



Merritt College Computer Science Program

Associate in Science Degree (Program Control #37964) or Certificate of Achievement (#37966)

Learn Design and Implementation - The Computer Science Associate in Science Degree allows students to gain skill in the design of software and the implementation of software designs. It incorporates study in Mathematics and Physics to enable the student to design models of systems that often cannot be directly measured and observed. This enables the creation of algorithms; an unambiguous specification of how to solve a class of problems. This skill is combined with instruction in implementation (coding), analysis of software designs, and use of a strongly typed programming language to create programs. These two distinct skill sets form the basis for continued study in Computer Science, Computer Engineering, and related fields.

Workforce Degree – The Associate in Science in Computer Science is a terminal degree. It is a Career Education (CE) degree that enables the student to join the software development workforce at the entry level. This degree incorporates courses that confer skills that are responsive to community and industry needs including: Cybersecurity, DevOps, Blockchain Services, Mobile Applications, Agile Project Automation and Continuous Integration, High Performance Computing (HPC), Data Science and Artificial Intelligence. *Universities also consider this degree a transfer degree* that may fulfill the lower division course sequence of a Computer Science baccalaureate. This often permits entry to a baccalaureate program as a junior. The 2014 average salary for a software developer with a Bachelor of Science in Computer Science was \$140,000 per year. The Oakland Metropolitan Chamber of Commerce's 2016 Regional Occupational Analysis of the Bay Area Labor Market projected the demand for Software Developers in the East Bay to grow by 78% in the next 5 years, and to continue to be the top occupation for workforce development efforts Bay Area wide.

Computer Science and Cybersecurity - The Merritt College Computer Science A.S. degree infuses Computer Science competencies with Cybersecurity competencies and is aligned with [curricular guidance](#) from the governing bodies; the Association of Computing Machinery (ACM) and the National Initiative for Cybersecurity Education (NICE). The curriculum is mapped to the nationally defined Knowledge Units (KU) and articulates into four-year programs in both Computer Science and Cybersecurity. Cybersecurity Knowledge Units (KU) and course mappings are published by the National Initiative for Cybersecurity Careers and Studies (NICCS) at <https://niccs.us-cert.gov/training/search/merritt-college>. The curriculum includes instruction in the fundamentals of problem solving and analysis, programming, data structures, and architecture. Additional requirements include Calculus, Physics and Discrete Mathematics. This program takes a contextualized approach to the CS major through the choice of language, C++, and the approach to curriculum subjects. It aims to develop skills in the design and implementation of software that operates correctly at extreme scale. It equips the graduate to select strategies and develop programs that solve complex problems within appropriate constraints such as, time, connectivity, processing, or storage limitations. Students in our Cybersecurity courses have earned national recognition fielding a team that finished #4 in the highest (Gold) bracket of 2017, and #5 in 2018 National Cyber League competition. This merging of Cybersecurity and Computer Science puts Merritt College at the cutting edge of two-year Computer Science programs.

Required Courses

CIS 006	Introduction to Programming	5
<i>or</i>		
CIS 007	Control Structures and Objects	4
CIS 033	Software Architectures and Algorithms	4
CIS 011	Discrete Structures and Logic	4
CIS 078	Digital Architectures for Computation	4
MATH 03A	Calculus I	5
Math 03B	Calculus II	5
PHYS 004A	General Physics with Calculus	5
	<i>MATH 011 accepted as substitute for CIS 011</i>	

Restricted Electives

Courses listed in Recommended Sequence Select one group (12-17 units)

Group A

Cybersecurity – Secure Software Development

CIS 071	Introduction to Information Systems Security	3
CIS 059	Applications in Information Security	3
CIS 056	Secure Coding in Java and .NET	3
CIS 057	Web Application Penetration Testing	3

Group B

Cybersecurity – DevOps (Dev/Sec/Ops):

CIS 055	Hacker Techniques, Exploits, & Incident Handling	3
CIS 060	Computer Forensics Fundamentals	3
CIS 247	Information Systems Skills Challenge	1
CIS 052	Cloud Security Fundamentals	3
CIS 053	Intrusion Detection In-Depth: Compliance, Security, Forensics and Troubleshooting	3
CIS 178	Build Automation for DevOps and QA	4
	<i>CIS 247 requires participation in one round of Ethical Hacking Competition: National Cyber League (NCL), Cyberpatriots, Cyberdefenders, or Equivalent.</i>	

