

COMPUTER SCIENCE, ASSOCIATE OF SCIENCE



Get an Exciting Job in the Tech Industry

Are you good in math and science and want to know how computer systems work? Have you ever wondered how computers store data or how artificial intelligence helps find Internet information faster or makes games better or how computers have changed society? Would you like to learn how to write your own programs and applications?

San Jacinto College's Associate of Science (AS) in Computer Science may be the right program for you! It is designed to prepare graduates for transfer to universities to complete computer information system or computer science bachelor's degrees.

Students also may seek an Occupational Certificate, Certificate of Technology, or an Associate of Applied Science (AAS) in Application Programming.

Other computer-related areas of study include Website Applications Development, Desktop Support and Microsoft Networking, Cisco Networking, and Information Technology Security.

Some of the programming courses will be accepted for transfer to certain schools, but students should check with an educational planner for more details on course transferability.

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) - \$110,054¹

Database administrator - \$100,055¹

Computer hardware engineer - \$128,209¹

Computer systems analyst - \$116,468¹

Web developer - \$72,463¹

Information security analyst - \$104,375¹

Computer programmer - \$93,426¹

Computer and information systems managers - \$158,625¹

¹ Source: texaswages.com (<https://texaswages.com>), *median salary* Gulf Coast region, 2021

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/>) and Fields of Study (<https://publications.sanjac.edu/general-information/educational-programs/field-study/>) sections 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. Please note the Field of Study AS degree options contain state-required courses recommended 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

Code	Title	Credits
Transfer Path		
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 & PHYS 2125	University Physics I (lecture) and University Physics I (lab)	
PHYS 2326 & PHYS 2126	University Physics II (lecture) and University Physics II (lab)	
The remaining hours will be selected to meet the student's specific transfer institution requirements.		4
Total Credits		18

Core Curriculum

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

Code	Title	Credits
Communication (010)		
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 ¹	
MATH 1325	Calculus for Business and Social Sciences ¹	
MATH 1332	Contemporary Mathematics (Quantitative Reasoning) ¹	
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	
Life and Physical Science (030)		
Labs for the sciences courses may be accounted for in the Component Area Option.		
Select two of the following courses for 6 SCH: ²		6
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) ³	
BIOL 1309	Biology for Non-Science Majors II (lecture) ³	
BIOL 2301	Anatomy and Physiology I (Lecture) ⁴	

BIOL 2302	Anatomy and Physiology II (Lecture) ⁴	
CHEM 1305	Introductory Chemistry I (lecture) ³	
CHEM 1311	General Chemistry I (lecture)	
CHEM 1312	General Chemistry II (lecture)	
GEOL 1301	Earth Sciences for Non-Science Majors I (lecture) ³	
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	
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) ⁵	

GOVT 2306 Texas Government (Texas Constitution and Topics)
5

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
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

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
	or PSYC 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
Total Credits	42

- ¹ 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.
- ² Students must be simultaneously co-enrolled in the co-requisite science lab.
- ³ 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.
- ⁴ 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.
- ⁵ Students who have taken GOVT 2301 or GOVT 2302, but not both, should check with an educational planner 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. 1) 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.

Computer Science

Transfer Plans

• UH Main, Computer Science, BS University of Houston - Main Campus Full Time

UH Main, Computer Science MAP

For college-ready students seeking a Computer Sciences AS at San Jacinto College, transferring to UHM seeking a BS in UH Main, Computer Science.

Course	Title	Credits
First Year		
First Term		
PSYC 1100	Learning Framework	1
or EDUC 1100	or Learning Framework	
ENGL 1301	Composition I	3

PHED 1164	Introduction to Physical Fitness and Wellness ¹	1
COSC 1436	Programming Fundamentals I	4
MATH 2413	Calculus I ²	4
HIST 1301	United States History I	3
Credits		16
Second Term		
ENGL 1302	Composition II	3
COSC 1437	Programming Fundamentals II	4
MATH 2414	Calculus II	4
PHYS 2325 & PHYS 2125	University Physics I (lecture) and University Physics I (lab)	4
Credits		15
Second Year		
First Term		
COSC 2436	Programming Fundamentals III	4
PHYS 2326 & PHYS 2126	University Physics II (lecture) and University Physics II (lab)	4
HIST 1302	United States History II	3
GOVT 2305	Federal Government (Federal Constitution and Topics)	3
Credits		14
Second Term		
MATH 2318	Linear Algebra ³	3
SOCI 1301	Introduction to Sociology	3
GOVT 2306	Texas Government (Texas Constitution and Topics)	3
ARTS 1301	Art Appreciation	3
PHIL 1301	Introduction to Philosophy	3
Credits		15
Total Credits		60

¹Students who are required to complete a prerequisite for MATH 2413 Calculus I do not need to take PHED 1164 Introduction to Physical Fitness and Wellness, which does not transfer to UH Main. Students may wish to complete MATH 2305 Discrete Mathematics, a 3 SCH course that will transfer to UH Main, instead of taking PHED 1164 Introduction to Physical Fitness and Wellness.

