



# Cerritos College

## ENGINEERING

### Transfer Preparation

#### COMMON LOWER DIVISION PREPARATION FOR MOST COLLEGES OF ENGINEERING (CORE)

			UNITS
CHEM	111	General Chemistry	5
MATH	170	Analytic Geometry and Calculus I	4
MATH	190	Analytic Geometry and Calculus II	4
MATH	220	Analytic Geometry and Calculus III	4
PHYS	201	Engineering Physics	4
PHYS	202	Engineering Physics	4

Schools of engineering have similar basic science requirements but differ widely in the preparation for the various engineering options available. Provided below are the additional major requirements for the following engineering options: Civil Engineering, Electrical Engineering and Mechanical Engineering. Other Engineering options are available. **Contact a Cerritos engineering counselor for the specific requirements of the school and option you have selected in order to optimize preparation.**

#### ADDITIONAL REQUIREMENTS

##### California State University – Long Beach

For admissions to CSULB with one of the above engineering options students will be required to have a minimum GPA of 2.5 and the following lower division major preparation: MATH 170, MATH 190 and PHYS 201. Please note Electrical Engineering does not require CHEM 111.

##### CIVIL ENGINEERING

ENGR	110	Introduction to Engineering	1
ENGR	112	Engineering Graphics	3
ENGR	235	Statics	3
BIOL	120	Introduction to Biological Science	4
<b>or</b> MICR	200	Principles and Applications of Microbiology	(5)

##### ELECTRICAL ENGINEERING

ENGR	110	Introduction to Engineering	1
ENGR	215	Engineering Electric Circuits	3
PHYS	203	Engineering Physics	4

\*Chemistry 111 is not required for this major.

##### MECHANICAL ENGINEERING

ENGR	110	Introduction to Engineering	1
ENGR	112	Engineering Graphics	3
ENGR	235	Statics	3

(CSULB) Offers nine B.S. degrees: Aerospace, Chemical, Civil, Computer, Computer Science, Construction Engineering Management, Electrical, Mechanical, and General Engineer with options in: Audio, Biomedical and Clinical, Industrial Management, Materials, and Theme Park.

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## Transfer Preparation

**NOTE:** To be considered for admissions as an Engineering major (any option) to CSULB, students must complete MATH 170,190 and PHYS 201. In addition, you need an overall CSU transferrable GPA of at least a 2.5. These requirements must be completed by the end of spring for fall admissions and summer for spring admissions.

### California State University – Fullerton

Offers four options: Electrical, Civil, Computer and Mechanical.

#### CIVIL ENGINEERING

BIOL	120	Introduction to Biological Science	4
ENGR	235	Statics	3
MATH	250	Linear Algebra and Differential Equations	5

\*Chemistry 111 is not required for this major.

#### ELECTRICAL ENGINEERING

CIS	180	Programming in C/C++	3
ENGR	215	Engineering Electric Circuits	3
MATH	250	Linear Algebra and Differential Equations	5
PHYS	203	Engineering Physics	4

\*Chemistry 111 is not required for this major.

#### MECHANICAL ENGINEERING

ENGR	112	Engineering Graphics	3
ENGR	215	Engineering Electric Circuits	3
ENGR	235	Statics	3
ENGT	131	Design Fundamentals Including Solid Modeling	3
MATH	250	Linear Algebra and Differential Equations	5

### California State University – Pomona

For admissions to Cal Poly Pomona with one of the above Engineering options students will be required to have at minimum MATH 170 and MATH 190 completed by the spring before fall transfer.