Group C

Blockchain services and Mobile Applications

CIS 066	XML Documents and Applications	2
CIS 093	Cross Platform Mobile Application Development	4
CIS 100	Introduction to Blockchain, Cryptocurrencies, and Identity	3
CS 043	High Performance Web Applications and Services	3

Group D

DevOps – Software Engineering and Continuous Integration:

CIS 051	Introduction to Information Technology Project Management	4
CS 020	Python Application Programming	3
CS 080	Software Engineering	3
CIS 178	Build Automation for DevOps and QA	4
CIS 179	Agile Software Management and Project Automation	3
	<i>This elective qualifies you for the Agile Certified Practitioner exam</i>	
	<i>https://www.pmi.org/certifications/types/agile-acp</i>	

Group E

High Performance Computing, Data Science, and Artificial Intelligence

CIS 020	Python Application Programming	3
MATH 03E	Linear Algebra	3
CIS 008	Introduction to Parallel and Cloud Programming	4
CIS 060	Applications of Artificial Intelligence and Deep Learning	3

Group F

Swift Software Development

CS 025	Swift Application Programming	4
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CS 26	Swift Data Structures and Algorithms	4
CS 27	Swift Universal Framework Applications	4
CIS 247 SMA	Swift Multi-Platform Application Development	3

Major Requirements	31-32
Local Degree General Education Requirements*	19
Restricted Electives	12-17
Total Units	55-61

Recommended Course Sequence

1st Semester			
CIS 006	Introduction to Programming		5
or			
CIS 007	Control Structures and Objects		4
MATH 03A	Calculus I		5
ENGL 01A	Composition and Reading		4
Or	Critical Thinking in Reading and Writing		3
ENGL 005			
		1 st Semester Units	16
2nd Semester			
CIS 033	Software Architectures and Algorithms		4
MATH 03B	Calculus II		5
PHYS 04A	General Physics with Calculus		5
		2 nd Semester Units	14
3rd Semester			
CIS 011	Discrete Structures and Logic		4
Restricted Elective Courses			6
General Education Courses			5
		3 rd Semester Units	15
4th Semester			
CIS 078	Digital Architectures for Computation		4
General Education Courses			5
Restricted Elective Courses			6
		4 th Semester Units	15
		Total Units	60

Funding, Student Success, and Support Programs that *Help You Get Through*: Grants, programs, and scholarships are available to pay for completing this degree. Peralta Promise, California First Year Free, Oakland Promise and East Bay College Fund, EOPS/CARE, Puente, SANKOFA, Street Scholars, CAFYES



Free Head Start for Oakland Unified School District (OUSD) and East Bay Career Pathways Trust

High School Students can earn both college and high school credit by completing preparatory courses through [Dual and Concurrent Enrollment](#) and the Merritt Summer Bridge to STEM program

Mobile Applications and Game Software Development Sequence

Foundations of First Person / Augmented Reality / Virtual Reality / Location Based Geographic Positioning System (GPS) / Local Mobile Apps Using SF /Oakland/ Bay Area Street Maps and



1. [CIS 6 or 7](#) – *Control Structures and Objects* - Learn Object Oriented Programming in C++ . This UC/CSU transfer course includes gives you the fundamentals of programming applicable to any language. This course uses a textbook that has versions available for Java and Python and you can easily learn those languages by re-writing your code from this course using those textbooks. The skills you learn in this course will let you create the objects that are manipulated in the course that follows CIS 33.
2. [CIS 33](#) – *Software Architectures and Algorithms* -This course is taught in C++ and you learn how to select from and implement data structures that give you efficient access and express complex relationships. The data set used is the San Francisco and [Oakland Open Street Maps \(OSM\)](#). This collection of streets, routes, GPS geocode and addresses contains about 8,000,000 nodes and enables you to see the immediate performance impact of your design. You apply abstract data types and algorithms to this data set and gain understanding of their applicability. For example you will place the nodes into a Priority Queue and understand how this data structure lets you efficiently identify nearby nodes.
3. [CIS 93](#) – *Cross Platform Mobile Applications* - This course uses the data structures and algorithms you created in CIS 33 using the San Francisco and Oakland Open Street maps as the world in which your game happens. You will add different objects to this game framework of the local world. You will have the ability to focus on the details of the game engine because you already understand the data structures used for the map from CIS 33 coursework. You can add assets such as images to create Augmented Reality, Virtual Reality, or First-Person Experience application.

