Articulation Agreement by Major

Effective during the 2022-2023 Academic Year

To: University of California, Merced	From: De Anza College
2022-2023 General Catalog, Semester	2022-2023 General Catalog, Quarter

Computer Science and Engineering, B.S.

ADMISSIONS MAJOR SELECTION CRITERIA

Thank you for your interest in UC Merced!

For admission to the **Computer Science and Engineering, B.S.** major, students must earn an overall transferrable GPA of 2.4 or better, and complete classes articulated with the following UC Merced courses by the end of spring term prior to fall enrollment or by the end of fall term prior to spring enrollment. All major preparation courses requires a "C" or better.

REQUIRED major preparation courses:

- *CSE 020, a grade of B or better must be earned.
- * CSE 021, a grade of B or better must be earned.
- MATH 021, MATH 022, MATH 023, MATH 024
- PHYS 008 & 008L, PHYS 009 & 009L

* UCM Computer Science and Engineering (CSE) department often will accept 1 course from the California Community College to count for both CSE 020 and CSE 021. Please see the articulation below to determine if that scenario applies to your college.
* Effective Fall 2021, CSE 020 and CSE 021 are no longer offered at UC Merced. However, they will remain as courses required for admissions.

Starting for Fall 2024 Applicants:

- ++ CSE 030 (Data Structures)

++ Starting for Fall 2024 applicants, Computer Science and Engineering is proposing CSE 030, with a grade of C or better to be completed for selection. Applicants are strongly encouraged to complete the course by the end of Spring 2024 semester/quarter to be prepared when this proposal is approved.

Additional Major Preparation Recommended Prior to Transfer:

- CSE 015, *CSE 022, CSE 024, *CSE 030, CSE 031
- ENGR 065
- Complete one of the following: BIO 003 or 005 or 043 or 047 or ESS 001 or 005
- MATH 032

* CSE 022 (Introduction to Programming) and CSE 030 (Data Structures) are highly recommended to be completed before transfer. Doing so can help speed up time towards graduation.
* Dual Counting between CSE 020 &/or CSE 021 and CSE 022 is permissible granted that the same course articulation exist for both sending courses.
* Dual Counting between CSE 020 &/or CSE 021 and CSE 024 is permissible granted that the same course articulation exist for both sending courses.
* Dual Counting between CSE 024 and CSE 030 is permissible granted that the same course articulation exist for both sending courses.

AP Exam Score & Course Exemptions

- An AP Computer Science: Comp Science A score of 5 exempts CSE 022
- An AP Mathematics: Calculus AB score of 4 or 5 exempts Math 021
- An AP Mathematics: Calculus BC score of 3 exempts MATH 021
- An AP Mathematics: Calculus BC score of 4 or 5 exempts Math 021 and Math 022
- An AP Mathematics: Calculus BC Subscore AB score 3 or higher exempts Math 021
- An AP Environmental Sciences: score of 4 or 5 exempts ESS 001
- An AP Physics: Physics C: Mechanics: score of 5 exempts PHYS 008 and PHYS 008L

UC Merced Advance Placement (AP) and International Baccalaureate (IB) credit policies are detailed in the link below:
Advance Placement (AP) and International Baccalaureate (IB) Examinations

IMPORTANT TRANSFER INFORMATION

In addition to the Major Selection Criteria, all Upper-Division Transfer applicants must meet minimum University of California admissions requirements. Visit https://admissions.ucmerced.edu/transfer/requirements for more specific UC Merced admissions information.

Prior to Transferring to UC Merced, please be advised of the following for Junior Transfers:

1) WRI 001 and WRI 010 are admissions requirements: In most situations, WRI 001 is fulfilled by IGETC 1A English Composition and WRI 010 is fulfilled by IGETC 1B Critical Thinking/English Composition. However best practice is to complete the articulated course for WRI 001 and WRI 010. Please scroll towards the bottom of the agreement to find the articulation for each course.

2) Transfer Admissions Guarantee (TAG): UC Merced is one of the six UC's that offers Transfer Admissions Guarantee. Please visit the TAG website

for more information: https://admissions.ucmerced.edu/transfer/tag

3) General Education (GE Requirements): While general education is not required for admission, it can help speed up your time to graduation once you transfer to UC Merced. We highly recommend reviewing the **Transfer Students: Satisfying General Education** page in the catalog for a more extensive explanation of the requirements.

Please note the School of Engineering strongly discourages IGETC, but accepts it; students are encouraged to focus primarily on lower division major preparation and fulfilling UCM minimum admissions requirements. If you elect to complete IGETC, the courses may double count with the major courses listed below. Please visit your Community College Counselor to learn more.