#### CIVIL ENGINEERING

CHEM	112	General Chemistry	5
ENGT	138	AutoCAD	4
ENGR	235	Statics	3
MATH	250	Linear Algebra and Differential Equations	5

#### ELECTRICAL ENGINEERING

CIS	180	Programming in C/C++	3
ENGR	215	Engineering Electric Circuits	3
MATH	250	Linear Algebra and Differential Equations	5

#### MECHANICAL ENGINEERING

ECON	201	Principles of Macroeconomics	3
<b>or</b> ECON	201M	Principles of Macroeconomics	(3)
<b>or</b> ECON	202	Principles of Microeconomics	(3)
<b>or</b> ECON	202M	Principles of Microeconomics	(3)
ENGT	131	Design Fundamentals Including Solid Modeling	3
<b>or</b> ENGT	153	Machine Design Applications Using Solid Modeling	(3)
<b>or</b> ENGR	112	Engineering Graphics	(3)
ENGR	235	Statics	3

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## Transfer Preparation

MATH	250	Linear Algebra and Differential Equations	5
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(CSUP) Engineering school departments: Aerospace, Chemical, Civil, Computer, Electrical, Industrial, Manufacturing, Mechanical.

### University of California – Berkeley

**NOTE:** Only applicants who have completed 100% of these required courses (common courses and those listed below) by spring for fall admissions will be considered for admission to any of the Engineering programs at UC Berkeley. IGETC (plan C) is not recognized by the College of Engineering.

#### CIVIL ENGINEERING

BIOL	200	Principles of Biology	5
CHEM	112	General Chemistry	5
<b>or</b> PHYS	203	Engineering Physics	(4)
ENGL	102	Freshman Composition and Literature	3
MATH	250	Linear Algebra and Differential Equations	5

#### ELECTRICAL ENGINEERING & COMPUTER SCIENCE

ENGL	102	Freshman Composition and Literature	3
MATH	250	Linear Algebra and Differential Equations	5

**One course or course series required for admission. Choose from list below.**

A&P	201	Human Physiology	5
BIOL	200	Principles of Biology	(5)
BIOL	201	Principles of Biology	(5)
CHEM	111*	General Chemistry	(5)
CHEM	112	General Chemistry	(5)
CHEM	211	Organic Chemistry	(5)
<b>and</b> CHEM	212	Organic Chemistry	(5)
PHYS	203	Engineering Physics	(4)

\*CHEM 111 is not a required course for this major but can be used to meet the natural science requirement for transfer as well as a common course for the AA degree requirements.

#### MECHANICAL ENGINEERING

ENGL	102	Freshman Composition and Literature	3
MATH	250	Linear Algebra and Differential Equations	5
PHYS	203	Engineering Physics	4

**One course or course series required for admission starting fall 2016. Choose from list below.**

A&P	201	Human Physiology	5
BIOL	200	Principles of Biology	(5)
BIOL	201	Principles of Biology	(5)
CHEM	112	General Chemistry	(5)
CHEM	211	Organic Chemistry	(5)
<b>and</b> CHEM	212	Organic Chemistry	(5)
PHYS	203	Engineering Physics	(4)

(CAL) Offers Bachelor's degree in the following: Bioengineering, Chemical, Civil, Electrical Computer Science, Environmental, Industrial Engineering & Operations Research, Material Science, Mechanical, and Nuclear.

*REVISED SPRING 2016*

## Transfer Preparation

### University of California – Los Angeles

**PLEASE NOTE:** Engineering at UCLA is highly competitive. The most important selection criteria are major preparation and academic performance. A minimum transfer GPA of **3.4** and completion of all major preparation listed under the common preparation and the courses below by spring term prior to fall enrollment is required for admissions consideration. All major courses must be taken for a letter grade and UCLA specifies that the entire Physics sequences should be completed at one community college.

#### CIVIL & MECHANICAL ENGINEERING

CHEM	112	General Chemistry	5
CIS	180	Programming in C/C++	3
<b>or</b> CIS	280X	Object-Oriented Programming in C++	(3.5)
ENGL	100	Freshman Composition	4
<b>and</b> ENGL	102	Freshman Composition and Literature	3
<b>or</b> ENGL	103	Critical and Argumentative Writing	(3)
<b>or</b> PHIL	103	Philosophical Reasoning: Critical Thinking in Philosophy	(3)
<b>or</b> PSYC	103	Critical Thinking in Psychology	(3)
<b>or</b> SPCH	235	Fundamentals of Argumentation and Persuasion	(3)
PHYS	203	Engineering Physics	(4)
MATH	250	Linear Algebra and Differential Equations	5
PHYS	203	Engineering Physics	4

#### ELECTRICAL ENGINEERING

Same as common requirements and the requirements for Civil and Mechanical Engineering minus CHEM 112.