Then take additional Game Design and Development courses found at our Peralta sister colleges

PCCD College	Subject	Course #	Game Related Course Title
Berkeley City College	MM/AN	040A	Introduction to Game Design
Berkeley City College	MM/AN	040B	Game Level Design
Berkeley City College	MM/AN	041A	Introduction to Game Scripting
Berkeley City College	MM/AN	041B	Video Game Development
Berkeley City College	MM/AN	044	Applications of Virtual and Augmented Reality
Berkeley City College	MM/AN	050	Career Preparation for Animation and Game Industries
Berkeley City College	MM/AN	055A	Animation and Game Studio Practice
Berkeley City College	MM/AN	055B	Animation and Game Studio Practice

Berkeley City College	MM/AN	510	Introduction to 3D Modeling
Berkeley City College	MM/AN	511	3D Character Animation
Berkeley City College	MM/AN	512	Game Level Design
Berkeley City College	MM/AN	550	Animation and Game Studio Practice
Laney College	MEDIA	070	XR Design: Creating Virtual Reality
Laney College	MEDIA	072	3D Modeling for AR/VR
Laney College	MEDIA	075	Augmented Reality
Laney College	MEDIA	077	Virtual Cinema
Laney College	MEDIA	080	Advanced AR/VR Unity Training



UNREAL
ENGINE

[Unreal Engine 4](#) is a complete suite of game development tools made by game developers –

From mobile games to console blockbusters Unreal 4 Engine gives you everything you need to build a [high performance game that runs everywhere](#). *Free* downloads give *all engine features*, the full suite of integrated tools, and **the C++ source code for the entire engine**. You'll find documentation, tutorials and support resources, plus tons of free content, including templates, sample games and complete projects to quickly get on your way to building anything you want.



[OpenStreetMap](#) is a collaborative project to create a free editable map of the world. The geodata underlying the map is considered the primary output of the project.



Unity is a cross-platform game engine developed by [Unity Technologies](#). The engine had been extended to support more than 25 platforms. The engine can be used to create three-dimensional, two-dimensional, virtual reality, and augmented reality games, as well as simulations and other experiences. The engine has been adopted by industries outside video gaming, such as film, automotive, architecture, engineering and construction. o Create, operate, and monetize interactive and immersive experiences with the world's leading platform for creating and operating interactive, real-time 3D content. [Student Developer packs are offered](#) upon proof of enrollment at an academic institution.

You must provide your own hardware that meets minimum requirements for your selected game engine framework t Unity system requirements can be found at their [recommended specifications details](#) Unreal Engine 4 Hardware and Software Specifications. can be found at <https://docs.unrealengine.com/en-US/GettingStarted/RecommendedSpecifications/index.html>

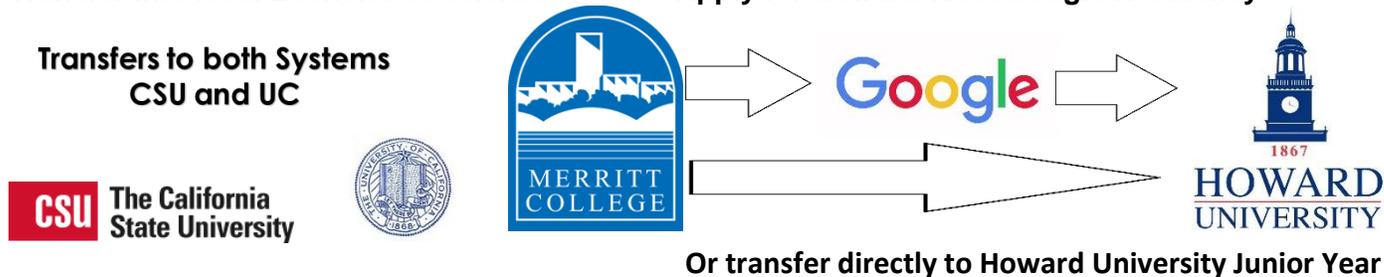
Transfer Opportunities

Graduates of this program are considered to have completed preparation to transfer to a baccalaureate program in the Computer Science major, or related fields of study. They will have completed instruction in the subjects found in the lower division courses of a Computer Science baccalaureate:

1. Writing programs in an object-oriented language
2. The Implementation and use of abstract data types, libraries, and frameworks.
3. Formal logic, proofs, estimation of algorithm completion, estimates of run time magnitude
4. Machine architecture, assembly language, combinatorial logic, and sequential logic
5. Calculus 1 – Including: Differential Equations, Limits, Theorems
6. Calculus 2 – Including: Definite integrals, Methods of integration, series, parametric equations
7. Physics - Topics including: Motion, forces, gravity, energy, momentum, equilibrium, oscillations

The required major courses are accepted for transfer to the University of California (UC) system, the California State University (CSU) system, Cal Poly systems, and Howard University. [Merritt's participation in the Howard West initiative](#) enables transfer students to apply for a residency with Google as part of their baccalaureate program. Transfer General Education (GE) requirements are different from local GE requirements; see a counselor for specific details.

Transfer into local Bachelor of Science or Apply for Howard West/Google Residency



Workforce and Career Opportunities

Graduates of this program who enter the workforce as entry level Software Developer gain access to rewarding jobs and careers. At Merritt, the entry level core skills are enriched by sets of restricted electives tailored to specific workforce sectors and job opportunities. These electives enable graduates to compete for positions in which knowledge of the elective subject matter commands a salary premium over baseline compensation. The information below is based on jobs posted on Indeed.com as of 12/2018.

Graduates of the two-year program in Computer Science also meet the qualifications for employment in the California [STEM Core Network](#); a partnership of major scientific/technical employers including NASA and federally funded laboratories, and other employers. Merritt College is a partner in the STEM Core Initiative as well as an awardee in the National Science Foundation Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science ([NSF INCLUDES](#)) initiative. STEM Core Network candidates can start via the Merritt College Computer Science Stem Core Dual Enrollment Program available to Oakland High School students (see page 10.)

UC Transfer Course Agreement - All Departments

Merritt College Academic Year 2018-2019

****IMPORTANT****

This agreement lists courses transferable for unit credit at all UC campuses.

It is based on information from the current California community college catalog and is valid for the academic year indicated at the top of this agreement.

Courses marked with "UC-" will satisfy the five areas of the seven-course requirements:

E = English, M = Math, H = Humanities, B = Behavioral and Social Sciences, S = Biological and Physical Sciences.

INFORMATION ABOUT UC'S TRANSFERABLE COURSE AGREEMENTS

Honors Course Credit Limitation

- Duplicate credit will not be awarded for both the honors and the regular versions of a course.
- Credit will be awarded only to the first course completed with a grade of C or better.

Course Repeatability

- An "ea" after the unit value of a course on this agreement is meant to indicate that the course may be repeated for credit under CCC campus policies.
- Since campus policies on repeatability vary, the "ea" indicator does not guarantee that UC will grant credit for every course that appears multiple times on a student's transcript. See the UC TGA for possible credit limitations.

Computer Information Systems

Course	Title	IGETC Areas	Semester Units	UC Areas
CIS 1	Introduction to Computer Information Systems		4.00	
CIS 5	Introduction to Computer Science		5.00	
CIS 6	Introduction to Computer Programming		5.00	
CIS 7	Control Structures and Objects		4.00	
CIS 11	Discrete Structures and Logic		4.00	
CIS 33	Software Architectures and Algorithms		4.00	
CIS 78	Digital Architectures for Computation		4.00	
CIS 93	Cross Platform Mobile Application Development		4.00	