4. This agreement displays all lower-division (or Major Preparation) courses required in the major. UC Merced courses on the left, approved (articulated) transfer courses to the right.

5. Changes to this Agreements: Major requirements are subject to change from one academic year to the next. Newly-articulated courses are added on a rolling basis, and articulated courses can be revised. Visit ASSIST every semester for the latest information and consult with an Academic Counselor at your institution on a regular basis.

For more questions about admissions, please email: transfer@ucmerced.edu.

ABOUT THIS MAJOR

The undergraduate major in Computer Science and Engineering is designed to provide students with both breadth and depth in the exciting and rapidly expanding fields of:

- Computer science—the study of computation, including algorithms and data structures, and
- Computer engineering—including hardware, software and network architecture.

A degree in Computer Science and Engineering from UC Merced prepares students to assume leadership roles in designing, building and implementing a vast array of powerful new technologies that will continue to advance humankind. Our curriculum in Computer Science and Engineering at UC Merced builds a solid foundation for innovation in areas ranging from robotics and automation, computer networks, security, graphics and visualization, and computer vision to informatics, machine learning and artificial intelligence. Careers in computer science and engineering are among the most satisfying and rewarding of any engineering discipline.

Visit the 22-23 catalog page for the Lower Division and Upper Division requirements for the major.

MAJOR PREPARATION COURSES REQUIRED FOR TRANSFER

****REFER TO TOP OF AGREEMENT****
Required for admission

CSE 020 - Introduction to Computing I (2.00) • *Minimum grade required: B or better*	←	**CIS 22A** - Beginning Programming Methodologies in C++ (4.50) **--- Or ---** **CIS 36A** - Introduction to Computer Programming Using Java (4.50)
--- And ---		
CSE 021 - Introduction to Computing II (2.00) • *Minimum grade required: B or better*	←	**CIS 22B** - Intermediate Programming Methodologies in C++ (4.50) **--- Or ---** **CIS 36B** - Intermediate Problem Solving in Java (4.50)
--- Or ---		

CSE 020 - Introduction to Computing I (2.00)

--- And ---

CSE 021 - Introduction to Computing II (2.00)

- *Minimum grade required: B or better*

←

CIS 22A - Beginning Programming Methodologies in C++ (4.50)

--- And ---

CIS 22B - Intermediate Programming Methodologies in C++ (4.50)

--- Or ---

CIS 22A - Beginning Programming Methodologies in C++ (4.50)

--- And ---

CIS 22BH - Intermediate Programming Methodologies in C++ - HONORS (4.50)

--- Or ---

CIS 26A - C as a Second Programming Language (4.50)

--- Or ---

CIS 26B - Advanced C Programming (4.50)

--- Or ---

CIS 27 - Programming in C++ for C/Java Programmers (4.50)

--- Or ---

CIS 41A - Python Programming (4.50)

--- And ---

MATH 021 - Calculus I for Physical Sciences & Engineering (4.00)

←

MATH 1A - Calculus (5.00)

--- And ---

MATH 1B - Calculus (5.00)

--- Or ---

MATH 1AH - Calculus - HONORS (5.00)

--- And ---

MATH 1BH - Calculus - HONORS (5.00)

MATH 022 - Calculus II for Physical Sciences & Engineering (4.00)

←

MATH 1B - Calculus (5.00)

--- And ---

MATH 1C - Calculus (5.00)

--- Or ---

MATH 1BH - Calculus - HONORS (5.00)

--- And ---

MATH 1CH - Calculus - HONORS (5.00)

MATH 023 - Vector Calculus (4.00)

←

MATH 1C - Calculus (5.00)

--- And ---

MATH 1D - Calculus (5.00)

--- Or ---

MATH 1CH - Calculus - HONORS (5.00)

--- And ---

MATH 1DH - Calculus - HONORS (5.00)

MATH 024 - Linear Algebra and Differential Equations (4.00)

←

MATH 2A - Differential Equations (5.00)

--- And ---

MATH 2B - Linear Algebra (5.00)

--- And ---

PHYS 008 - Introductory Physics I for Physical Sciences (3.00) **--- And ---** **PHYS 008L** - Introductory Physics I for Physical Sciences Lab (1.00)	←	**PHYS 4A** - Physics for Scientists and Engineers: Mechanics (6.00)
PHYS 009 - Introductory Physics II for Physical Sciences (3.00) **--- And ---** **PHYS 009L** - Introductory Physics II for Physical Sciences Lab (1.00)	←	**PHYS 4B** - Physics for Scientists and Engineers: Electricity and Magnetism (6.00) **--- And ---** **PHYS 4C** - Physics for Scientists and Engineers: Fluids, Waves, Optics and Thermodynamics (6.00)

