COMPUTER SCIENCE, B.A.

Computer science is an exciting, rapidly developing field with vast influence on modern society. Computer science encompasses a broad range of theories and applications. The computer science major at Saint Louis University is excellent for students going into many fields, including technology, business, medicine and law, due to the emphasis on problem-solving skills.

The Department of Computer Science at Saint Louis University offers both a Bachelor of Arts and a Bachelor of Science in Computer Science. The B.A. curriculum includes a broad liberal arts study and can be combined with a second major or minor in fields such as art, criminal science or psychology.

SLU’s accelerated master’s program allows SLU undergraduate computer science majors to earn both a bachelor’s degree and a master’s degree in five years. Students combine a B.A. or B.S. in computer science with a master’s degree in computer science, software engineering, artificial intelligence or bioinformatics and computational biology.

Program Highlights
- A choice of engaging introductory courses, allowing students to better connect the application of computer science to their interests.
- Courses are taught in computer labs, allowing for hands-on learning.
- Small class sizes allow for rich student-faculty interactions.
- A curriculum that allows students to see the impact and application of computing throughout society.

Curriculum Overview
Students completing the Bachelor of Arts curriculum in computer science obtain a rigorous, comprehensive background in the discipline. With this curriculum, they are afforded time to delve into other academic interests, including pre-professional studies or a minor or major in another discipline. Students should consult with their advisors to tailor their computer science electives to their individual goals.

Fieldwork and Research Opportunities
Because of our location in the Midtown area of St. Louis, our students have access to a robust technology community, with operations for many Fortune 500 companies and a vibrant startup community. This provides outstanding opportunities for summer internships, part-time work during the academic year, and future jobs after graduation.

Our campus is within walking distance of the Cortex Innovation Community (https://cortexstl.com/), a vibrant 200-acre (and growing) innovation hub and technology district. Cortex is home to SLU’s Research Innovation Group (https://www.slu.edu/research/faculty-resources/research-innovation-group/), which works on technology transfer and commercial partnerships. Cortex is also home to the weekly Venture Cafe (https://venturecafestl.org/) (every Thursday from 3-8 p.m.), which is an excellent place for students to connect with tech community members in a friendly and informal setting. Also in downtown St. Louis is the T-REX Technology Entrepreneur Center (http://www.downtowntrex.org/), a coworking space and technology incubator.

Our faculty has integrated students into their research programs in various ways. Some of our undergraduate students have participated in REUs (research experience for undergraduates), capstone projects and independent research that has resulted in scholarly publications with their faculty mentors. In addition, many students have had opportunities to travel to conferences and present their work.

Careers
Careers related to computer science are routinely found on various "best jobs" lists because of their outstanding combination of excellent pay, satisfying work-life balance and personal reward in seeing the great impact of computing throughout society. As a sample of such listings:

- U.S. News 100 Best Jobs list for 2022 (https://money.usnews.com/careers/best-jobs/rankings/the-100-best-jobs/) named information security analyst. The top 100 also included software developer (#5), data scientist (#6), IT manager (#13), computer systems analyst (#27), web developer (#32), database administrator (#38), computer network architect (#48), and computer systems administrator (#52).
- Glassdoor’s 50 Best Jobs in America list for 2022 (https://www.glassdoor.com/List/Best-Jobs-in-America-LST_KQ0,20.htm) named enterprise architect as #1, and many other technology positions appear within the top 25: full stack engineer (#2), data scientist (#3), devops engineer (#4), machine learning engineer (#6), data engineer (#8), software engineer (#9), back end engineer (#11), cloud engineer (#12) information security engineer (#15), back end engineer (#16), automation engineer (#21), and UX designer (#24).

Admission Requirements
Begin Your Application (http://www.slu.edu/apply.php)
Saint Louis University also accepts the Common Application.

Freshman
All applications are thoroughly reviewed with the highest degree of individual care and consideration to all credentials that are submitted. Solid academic performance in college preparatory coursework is a primary concern in reviewing a freshman applicant’s file.

To be considered for admission to any Saint Louis University undergraduate program, applicants must be graduating from an accredited high school, have an acceptable HiSET exam score or take the General Education Development (GED) test.

Transfer
Applicants must be a graduate of an accredited high school or have an acceptable score on the GED.

Students who have attempted fewer than 24 semester credits (or 30 quarter credits) of college credit must follow the above freshmen admission requirements. Students who have completed 24 or more semester credits (or 30 quarter credits) of college credit must submit transcripts from all previously attended college(s).

In reviewing a transfer applicant’s file, the Office of Admission holistically examines the student’s academic performance in college-level coursework as an indicator of the student’s ability to meet the academic rigors of Saint Louis University. Where applicable, transfer students will be evaluated on any courses outlined in the continuation standards of their preferred major.