CSU Baccalaureate Level Course List - All Departments

Merritt College
Academic Year 2018-2019

Computer Information Systems		
Course	Title	Semester Units
CIS 1	Introduction to Computer Information Systems	4.00
CIS 5	Introduction to Computer Science	5.00
CIS 6	Introduction to Computer Programming	5.00
CIS 7	Control Structures and Objects	4.00
CIS 8	Introduction to Parallel and Cloud Programming	4.00
CIS 11	Discrete Structures and Logic	4.00
CIS 33	Software Architectures and Algorithms	4.00
CIS 40	Introduction to Data Base Management	4.00
CIS 42	Spreadsheet Applications	4.00
CIS 48NA-TZ	Selected Topics in Computer Information Systems	0.50 - 9.00
CIS 49	Independent Study in Computer Information Systems	0.50 - 5.00
CIS 51	Introduction to Information Technology Project Management	4.00
CIS 52	Cloud Security Fundamentals	3.00
CIS 53	Intrusion Detection In-Depth: Compliance, Security, Forensics and Troubleshooting: Compliance	3.00
CIS 54	IT Security Goals, Strategy, Policy, and Leadership	3.00
CIS 55	Hacker Techniques, Exploits & Incident Handling	3.00
CIS 56	Secure Coding in Java and .NET	3.00
CIS 57	Web Application PEN Testing	3.00
CIS 58	Hacker Guard - Baseline Training for IT Administrators and Operations	3.00
CIS 59	Applications in Information Security	3.00
CIS 60	Computer Forensics Fundamentals	3.00
CIS 71	Introduction to Information Systems Security	3.00
CIS 72	Systems and Network Administration	3.00
CIS 73	Networking Concepts	4.00
CIS 78	Digital Architectures for Computation	4.00
CIS 93	Cross Platform Mobile Application Development	4.00
CIS 100	Introduction to Blockchain, Cryptocurrencies, and Identity	3.00
	Effective Su2019	
CIS 106A	Routing and Switching Networks	3.00
CIS 106B	Scaling Networks	3.00
CIS 106C	Connecting Networks	3.00
CIS 178	Build Automation for DevOps and QA	4.00

Workforce Opportunities

The *Entry Level Software Developer* - will have the main competencies to develop software as part of a team, for their own business, or for purposes of investigation and invention. They will be able to:

1. Select the appropriate design and implementation to solve a problem within given constraints.
2. Analyze computer architecture to formulate estimates of performance.
3. Explain the fundamentals of a problem-solving approach and analysis.

These competences enable the student to create or interpret software designs, discuss design choices, align their efforts with project goals, and estimate how well the program will perform in the intended computer system. The Entry Level Software Developer has sufficient skill to join a software team and work under the supervision of more senior members. They have the foundation to quickly recognize classes of problems and communicate using appropriate Terms of Art specific to the software domain and contribute to team efficiency and goals.



Entry Level software developer					
Salary Est.	# Jobs	Position Types		Location	
\$50,000	160	Full-time	171	San Francisco	18
\$65,000	124	Internship	17	San Jose,	17
\$85,000	94	Temporary	15	California	12
\$100,000	62	Contract	10	Los Angeles	8
\$120,000	33	Part-time	7	San Diego	7
Total		473			
Source: Indeed.com <- click to view					

Students who choose to complete only the degree requirements are well positioned to quickly enter the software developer workforce. Many companies have specific tool requirements and customized environments found only in their bespoke business operations and products. These can't be replicated or generalized, and the brand-new member of the software development team must learn them on the job.

Students who choose to complete a restricted elective often have the opportunity to learn from practitioners in the elective area. As with the [Merritt cybersecurity program](#) which is available in the degree as 2 distinct electives, the department seeks to recruit as [adjunct faculty and guest lecturers professionals working in the elective area](#). This helps build up the community of practice around that workforce specialty.

If you are a professional in one of the restricted elective communities of practice consider becoming a guest lecturer. You may also apply to joining our adjunct faculty pool by completing [the CIS adjunct faculty application with Peralta Human resources](#) and [sending me your resume](#).

Elective Group A -The Secure Software Developer has sufficient skill to join a software team and work under the supervision of more senior members. The elective provides instruction and application of best practices for securing data whether stored (at rest) or in transit. Covers use of public key encryption, secure authentication and authorization (OAUTH), Web Application Penetration testing, and the use of hashes to protect integrity and detect tampering.



Cybersecurity - Secure Software Development					
Salary Est.	# Openings	Position Types		Location	
		Full-time			
\$75,000	2824	Contract	142	San Francisco	654
\$105,000	2226	Part-time	87	San Diego	252
\$120,000	1668	Internship	84	San Jose	213
\$130,000	1235	Commission	49	Sunnyvale	172
\$145,000	579	Temporary	36	Los Angeles	145
Total					
8532					

Source: [Indeed.com](https://www.indeed.com)

Elective Group B - The Cybersecurity Dev/Sec/Ops Software Developer has completed instruction in Cybersecurity Operations and is prepared to use software **development** skills to implement systems software that automate **security operations** (Dev/Sec/Ops.) They have completed instruction in intrusion detection, systems and network administration, forensics and cloud security. They have taken part in ethical hacking competition which includes practice of skills in network analysis, penetration, and defense.



