Programming Fundamentals III	
COSC 2325	Computer Organization	
MATH 2413	Calculus I	
MATH 2414	Calculus II	
PHYS 2325	University Physics I (lecture)	
& PHYS 2125	and University Physics I (lab)	
PHYS 2326	University Physics II (lecture)	
& PHYS 2126	and University Physics II (lab)	
The remaining hours will be selected to meet the student's specific transfer institution requirements.		4
<b>Total Credits</b>		<b>18</b>

## Core Curriculum

Core Curriculum: 42 SCH of Core courses including EDUC 1100 Learning Framework.

Code	Title	Credits
<b>Communication (010)</b>		
Select two of the following courses for 6 SCH:		6
ENGL 1301	Composition I	
ENGL 1302	Composition II	
ENGL 2311	Technical and Business Writing	

#### Mathematics (020)

If you select a 4 SCH MATH course, the overflow hour may be accounted for in the Component Area Option of the Core or in the Transfer Path.

Select one of the following courses for 3 SCH:		3
MATH 1314	College Algebra	
MATH 1316	Plane Trigonometry	
MATH 1324	Mathematics for Business and Social Sciences <sup>1</sup>	
MATH 1325	Calculus for Business and Social Sciences <sup>1</sup>	
MATH 1332	Contemporary Mathematics (Quantitative Reasoning) <sup>1</sup>	
MATH 1342	Elementary Statistical Methods (Statistics)	
MATH 2318	Linear Algebra	
MATH 2320	Differential Equations	
MATH 2412	Pre-Calculus Math	
MATH 2413	Calculus I	
MATH 2414	Calculus II	
<b>Life and Physical Science (030)</b>		

Labs for the sciences courses may be accounted for in the Component Area Option.

Select two of the following courses for 6 SCH: <sup>2</sup> 6

ASTR 1303	Stars and Galaxies (lecture)
ASTR 1304	The Solar System (lecture)
BIOL 1306	Biology for Science Majors I (lecture)
BIOL 1307	Biology for Science Majors II (lecture)
BIOL 1308	Biology for Non-Science Majors I (lecture) <sup>3</sup>
BIOL 1309	Biology for Non-Science Majors II (lecture) <sup>3</sup>
BIOL 2301	Anatomy and Physiology I (Lecture) <sup>4</sup>
BIOL 2302	Anatomy and Physiology II (Lecture) <sup>4</sup>
CHEM 1305	Introductory Chemistry I (lecture) <sup>3</sup>
CHEM 1311	General Chemistry I (lecture)
CHEM 1312	General Chemistry II (lecture)
GEOL 1301	Earth Sciences for Non-Science Majors I (lecture) <sup>3</sup>
GEOL 1303	Physical Geology (lecture)
GEOL 1304	Historical Geology (lecture)
PHYS 1301	College Physics I (lecture)
PHYS 1302	College Physics II (lecture)
PHYS 2325	University Physics I (lecture)
PHYS 2326	University Physics II (lecture)

#### Language, Philosophy and Culture (Humanities) (040)

Select one of the following courses for 3 SCH: 3

ENGL 2322	British Literature I
ENGL 2323	British Literature II
ENGL 2327	American Literature I
ENGL 2328	American Literature II
ENGL 2332	World Literature I
ENGL 2333	World Literature II
ENGL 2341	Forms of Literature: Literature and Film
ENGL 2351	Mexican American Literature
GEOG 1302	Human Geography
HIST 2321	World Civilization I
HIST 2322	World Civilization II
HUMA 1301	Introduction to the Humanities I
PHIL 1301	Introduction to Philosophy
PHIL 2306	Introduction to Ethics

#### Creative Arts (Fine Arts) (050)

Select one of the following courses for 3 SCH: 3

ARTS 1301	Art Appreciation
ARTS 1303	Art History I (Prehistoric to the 14th century)
ARTS 1304	Art History II (14th century to the present)
DANC 1305	World Dance
DANC 2303	Dance Appreciation
DRAM 1310	Theater Appreciation
DRAM 2366	Film Appreciation
MUSI 1306	Music Appreciation
MUSI 1307	Music Literature
MUSI 1310	American Music

#### American History (060)

Select two of the following courses for 6 SCH: 6

HIST 1301	United States History I
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HIST 1302	United States History II
HIST 2301	Texas History
HIST 2327	Mexican American History I
HIST 2328	Mexican American History II
HIST 2381	African American History I
HIST 2382	African American History II

#### Government/Political Science (070)

Select two of the following courses for 6 SCH: 6

GOVT 2305	Federal Government (Federal Constitution and Topics) <sup>5</sup>
GOVT 2306	Texas Government (Texas Constitution and Topics) <sup>5</sup>

#### Social and Behavioral Sciences (080)

Select one of the following courses for 3 SCH: 3

ANTH 2302	Introduction to Archaeology
ANTH 2346	General Anthropology
ANTH 2351	Cultural Anthropology
CRIJ 1301	Introduction to Criminal Justice
ECON 2301	Principles of Macroeconomics
ECON 2302	Principles of Microeconomics
GEOG 1303	World Regional Geography
GOVT 2304	Introduction to Political Science
HIST 2311	Western Civilization I
HIST 2312	Western Civilization II
PSYC 2301	General Psychology
SOCI 1301	Introduction to Sociology
SOCI 2319	Minority Studies
TECA 1354	Child Growth and Development

#### Component Area Option (090)

The following courses as well as courses not previously used from the other eight areas of the Core may be used to fulfill the Component Area Option requirement.