²To take MATH 2413 Calculus I, students must successfully complete either the prerequisite course MATH 2412 Pre-Calculus Math or placement by testing. Students who test and place out of only MATH 1314 College Algebra will need to take MATH 2412 Pre-Calculus Math during their first term. Students who place out of both MATH 1314 College Algebra and MATH 2412 Pre-Calculus Math may start with MATH 2413 Calculus I as indicated on this MAP. Once students complete MATH 2413 Calculus I, they may then take MATH 2414 Calculus II followed by MATH 2318 Linear Algebra. ³Students may also be interested in taking COSC 2325 Computer Organization, which will help them understand the upper-level course work more fully; however, COSC 2325 Computer Organization does not transfer to UH Main.

• UH Main, Computer Science, BS University of Houston - Main Campus Part Time

UH Main, Computer Science MAP

For college-ready students seeking a Computer Sciences AS at San Jacinto College, transferring to UHM seeking a BS in UH Main, Computer Science.

Course	Title	Credits
First Year		
First Term		
EDUC 1100 or PSYC 1100	Learning Framework or Learning Framework	1
ENGL 1301	Composition I	3
PHED 1164	Introduction to Physical Fitness and Wellness ¹	1
COSC 1436	Programming Fundamentals I	4
Credits		9
Second Term		
MATH 2413	Calculus I ²	4
ENGL 1302	Composition II	3
COSC 1437	Programming Fundamentals II	4
Credits		11
Second Year		
First Term		
MATH 2414	Calculus II	4
PHYS 2325 & PHYS 2125	University Physics I (lecture) and University Physics I (lab)	4
HIST 1301	United States History I	3
Credits		11
Second Term		
COSC 2436	Programming Fundamentals III	4
PHYS 2326 & PHYS 2126	University Physics II (lecture) and University Physics II (lab)	4
HIST 1302	United States History II	3
Credits		11
Third Year		
First Term		
GOVT 2305	Federal Government (Federal Constitution and Topics)	3
MATH 2318	Linear Algebra ³	3
SOCI 1301	Introduction to Sociology	3
Credits		9
Second Term		
GOVT 2306	Texas Government (Texas Constitution and Topics)	3
ARTS 1301	Art Appreciation	3
PHIL 1301	Introduction to Philosophy	3
Credits		9
Total Credits		60

¹Students who are required to complete a prerequisite for MATH 2413 Calculus I do not need to take PHED 1164 Introduction to Physical

Fitness and Wellness, which does not transfer to UH Main. Students may wish to complete MATH 2305 Discrete Mathematics a 3 SCH course that will transfer to UH Main, instead of taking PHED 1164 Introduction to Physical Fitness and Wellness.

To take MATH 2413 Calculus I, students must successfully complete either the prerequisite course MATH 2412 Pre-Calculus Math or placement by testing. Students who test and place out of only MATH 1314 College Algebra will need to take MATH 2412 Pre-Calculus Math during their first term. Students who place out of both MATH 1314 College Algebra and MATH 2412 Pre-Calculus Math may start with MATH 2413 Calculus I as indicated on this MAP. Once students complete MATH 2413 Calculus I, they may then take MATH 2414 Calculus II followed by MATH 2318 Linear Algebra.

Students may also be interested in taking COSC 2325 Computer Organization, which will help them understand the upper-level course work more fully; however, COSC 2325 Computer Organization does not transfer to UH Main.

• UHCL, Computer Science, BS University of Houston - Clear Lake Full Time

UHCL, Computer Science MAP

For college-ready students seeking a Computer Sciences AS at San Jacinto College, transferring to UHCL seeking a BS in UHCL, Computer Science.