ADDITIONAL MAJOR PREPARATION COURSES

Minimum grade required: C or better

CSE 015 - Discrete Mathematics (4.00) • *Recommended to be completed prior to transfer*	←	**MATH 22** - Discrete Mathematics (5.00) **--- Or ---** **MATH 22H** - Discrete Mathematics - HONORS (5.00)
CSE 022 - Introduction to Programming (4.00)	←	**CIS 22A** - Beginning Programming Methodologies in C++ (4.50) **--- And ---** **CIS 22B** - Intermediate Programming Methodologies in C++ (4.50) **--- Or ---** **CIS 22A** - Beginning Programming Methodologies in C++ (4.50) **--- And ---** **CIS 22BH** - Intermediate Programming Methodologies in C++ - HONORS (4.50) **--- Or ---** **CIS 26A** - C as a Second Programming Language (4.50) **--- Or ---** **CIS 27** - Programming in C++ for C/Java Programmers (4.50) **--- Or ---** **CIS 36A** - Introduction to Computer Programming Using Java (4.50) **--- And ---** **CIS 36B** - Intermediate Problem Solving in Java (4.50) **--- Or ---** **CIS 41A** - Python Programming (4.50)
CSE 024 - Advanced Programming (4.00)	←	**CIS 26B** - Advanced C Programming (4.50) **--- Or ---** **CIS 26BH** - Advanced C Programming - HONORS (4.50)
CSE 030 - Data Structures (4.00) • *Recommended to be completed prior to transfer* • ***REFER TO TOP OF AGREEMENT***	←	**CIS 22C** - Data Abstraction and Structures (4.50)
CSE 031 - Computer Organization and Assembly Language (4.00) • *Recommended to be completed prior to transfer*	←	No Course Articulated
ENGR 065 - Circuit Theory (4.00)	←	No Course Articulated

BIOLOGICAL OR ENVIRONMENTAL SYSTEMS SCIENCE REQUIREMENT

Select 1 Course from the following

Minimum grade required: C or better
Recommended to be completed prior to transfer

BIO 003 - To Know Ourselves: Molecular Basis of Health and Disease (4.00)	←	No Course Articulated

BIO 005 - Concepts & Issues in Biology Today (4.00)	←	**BIOL 10** - Introductory Biology (5.00) **--- Or ---** **BIOL 10H** - Introductory Biology - HONORS (5.00)
BIO 043 - Biodiversity and Conservation (4.00) Same-As: ESS 043	←	No Course Articulated
BIO 047 - Astrobiology (4.00) Same-As: ESS 047	←	No Course Articulated
ESS 001 - Introduction to Earth Systems Science (4.00)	←	No Course Articulated
ESS 005 - Introduction to Biological Earth Systems (4.00)	←	No Course Articulated

LOWER DIVISION MAJOR REQUIREMENTS

Minimum grade required: C or better

MATH 032 - Probability and Statistics (4.00)	←	**MATH 23** - Engineering Statistics (5.00)

ACADEMIC WRITING - CHOOSE ONE COURSE FROM:

****REFER TO TOP OF AGREEMENT****
Minimum grade required: C or better

WRI 001 - Academic Writing (4.00)	←	**ESL 5** - Advanced Composition and Reading (5.00) **--- Or ---** **EWRT 1A** - Composition and Reading (5.00) **--- Or ---** **EWRT 1AH** - Composition and Reading - HONORS (5.00) **--- Or ---** **EWRT 1AS** - Intensive Composition and Reading Stretch: First Quarter (5.00) • *UC credit limitation applies; refer to UC-transferability list* **--- And ---** **EWRT 1AT** - Intensive Composition and Reading Stretch: Second Quarter (5.00) • *UC credit limitation applies; refer to UC-transferability list*

COLLEGE READING AND COMPOSITION - CHOOSE ONE COURSE FROM:

****REFER TO TOP OF AGREEMENT****
Minimum grade required: C or better

WRI 010 - College Reading and Composition (4.00)	←	**COMM 9** - Argumentation: Analysis of Oral and Written Communication (5.00) **--- Or ---** **COMM 9H** - Argumentation: Analysis of Oral and Written Communication - HONORS (5.00) **--- Or ---** **EWRT 1B** - Reading, Writing and Research (5.00) **--- Or ---** **EWRT 1C** - Literature and Composition (5.00) **--- Or ---** **EWRT 2** - Critical Reading, Writing and Thinking (5.00) **--- Or ---** **EWRT 2H** - Critical Reading, Writing and Thinking - HONORS (5.00) **--- Or ---** **PHIL 3** - Critical Thinking and Writing (5.00)

END OF AGREEMENT