Select from the following courses for 6 SCH: 6

ASTR 1103	Stars and Galaxies (lab)
ASTR 1104	The Solar System (lab)
BIOL 1106	Biology for Science Majors I (lab)
BIOL 1107	Biology for Science Majors II (lab)
BIOL 1108	Biology for Non-Science Majors I (lab)
BIOL 1109	Biology for Non-Science Majors II (lab)
BIOL 2101	Anatomy and Physiology I (Lab)
BIOL 2102	Anatomy and Physiology II (Lab)
CHEM 1105	Introductory Chemistry I (lab)
CHEM 1111	General Chemistry I (lab)
CHEM 1112	General Chemistry II (lab)
CHIN 1411	Beginning Chinese I
CHIN 1412	Beginning Chinese II
EDUC 1100	Learning Framework
FREN 1411	Beginning French I
FREN 1412	Beginning French II
GEOL 1101	Earth Sciences for Non-Science Majors I (lab)
GEOL 1103	Physical Geology (lab)
GEOL 1104	Historical Geology (lab)
GERM 1411	Beginning German I

GERM 1412	Beginning German II
GOVT 2107	Federal and Texas Constitutions
PHED 1164	Introduction to Physical Fitness and Wellness
PHYS 1101	College Physics I (lab)
PHYS 1102	College Physics II (lab)
PHYS 2125	University Physics I (lab)
PHYS 2126	University Physics II (lab)
SGNL 1401	Beginning American Sign Language I
SGNL 1402	Beginning American Sign Language II
SPAN 1411	Beginning Spanish I
SPAN 1412	Beginning Spanish II
SPCH 1311	Introduction to Speech Communication
SPCH 1315	Public Speaking
SPCH 1318	Interpersonal Communication
SPCH 1321	Business and Professional Speech

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**Total Credits** **42**

- <sup>1</sup> MATH 1324 Mathematics for Business and Social Sciences, MATH 1325 Calculus for Business and Social Sciences, and MATH 1332 Contemporary Mathematics (Quantitative Reasoning) do not meet the requirements for students pursuing mathematics or science.
- <sup>2</sup> Students must be simultaneously co-enrolled in the co-requisite science lab.
- <sup>3</sup> BIOL 1308 Biology for Non-Science Majors I (lecture), BIOL 1309 Biology for Non-Science Majors II (lecture) and CHEM 1305 Introductory Chemistry I (lecture), and GEOL 1301 Earth Sciences for Non-Science Majors I (lecture) do not meet the requirements for science majors.
- <sup>4</sup> BIOL 2301 Anatomy and Physiology I (Lecture) and BIOL 2302 Anatomy and Physiology II (Lecture) are designed for allied health majors and not for academic transfer as science majors.
- <sup>5</sup> Students who have taken GOVT 2301 or GOVT 2302, but not both, should check with a Program Advisor on how to complete the 6 SCH.

If a student successfully completes San Jacinto College's 42-hour Core Curriculum, that block of courses must be substituted for the receiving institution's Core Curriculum. The receiving institution may not require a student to take additional Core Curriculum courses to meet the requirements of the Core. Students who transfer without completing the Core Curriculum shall receive academic credit in the Core Curriculum of the receiving institution for each of the courses the student has successfully completed in the San Jacinto College Core Curriculum. Students should plan Core Curriculum courses that would meet baccalaureate degree requirements at the four-year institution.

If you do not see your transfer school, please follow the Plan of Study. (p. 2) For more information, contact an Admissions Advisor. Please speak to an advisor at San Jacinto College and the transfer institution to ensure this Transfer Plan is accurate and complete. For a list of all MAPs, students may go to Transfer Plans A-Z (<https://publications.sanjac.edu/transfer-plan-maps/>). Students may filter for specific universities, disciplines, or degrees, and print individual MAPs.

### Computer Science

UH Main, Computer Science, BS Full-time (<https://publications.sanjac.edu/map-uh-main-comp-sci-bsft/>)

UH Main, Computer Science, BS Part-time (<https://publications.sanjac.edu/map-uh-main-comp-sci-bspt/>)

UHCL, Computer Science, BS Full-time (<https://publications.sanjac.edu/map-uhcl-comp-sci-bsft/>)

UHCL, Computer Science, BS Part-time (<https://publications.sanjac.edu/map-uhcl-comp-sci-bspt/>)