(UCLA) Offers Bachelor's degree in the following: Aerospace, Bioengineering, Chemical, Civil, Computer Science, Computer Science and Engineering, Electrical, Materials, and Mechanical.

### University of California – Irvine

(UCI) Offers Bachelor's Degree in Engineering with the following options: Biomedical, Chemical, Civil, Computer, Computer Science and Engineering, Electrical, Environmental, Materials Science, Mechanical and Software.

### University of California – Riverside

(UCR) Offers Bachelor's Degree in Engineering with the following options: Chemical, Computer, Electrical, Environmental, Material Science, and Mechanical.

### Loyola Marymount University

(LMU) Offers B.S. Degrees in: Civil Engineering, Civil with an Environmental Engineering emphasis, Electrical Engineering, Electrical with a Computer Engineering emphasis, Mechanical.

For Articulation Agreements go to: <http://www3.lmu.edu/resources/articulation/list/cerritos.htm>.

### University Of Southern California

(USC) Offers B.S. Degrees in: Aerospace Engineering, Applied Mechanics, Biomedical Engineering, Chemical Engineering, Civil Engineering, Computer Engineering and Computer Science, Computer Science, Electrical Engineering, Environmental Engineering, Industrial and Systems Engineering, Mechanical Engineering.

For Articulation Agreements go to: <https://camel2.usc.edu/TPG/>.

REVISED SPRING 2016

## Transfer Preparation

### **CAREER OPPORTUNITIES:**

Career opportunities in engineering vary widely depending upon the area of specialization. The Cerritos Career Center provides current and comprehensive career information concerning each engineering discipline. Because engineering is a high unit professional major, the schools of engineering may require special general education classes. Contact a Cerritos engineering counselor for specific information.

See State University General Education List.

***IMPORTANT NOTICE:*** *The requirements listed for major are subject to change without notice. It is the student's responsibility to check for the most recent information with a Cerritos College counselor or by consulting ASSIST at [www.assist.org](http://www.assist.org).*

***NOTE:*** *Courses listed may require prerequisite coursework.*

REVISED SPRING 2016

# ASSIST

How to use **ASSIST** to find your major preparation for CSU/UC:

1. **Log on:** [www.assist.org](http://www.assist.org)
2. **Select an Institution:** select "Cerritos College" or other community college from pull-down menu
3. **Select:** "Type of Transfer Institution" such as "UC Los Angeles"
4. **Select a major from pull-down menu**  
Report will show the university courses on the left and comparable community college classes on the right.
5. **PRINT:**-print by clicking on gold "**PRINT THIS REPORT**" button on top. Then use the **ASSIST** screen menu on the top toolbar or click on the printer icon that will appear at the bottom of the page.

How to use **ASSIST** to explore the majors available at University of California and California State University campuses

- Click on "EXPLORE MAJORS"

How to use **ASSIST** to figure out whether courses from the community college are transferable to the CSU/UC.

- Select the community college of interest (Cerritos College)
- Select either CSU transferable courses or UC Transferable courses
- Select a department for the courses in question

\*USC Articulation available at:

[www.usc.edu/articulation](http://www.usc.edu/articulation) and **Select:** "TRANSFER PLANNING GUIDE."

## **IMPORTANT:**

*Students are advised to contact a Cerritos College counselor for more information & for details regarding other transfer agreements & options not available on ASSIST. Students can stop by the counseling desk to make an appointment or call (562) 860-2451 ext. 2231.*