Cybersecurity - DevOps (Dev/Sec/Ops)					
Salary Est.	# Jobs	Position Types		Location	
		Full-time			
\$110,000	105	Full-time	116	Santa Clara	27
\$125,000	86	Internship	11	San Francisco	20
\$130,000	70	Contract	6	San Diego	15
\$140,000	50	Temporary	2	Palo Alto	13
\$150,000	24	Part-time	1	Sunnyvale	7
Total					
335					

Source: [Indeed.com](https://www.indeed.com)

Elective Group C - The Blockchain Services and Mobile Applications Software Developer has completed instruction in Blockchain – a cryptography based distributed ledger. This technology enables reliable global transactions without intermediaries. The graduate has completed instruction in XML and self-validating documents, cross platform mobile applications development, and implementation of transaction oriented high- performance web services. This enables the graduate to implement an integrated combination of mobile applications and back-end services that enables new classes and categories of global applications based on Blockchain technology.



Blockchain Services and Mobile Applications					
Salary Est.	# Jobs	Position Types		Location	
\$95,000	14	Full-time	15	San Francisco	5
\$120,000	11	Internship	1	Los Angeles	3
\$125,000	10	Part-time	1	San Francisco Bay Area	2
\$130,000	5	Temporary	1	Foster City	2
\$135,000	4			Woodland Hills	1
Total				44	
Source: Indeed.com					

Elective Group D - The DevOps – Software Engineering Automation and Continuous Integration Software Developer has instruction in how to automate the build, test, and deployment of software in a Continuous integration (CI) pipeline. They are essential members of a software team, or an independent entrepreneur using automation to streamline their efforts while delivering reliable products. Completing the elective qualifies the graduate to take the [Project Management Institute Agile Certified Practitioner](#) (PMI-ACP) exam



DevOps - Software Engineering Automation and Continuous Integration					
Salary Est.	# Jobs	Position Types		Location	
\$115,000	310	Full-time	355	San Francisco	76
\$125,000	262	Contract	13	San Diego	41
\$130,000	217	Internship	12	Palo Alto	33
\$140,000	141	Commission	1	San Jose	20
\$145,000	91			Sunnyvale	20
Total				1021	
Source: Indeed.com					

Elective Group E - The High Performance Computing (HPC), Data Science, and Artificial Intelligence (AI) Software Developer has instruction in the use of parallel programming including Graphics Processing Units and cloud computers. They also have instruction in the use of AI Libraries and scripting languages to create systems that learn from data, detect patterns, classify artifacts, and make suggestions.



High Performance Computing, Data Science, and Artificial Intelligence					
Salary Est.	# Jobs	Position Types		Location	
		\$90,000	20	Full-time	33
\$110,000	16	Contract	1	Santa Clara	7
\$130,000	12	Internship	1	Palo Alto	4
\$145,000	8			Sunnyvale	3
\$160,000	4			San Francisco Bay Area	3
Total		60			

[Source: Indeed.com](https://www.indeed.com)

Elective Group F - The Swift Software Developer is able to write software that runs on iPhones (iOS), Apple Watch (watchOS), Apple TV (tvOS), and Mac computer (macOS). Students completing this elective are able to enter the software development workforce having completed instruction in writing for Apple's many platforms. It incorporates instruction in best practices and competencies for the entry level software developer. It incorporates study, analysis, implementation of classic data structures algorithms that lead to applications that perform well within the constraints of the targeted platform.



Swift Software Developer					
Salary Est.	# Jobs	Position Types		Location	
		\$90,000	95	Full-time	225
\$110,000	56	Contract	16	San Francisco Bay Area	76
\$130,000	19	Internship	6	Mountain View	17
\$145,000	8			Palo Alto	14
\$160,000	12			San Jose	14
Total		247			

[Source: Indeed.com](https://www.indeed.com)

Start Where You Are Today



Merritt College offers the rare opportunity to learn Computer Science and Cybersecurity from the world's leading industry experts — for a fraction of the cost of bootcamps or 4-year universities. And with the California Promise Grant, first year registration fees are free. Our accredited 2-year program offers a mix of in-person and online learning, allowing students to prepare for a new career while maintaining other obligations. The Cybersecurity program is now in its fourth year of helping students win national competitions and find jobs with top companies. AC Transit from Fruitvale BART station makes it easy to reach our campus located in the beautiful rolling hills of Oakland, CA. Merritt College welcomes people from all backgrounds to...

