Articulation Agreement by Major

Effective during the 2022-2023 Academic Year

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

Chemical Engineering, B.S.

GENERAL INFORMATION FOR ALL MAJORS

All transfer applicants must satisfy University of California admissions eligibility requirements as well as meeting campus admission selection criteria. Completing the UC transfer admission requirements in English and mathematics by the end of the fall term prior to the fall application quarter makes an applicant more competitive for admission to UCSB. All admission requirements must be completed by the end of spring prior to transfer. For more information on UC admissions eligibility requirements and admission to UCSB, please visit the Admissions website: www.admissions.ucsb.edu

This articulation agreement lists course-to-course or sequence-to-sequence substitutions for preparation in the major. **Transfer students are strongly encouraged to complete as many major preparatory courses as possible prior to enrolling at UCSB. Completion of all major preparatory courses is not an admissions requirement, but some majors require certain courses to be completed prior to transfer with a specified GPA, and completion or near completion of major preparatory courses will help students move more efficiently toward graduation after transfer.**

Please note that the course "equivalencies" do not necessarily apply to UCSB general education. For information concerning satisfaction of UCSB general education requirements, please refer to the General Education/Breadth articulation agreement.

Advanced Placement (AP) and **International Baccalaureate (IB)** exams may or may not be used to meet course requirements, depending on the exam. Please refer to the AP Chart and IB Chart in the UCSB General Catalog for information on how we use AP and IB exams.

GENERAL EDUCATION FOR THE COLLEGE OF ENGINEERING

General Education Information: Students should focus on completing major preparation requirements. If time permits, students may also take courses to fulfill either UCSB General Education requirements or IGETC (Intersegmental General Education Transfer Curriculum). Students who will not complete IGETC prior to transfer should refer to the College of Engineering General Education articulation agreement. UCSB's General Education requirements do not need to be completed prior to transfer, but students who choose to follow College of Engineering General Education should complete two to three General Education courses prior to transfer. For more information concerning satisfaction of UCSB General Education requirements, student may also refer to the General Engineering Academic Requirements (GEAR) publicaton at https://engineering.ucsb.edu/undergraduate/academic-advising/gear-publications

CHEMICAL ENGINEERING, B.S.

Please visit the department's website to learn more about this major: www.chemengr.ucsb.edu

ADMISSION SELECTION CRITERIA: Applicants to the Chemical Engineering major who complete the equivalent of all the REQUIRED UCSB major preparation courses and as many of the STRONGLY RECOMMENDED courses as possible with a major prep GPA of 3.7 or higher are the most competitive for admission.

Applicants without all of the REQUIRED courses will be reviewed for admission, but will have less competitive applications.

Courses for the major taken prior to admission must be completed with no grades lower than "C".

REQUIRED base preparation courses

- Math 3A, 3B, 4A, 4B
- Physics 1, 2, 3, 3L
- Chemistry 1A, 1AL, 1B, 1BL, 1C, 1CL
- **Engineering 3***

For students who are unable to complete a course articulating with Engineering 3, we will accept a course articulating with Computer Science 16 instead of Engineering 3, for admission purposes only. Computer Science 16 does not satisfy a major requirement and the student would still need to take Engineering 3 at UCSB if admitted

STRONGLY RECOMMENDED advanced preparation courses

- Chemistry 6AL, 6BL, 109A, 109B
- Math 6A, 6B

Additional major preparation courses

- Chemical Engineering 5, 10

You may attend more than one California community college to earn credit for the required major preparation courses if the courses are not offered or if your schedule constrains you from completing them at your own campus. However, students are strongly encouraged to complete a series (such

as general chemistry, organic chemistry, or physics) at a single school to prevent missing content.

