Although CSUB does not offer a degree in engineering, students can complete a substantial portion of lower division courses required for engineering programs elsewhere. Students at CSUB enjoy the benefits of a liberal arts general education in small classes while preparing for more specialized study in engineering at other institutions.

Students who have completed the core mathematics and science sequences have been readily accepted by other universities, public and private, both within and outside of California. Formal arrangements for preferential admission to several other universities in the CSU system have been completed, and this program is currently being expanded. At present, the CSUB main campus has a formal articulation agreement with California Polytechnic State University, San Luis Obispo, and California State University, Fresno.

Most engineering programs are highly structured and very demanding, and careful selection of courses for transfer programs is strongly urged. Students interested in the pre-engineering program are advised to consult with the pre-engineering advisor in the Physics Program (SCI III 308, 654-2104) for information and assistance in planning course work. For student learning objectives and more information, visit our website at www.csub.edu/nsme/engineering.

Special Consideration for Transfer to Cal Poly San Luis Obispo - For many Kern County residents, Cal Poly San Luis Obispo offers the most attractive engineering program. CSUB has reached an agreement with Cal Poly whereby students who complete the specified transfer program at CSUB are given “special consideration” for admission. While there is no formal guarantee, completion of the following courses provides the student with a strong possibility of admission.

Basic Course Requirements:
• CHEM 211, 212 General Chemistry
• COMM 108 Strategies of Public Communication
• CMPS 221 Programming Fundamentals
• ENGR 160/161 Introduction to Engineering
• ENGR 207 Electric Circuits
• ENGR 240 Analytic Mechanics, Statics
• ENGL 101 Introduction to Literature: Text and Contexts
• MATH 201, 202/222, 203, 204 (Calculus sequence)
• MATH 205 Ordinary Differential Equations
• PHYS 221, 222, 223 (Calculus-based Physics sequence)

Other universities in the California State University System may require PHIL 102 Logical Reasoning. If time permits, additional courses from CSUB’s General Education program should be taken.

Students transferring to CSU Fresno may be allowed to take PHIL 316 Professional Ethics and PLSI 304 International Relations to satisfy both General Education and major requirements. Please check with the Pre-Engineering Advisor before registering for these classes.

COURSE DESCRIPTIONS

Lower Division

ENGR 160 Engineering Orientation (1)
An introduction to the various areas within the engineering discipline. Description of engineering curricula and career opportunities within each of the various areas. Academic advising for transferring to other institutions with engineering degree programs. Primarily for students planning to major in one of the fields of engineering. Offered on a credit, no-credit basis only. One hour lecture/discussion.

**ENGR 161 Introduction to Engineering (2)**
Introduces students to real-life engineering projects. Students design, build, tests and present engineering projects designed to solve specified problems within given constraints. Primarily for students planning to major in one of the fields of engineering. Two hours lecture/discussion.

**ENGR 207 Electric Circuits (5)**
Circuit laws and analysis of DC and AC circuits. Physical properties, electrical characteristics and circuits of discrete and integrated electrical and electronic devices. Design and construction of circuits with instrumentation applications. Three hours lecture/discussion and two three-hour laboratories per week. Prerequisites: PHYS 222, MATH 202/222 (MATH 203 recommended).

**ENGR 240 Analytic Mechanics, Statics (5)**
Fundamental principles of force systems acting on particles and rigid bodies in static equilibrium. Applications to structural and mechanical problems, both two-dimensional and three-dimensional. Five hours lecture/discussion. Prerequisites: PHYS 221, Co-requisite MATH 202.

**ENGR 270 Introduction to CAD in Engineering (3)**
Use of computer-aided design software, such as AutoCAD, in engineering. CAD concepts including drawing setups, commands and system variables, layers and object properties, 2-dimensional entity creation, coordinate systems, creating objects, drawing with precision, plotting, and editing methods are applied to a variety of engineering applications. Two hours lecture/discussion and three hours laboratory per week.

**ENGR 271 Intermediate CAD in Engineering (3)**
Intermediate topics in computer-aided design using AutoCAD. Introduction to 3-dimensional drawing and modeling with engineering applications, adding text to drawings, creating dimensions, using blocks and external references, managing content with Autocad Design Center, creating a layout to plot, plotting your drawings, working with raster images, creating compound documents with OLE, and using other file formats. Two hours lecture/discussion and three hours laboratory per week. Prerequisite: CMPS 270.