International Applicants
All admission policies and requirements for domestic students apply to international students along with the following:

• SLU’s accelerated master’s program allows SLU undergraduate computer science majors to earn both a bachelor’s degree and a master’s degree in five years. Students combine a B.A. or B.S. in computer science with a master’s degree in computer science, software engineering, artificial intelligence or bioinformatics and computational biology.
Learning Outcomes
1. Graduates will be able to analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
2. Graduates will be able to design, implement, evaluate and test a software system that meets a given set of computing requirements.
3. Graduates will be able to apply computer science theory, knowledge of computer systems and software development fundamentals to produce computing-based solutions.
4. Graduates will be able to communicate effectively to both professional and general audiences in both oral and written forms.
5. Graduates will be able to recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
6. Graduates will be able to function effectively as a member of a team in developing computing technology and solving technical problems.

Requirements
Computer science students must complete a minimum total of 53 credits for the major.

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CSCI 1010</td>
<td>Introduction to Computer Science: Principles</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 1020</td>
<td>Introduction to Computer Science: Bioinformatics</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 1025</td>
<td>Introduction to Computer Science: Cybersecurity</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 1030</td>
<td>Introduction to Computer Science: Game Design</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 1040</td>
<td>Introduction to Computer Science: Mobile Computing</td>
<td>4</td>
</tr>
<tr>
<td>CSCI 1050</td>
<td>Introduction to Computer Science: Multimedia</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 1060</td>
<td>Introduction to Computer Science: Scientific Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 1070</td>
<td>Introduction to Computer Science: Taming Big Data</td>
<td>3</td>
</tr>
<tr>
<td>CSCI 1080</td>
<td>Introduction to Computer Science: World Wide Web</td>
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Tuition
Tuition Cost Per Year
Undergraduate Tuition $52,260

Additional charges may apply. Other resources are listed below:
Information on Tuition and Fees (https://catalog.slu.edu/academic-policies/student-financial-services/tuition/)
Miscellaneous Fees (https://catalog.slu.edu/academic-policies/student-financial-services/fees/)
Information on Summer Tuition (https://catalog.slu.edu/academic-policies/student-financial-services/tuition-summer/)

Scholarships and Financial Aid
There are two principal ways to help finance a Saint Louis University education:

- **Scholarships**: Scholarships are awarded based on academic achievement, service, leadership and financial need.
- **Financial Aid**: Financial aid is provided through grants and loans, some of which require repayment.

Saint Louis University makes every effort to keep our education affordable. In fiscal year 2022, 99% of first-time freshmen and 90% of all students received financial aid (https://www.slu.edu/financial-aid/) and students received more than $445 million in aid University-wide.

For priority consideration for merit-based scholarships, apply for admission by December 1 and complete a Free Application for Federal Student Aid (FAFSA) by March 1.

For information on other scholarships and financial aid, visit www.slu.edu/financial-aid/.
CSCI 1090 Introduction to Computer Science: Special Topics
With permission, a computing-intensive course from another discipline may be substituted. Examples of such courses include:
BME 2000 Biomedical Engineering Computing
CVNG 1500 Civil Engineering Computing
STAT 3850 Foundation of Statistics

Systems Electives Courses

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<tr>
<td>CSCI 4500</td>
<td>Advanced Operating Systems</td>
<td></td>
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<tr>
<td>CSCI 4530</td>
<td>Computer Security</td>
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<td>Computer Networks</td>
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<tr>
<td>CSCI 4610</td>
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<td>Distributed Computing</td>
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Non-Course Requirements
All Science and Engineering B.A. and B.S. students must complete an exit interview/survey near the end of their bachelor's program.

Continuation Standards
After declaring a computer science major, students must achieve a minimum GPA of 2.00 in computer science courses by the conclusion of their second year as a major and maintain such a GPA at the conclusion of each semester thereafter. Furthermore, students should require at most two attempts to successfully complete any computer science courses required for the major (where an unsuccessful attempt is considered a "D" or "F" for courses numbered 2100 and lower, and an "F" in higher-level courses).

Students are also expected to make adequate progress in the major, typically by enrolling in at least one computer science course per semester until completing their coursework (with exceptions made for premed scholars during their first year, and all students if studying abroad or facing other such extenuating circumstances).

Program Notes
At most, three credit hours of internship with industry courses can be applied to the degree.

Roadmap
Roadmaps are recommended semester-by-semester plans of study for programs and assume full-time enrollment unless otherwise noted.

Courses and milestones designated as critical (marked with !) must be completed in the semester listed to ensure a timely graduation. Transfer credit may change the roadmap.

This roadmap should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor/mentor each semester. Requirements, course availability and sequencing are subject to change.

<table>
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| Year One
Fall     | CSCI 10xx: Introduction to Computer Science (p. 3) | 3       |
|         | MATH 1660: Discrete Mathematics             | 3       |

Introduction to Computer Science

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CSCI 1070  Introduction to Computer Science: Taming Big Data
CSCI 1080  Introduction to Computer Science: World Wide Web
CSCI 1090  Introduction to Computer Science: Special Topics

With permission, a computing-intensive course from another discipline may be substituted. Examples of such courses include:

- BME 2000  Biomedical Engineering Computing
- CVNG 1500  Civil Engineering Computing
- STAT 3850  Foundation of Statistics

**Systems Elective Courses**

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**Madrid**

Students can complete a B.A. in computer science at SLU’s campus in Madrid; they may also transfer freely between the Madrid and St. Louis campuses.


**2+SLU**

2+SLU programs are formal transfer agreements for students seeking an associate degree at a partner institution.