REQUIRED BASE PREPARATION COURSES

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

MATH 3A - Calculus with Applications, First Course (4.00) ← **MATH 1A** - Calculus (5.00)
--- Or ---
MATH 1AH - Calculus - HONORS (5.00)

Required for admission

MATH 3B - Calculus with Applications, Second Course (4.00) ← **MATH 1B** - Calculus (5.00)
--- Or ---
MATH 1BH - Calculus - HONORS (5.00)

Required for admission

MATH 4A - Linear Algebra with Applications (4.00) ← **MATH 2B** - Linear Algebra (5.00)
--- Or ---
MATH 2BH - Linear Algebra - HONORS (5.00)

Required for admission

MATH 4B - Differential Equations (4.00) ← **MATH 2A** - Differential Equations (5.00)
--- Or ---
MATH 2AH - Differential Equations - HONORS (5.00)

Required for admission
An AP exam cannot be used to satisfy this course requirement
An IB exam cannot be used to satisfy this course requirement

PHYS 1 - Basic Physics (4.00) ← **PHYS 4A** - Physics for Scientists and Engineers: Mechanics (6.00)

Required for admission
An AP exam cannot be used to satisfy this course requirement
An IB exam cannot be used to satisfy this course requirement

PHYS 2 - Basic Physics (4.00) ←
PHYS 4A - Physics for Scientists and Engineers: Mechanics (6.00)
--- And ---
PHYS 4C - Physics for Scientists and Engineers: Fluids, Waves, Optics and Thermodynamics (6.00)

Required for admission
An AP exam cannot be used to satisfy this course requirement
An IB exam cannot be used to satisfy this course requirement

PHYS 3 - Basic Physics (3.00)
--- And ---
PHYS 3L - Physics Laboratory (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)

Required for admission
An AP exam cannot be used to satisfy this course requirement
An IB exam cannot be used to satisfy this course requirement

CHEM 1A - General Chemistry (3.00)
--- And ---
CHEM 1AL - General Chemistry Laboratory (2.00)
--- And ---
CHEM 1B - General Chemistry (3.00)
--- And ---
CHEM 1BL - General Chemistry Laboratory (2.00)
--- And ---
CHEM 1C - General Chemistry (3.00)
--- And ---
CHEM 1CL - General Chemistry Laboratory (2.00)
←
CHEM 1A - General Chemistry (5.00)
--- And ---
CHEM 1B - General Chemistry (5.00)
--- And ---
CHEM 1C - General Chemistry and Qualitative Analysis (5.00)
--- Or ---
CHEM 1AH - General Chemistry - HONORS (5.00)
--- And ---
CHEM 1BH - General Chemistry - HONORS (5.00)
--- And ---
CHEM 1CH - General Chemistry and Qualitative Analysis - HONORS (5.00)

Required for admission

ENGR 3 - Introduction to Programming (3.00) ← No Course Articulated

- ***REFER TO TOP OF AGREEMENT***

STRONGLY RECOMMENDED ADVANCED PREPARATION COURSES

****REFER TO TOP OF AGREEMENT****
Recommended to be completed prior to transfer

CHEM 6AL - Laboratory Methods of Organic Chemistry (3.00)
--- And ---
CHEM 6BL - Laboratory Methods of Organic Chemistry (3.00)

←

CHEM 12A - Organic Chemistry (5.00)
--- And ---
CHEM 12B - Organic Chemistry (5.00)
--- And ---
CHEM 12C - Organic Chemistry (5.00)

Recommended to be completed prior to transfer

CHEM 109A - Organic Chemistry (4.00)
--- And ---
CHEM 109B - Organic Chemistry (4.00)

←

CHEM 12A - Organic Chemistry (5.00)
- *Lower division credit only*

--- And ---
CHEM 12B - Organic Chemistry (5.00)
- *Lower division credit only*

Recommended to be completed prior to transfer

MATH 6A - Vector Calculus with Applications, First Course (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)

Recommended to be completed prior to transfer

MATH 6B - Vector Calculus with Applications, Second Course (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)

ADDITIONAL MAJOR PREPARATION COURSES

CH E 5 - Introduction to Chemical Engineering Design (3.00) ← No Course Articulated

CH E 10 - Material and Energy Balances (3.00) ← No Course Articulated

END OF AGREEMENT