Course	Title	Credits
First Year		
First Term		
EDUC 1100 or PSYC 1100	Learning Framework or Learning Framework	1
ENGL 1301	Composition I	3
PHED 1164	Introduction to Physical Fitness and Wellness ¹	1
COSC 1436	Programming Fundamentals I	4
MATH 2413	Calculus I ²	4
HIST 1301	United States History I	3
Credits		16
Second Term		
ENGL 1302	Composition II	3
COSC 1437	Programming Fundamentals II	4
MATH 2414	Calculus II	4
PHYS 2325 & PHYS 2125	University Physics I (lecture) and University Physics I (lab)	4
Credits		15
Second Year		
First Term		
COSC 2436	Programming Fundamentals III	4
PHYS 2326 & PHYS 2126	University Physics II (lecture) and University Physics II (lab)	4
HIST 1302	United States History II	3
GOVT 2305	Federal Government (Federal Constitution and Topics)	3
Credits		14

Second Term

MATH 2318	Linear Algebra ³	3
SOCI 1301	Introduction to Sociology	3
GOVT 2306	Texas Government (Texas Constitution and Topics)	3
ARTS 1301	Art Appreciation	3
PHIL 1301	Introduction to Philosophy	3
Credits		15
Total Credits		60

Students who are required to complete a prerequisite for MATH 2413 Calculus I do not need to take PHED 1164 Introduction to Physical Fitness and Wellness, which does not transfer to UHCL. Students may wish to complete MATH 2305 Discrete Mathematics, a 3 SCH course that will transfer to UHCL, instead of taking PHED 1164 Introduction to Physical Fitness and Wellness.

To take MATH 2413 Calculus I, students must successfully complete either the prerequisite course MATH 2412 Pre-Calculus Math or placement by testing. Students who test and place out of only MATH 1314 College Algebra will need to take MATH 2412 Pre-Calculus Math during their first term. Students who place out of both MATH 1314 College Algebra and MATH 2412 Pre-Calculus Math may start with MATH 2413 Calculus I as indicated on this map. Once students complete MATH 2413 Calculus I, they may then take MATH 2414 Calculus II followed by MATH 2318 Linear Algebra.

Students may also be interested in taking COSC 2325 Computer Organization, which will help them understand the upper-level course work more fully; however, COSC 2325 Computer Organization does not transfer to UHCL.

• UHCL, Computer Science, BS University of Houston - Clear Lake Part Time

UHCL, Computer Science MAP

For college-ready students seeking a Computer Sciences AS at San Jacinto College, transferring to UHCL seeking a BS in UHCL, Computer Science.

Course	Title	Credits
First Year		
First Term		
EDUC 1100 or PSYC 1100	Learning Framework or Learning Framework	1
ENGL 1301	Composition I	3
PHED 1164	Introduction to Physical Fitness and Wellness ¹	1
COSC 1436	Programming Fundamentals I	4
Credits		9
Second Term		
MATH 2413	Calculus I ²	4
ENGL 1302	Composition II	3
COSC 1437	Programming Fundamentals II	4
Credits		11

Second Year**First Term**

MATH 2414	Calculus II	4
PHYS 2325 & PHYS 2125	University Physics I (lecture) and University Physics I (lab)	4
HIST 1301	United States History I	3
Credits		11

Second Term

COSC 2436	Programming Fundamentals III	4
PHYS 2326 & PHYS 2126	University Physics II (lecture) and University Physics II (lab)	4
HIST 1302	United States History II	3
Credits		11

Third Year**First Term**

GOVT 2305	Federal Government (Federal Constitution and Topics)	3
MATH 2318	Linear Algebra ³	3
SOCI 1301	Introduction to Sociology	3
Credits		9

Second Term

GOVT 2306	Texas Government (Texas Constitution and Topics)	3
ARTS 1301	Art Appreciation	3
PHIL 1301	Introduction to Philosophy	3
Credits		9

Total Credits		60
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¹Students who are required to complete a prerequisite for Math 2413 Calculus I do not need to take PHED 1164 Introduction to Physical Fitness and Wellness, which does not transfer to UHCL. Students may wish to complete MATH 2305 Discrete Mathematics, a 3 SCH course that will transfer to UHCL, instead of taking PHED 1164 Introduction to Physical Fitness and Wellness.

²To take MATH 2413 Calculus I, students must successfully complete either the prerequisite course MATH 2412 Pre-Calculus Math or placement by testing. Students who test and place out of only MATH 1314 College Algebra will need to take MATH 2412 Pre-Calculus Math during their first term. Students who place out of both MATH 1314 College Algebra and MATH 2412 Pre-Calculus Math may start with MATH 2413 Calculus I as indicated on this map. Once students complete MATH 2413 Calculus I, they may then take MATH 2414 Calculus II followed by MATH 2318 Linear Algebra.

³Students may also be interested in taking COSC 2325 Computer Organization, which will help them understand the upper-level course work more fully; however, COSC 2325 Computer Organization does not transfer to UHCL.

No matching transfer programs found. Reset your selections and try again.