

## **Master of Science in Chemical Engineering**

This new state-supported program was recommended by the Academic Senate on September 21, 2017 and concurred by the President on December 13, 2017.

### **Program Description**

The Master of Science in Chemical Engineering degree program at CSULB requires completion of 30 units of graduate courses, as specified below. Each student must satisfy all the requirements of the University, College, and Department. The MSChE program aims at educating and training multidisciplinary professionals in order to provide them with the needed expertise for advanced technical activities in Chemical Engineering and any relevant areas of engineering and sciences.

### **Program Admission Requirements**

In addition to applying to the University Office of Admissions and Records (UOAR), an applicant for graduate study in the MSChE must also apply to and be admitted by the Chemical Engineering Department and the College of Engineering. It is the responsibility of the student to follow a current CSULB Catalog, which sets forth the policies of the University, the College of Engineering, and Chemical Engineering Department graduate programs.

### **Admission Process**

1. Students interested in applying to the MSChE program at CSULB should submit University application. The applicant must complete and submit the application in order to be considered for admission into MSChE graduate program. The applicant should also submit a MSChE application with a statement of purpose, and three letters of recommendation to the Chemical Engineering Department.
2. One complete set of official transcripts of all college work attempted are required and must be sent to:

California State University, Long Beach  
Office of Admissions and Records  
1250 Bellflower Boulevard  
Long Beach, CA 90840, USA

3. Graduate Record Exam (GRE) scores must be forwarded directly from the Educational Testing Service to the UOAR. Test scores over 5 years old will not be considered.
4. **International** students should first contact the Center for International Education on campus for special deadlines.

5. International students are required to take the TOEFL test and achieve a minimum score of 550 for the paper-based test or 80 for the internet-based test, for admission consideration.
6. All transcripts, the MSChE application packet, the GRE scores, and the TOEFL scores (if applicable) must be filed by the application deadline.

It is always advised that students submit their applications to the program early. No action can be taken on applications until all required documents are received. Application materials submitted after these dates will be reviewed, and students will be admitted as time and space permit.

## **Criteria**

Admission will be granted to students who show high promise of success in post-baccalaureate Chemical Engineering study. Each applicant's potential for MSChE program will be evaluated on the basis of the following four major criteria:

1. Past academic record, as reflected in the undergraduate GPA
2. Scores of the Graduate Record Exam (GRE)
3. Statement of purpose, which includes leadership potential, educational goals and academic strengths
4. Three letters of recommendation

## **Enrollment**

Application to the University as a graduate student does not constitute admission to graduate study in the College of Engineering. The MSChE program requires additional admissions criteria, such as leadership potential, educational goals, and academic strengths.

### **Admissions to Graduate Courses**

Students admitted to the MSChE program or approved by the ChE Graduate Advisor may take graduate courses in Chemical Engineering.

## **Continuous Enrollment**

Once a student is accepted and enrolled in the MSChE program, he/she is expected to attend classes in both semesters of each academic year. (Spring and Fall semesters are considered the regular semesters of an academic year, while the summer attendance is optional.) Registration and completion of at least one course each semester satisfies the continuous enrollment requirement. If a student is unable to satisfy the continuous enrollment requirement, he/she must complete the Educational Leave of Absence procedures detailed below. The continuous enrollment status will only be preserved if the student's absence from a regular semester has been processed and approved through the Educational Leave of Absence procedures.

Students failing to maintain the continuous enrollment status will be administratively removed from the MSChE program. Registration privileges will be revoked. Students planning to continue in the MSChE program who have been administratively removed due to the violation

of the continuous enrollment condition will be required to re-apply to the MSChE program and to the University.

### **Leave of Absence**

Any MSChE student in good academic standing may request an educational leave. Students requesting an educational leave must complete an Educational Leave form, in advance, including an explanation of their reasons for seeking the leave and a statement of when they intend to resume their academic work. The completed form is to be submitted for approval to the COE Graduate Program Office and the University Admission and Records Office in accordance with University Policy.

The minimum initial leave will be one full semester, and the maximum will be one calendar year. In advance, a student may request, in writing, an extension of leave. Under no circumstances will the total number of approved educational leaves exceed two, nor will the duration of approved educational leaves extend beyond two calendar years.