[Apply and Enroll!](#)

<http://www.merritt.edu/wp/steps/>

High School Juniors: Apply for Merritt's Computer Science STEM Core DE Program



High School students finishing their Junior year should apply for one of the 35 spots in the fall Merritt Computer Science Stem Core Dual Enrollment Program. This cohort based program includes an embedded student support specialist facilitating student success through tutoring, community building events, and access to guidance and counseling resources. Activities begin the fall of senior year with Dual Enrollment in Merritt college courses. The embedded support specialist continues support through the spring term courses and facilitates participation in Merritt Summer Bridge activities. Students will also hear directly from industry professionals about their college career and learn the in's and out's of being a successful college student. During fall and spring, Merritt math and Computer and Information Systems faculty will teach dual-credit courses on-site at the high schools, preparing students to take college Calculus, with a specific degree path in mind, upon high school graduation. Through membership in student success programs like SANKOFA and Puente, students gain additional benefits that include priority registration, transition and retention support. This is a special program coordinated by the Merritt College Dean of Math, Science, and Applied Technology. [Contact the Dean](#) or the [STEM Core program coordinator](#) for application requirements and instructions.

MERRITT COLLEGE

STEM CORE

Will you be a Merritt College Student in Fall 2019?

Interested in Math, Cybersecurity, Computer Science?

Eligible for Math 1 and Trigonometry in the Fall?

Apply to STEM Core!

STEM Core is a cohort-based learning community at Merritt College that seeks to increase the number of students in the field of cybersecurity and computer science. Program participants will take classes together, receive academic counseling, tutoring, intensive math preparation, and a chance to compete in high-quality paid tech internships. Students will explore careers in Cybersecurity and Computer Science and be prepared to transfer to a 4-year computer science program in such as University of California Berkeley, UCLA, Stanford, Cal State East Bay, San Jose and San Francisco States and the like. Women, Veterans and first-generation college students are strongly encouraged to apply.

STEM CORE PROGRAM BENEFITS

ACADEMIC & SOCIAL SUPPORT

- Extra tutoring and student support
- Small learning group

GUARANTEED REGISTRATION FOR ALL STEM CORE COURSES

A.S. Computer Science Calculus Ready		60	A.S. Computer Science Pre-Calculus Ready		60
1st Semester/Fall 2019		15	1st Semester/Fall 2019		15
CIS 7	Introduction to Programming	4	CIS 6	Introduction to Programming	4
ENGL 1A/5	Comp. & Reading/Critical Thinking	4	ENGL 1A/5	Comp. & Reading/Critical Thinking	4
MATH 3A	Calculus I	5	MATH 1	Pre-Calculus	4
	General Education	2	MATH 50	Trigonometry	3
2nd Semester/Spring 2019		14	2nd Semester/Spring 2019		15
CIS 33	Software Architectures and Algorithms	4	CIS 33	Software Architectures and Algorithms	4
MATH 3B	Calculus II	5	MATH 3A	Calculus I	5
PHYS 4A	Gen. Physics with Calculus	5		General Education	6
3rd Semester/Fall 2020		16	3rd Semester/Fall 2020		15
CIS 11	Discrete Structures and Logic	4	CIS 11	Discrete Structures and Logic	4
	General Education	6	MATH 3B	Calculus II	5
	Restricted Electives	6	PHYS 4A	Gen. Physics with Calculus	5
4th Semester/Spring 2021		15	4th Semester/Spring 2021		15
CIS 78	Digital Architectures for Computation	4	CIS 78	Digital Architectures for Computation	4
	General Education	4		General Education	5
	Restricted Electives	7		Electives	6

FOR MORE INFORMATION

✉ merritt-stemcore@peralta.edu

☎ (650) 492 8155

🌐 interest form at <https://bit.ly/MerrittSTEMCore> or scan the QR code



MATH BRIDGE TO CALCULUS

- Complete Precalculus, Trigonometry and Calculus in two semesters
- STEM Core cohorts around the state pass classes at 20-30% higher rates than non-STEM Core students
- Extra tutoring, priority registration, internships limited to STEM Core students

INTERNSHIP & FIELD TRIPS

- Compete for high quality paid internships at tech and other employers. Field trips to universities, local technology companies and research institutes

REQUIREMENTS

- Interested in STEM, Cybersecurity and Computer Science
- Full time Merritt College student