An Educational Leave of Absence, if properly requested and processed, allows a student to satisfy the continuous enrollment requirement and therefore does not affect their good standing status. Students on an approved education leave of absence will continue to receive registration information and access to the MyCSULB system until the authorized leave time expires.

Graduate students who plan to enroll for credits at another institution of higher education during the leave period must obtain prior approvals for the transfer of course credits to the student's program from the department chair in question and the graduate advisor.

The period of an educational leave is counted in the calculation of elapsed time under the regulations governing the seven-year maximum period for completion of the MSChE degree requirements.

In the period of an educational leave, the student's rights under the "Election of Regulation" rule are preserved, maintaining the right for the student to elect regulations as if he or she had maintained continuous attendance. See the CSULB catalog, General Rules and Procedures section, for a complete explanation of the Election of Regulation - "Catalog Rights".

An educational leave presupposes no expenditure of University resources and faculty/staff time on behalf of the student during the period of the leave. In addition, no computer facilities, library privileges, and student services are available to a student on the educational leave.

### **Credit Transfer**

Assuming the continuous enrollment requirement has been satisfied, a maximum of six credits that closely complement the student's degree objectives may be applied toward the requirements for the MSChE degree under the following conditions:

1. The credits under consideration must be graduate credits

2. The course work must be taken at an accredited institution
3. Prior approval must be obtained from the ChE graduate advisor and department chair

The remaining units must be completed in courses at CSULB reserved exclusively for graduate students.

#### Scholastic Standards/Probation/Disqualification

A student who fails to maintain a cumulative GPA of 3.0 or higher in all work completed as a graduate student at this University or in all transferred work applied to the program will be placed on academic probation. The semester in which the student's GPA falls below 3.0 is the first probationary semester.

A student on probation, who at the end of the second probationary semester (or summer, if classes are taken) fails to obtain a cumulative GPA of 3.0 or higher on all units attempted in the post-baccalaureate work at CSULB, will be disqualified and removed from the graduate program. The student should note that the cumulative GPA is calculated by the University Admissions and Records and includes all upper division and graduate courses taken while enrolled in the graduate program.

#### **Requirements (30 units)**

Core Courses: 12 units required

Take all the following courses:

CHE 505 Advanced Chemical Engineering Thermodynamics (3)

Prerequisite: CHE 310 or equivalent course.

CHE 520 Advanced Transport Phenomena (3)

Prerequisites: CH E 320, CH E 420, CH E 430 all with a grade of "C" or better.

CHE 530 Advanced Reactor Kinetics (3)

Prerequisite: CH E 430 with a grade of "C" or better.

CHE 560 Advanced Chemical Process Control (3)

Prerequisite: one of the following: CH E 460, E E 370/E E 370L, 411, E E 470, E E 471, E E 511, MAE 376, E T 492 all with a grade of "C" or better or consent of instructor.

Mathematics: 6 units required:

CHE 580 Theoretical Methods in Chemical Engineering (3)

Prerequisites: CH E 420, CH E 430 all with a grade of "C" or better.

One external mathematics-based course, e.g., MAE 501, MAE 502, STAT 510, or a course approved by the graduate advisor (3)

Approved Chemical Engineering Elective Courses: 6-12 units required

CHE 515, CHE 531, CHE 532, CHE 533, CHE 537, CHE 545, CHE 555, CHE 575, CHE 585  
CHE 697

Approved Multidisciplinary Elective Courses: (up to 6 units allowed)

CE 543, CE 562, CE 563, CE 564, CE 567, E E 506, E E 507, E E 536, MAE 512, MAE 522,  
MAE 527, MAE 531, MAE 533, MAE 535, MAE 537, MAE 538, MAE 631, MAE 635, MAE  
637

Options:

Thesis/Industrial Project

Students are required to complete 24 units of courses and 6 units of CHE 698,  
Thesis/Industrial Project. Students are also required to successfully pass their thesis/project  
defense.

Comprehensive Exam

Students are required to complete 30 units of required courses and successfully pass the  
Chemical Engineering Comprehensive Exam.

EFFECTIVE: Fall 2019

Campus Code: CHE\_MS01PB

College: 52

Career: GD

CIP Code:14.0701

CSU Code: 09061

Department: Chemical Engineering

Degree Program Delivery Type: Face to Face

Major Pathway: (STEM or non-STEM): STEM

PS 18-13