I. **OVERVIEW**

The following information will appear in the 2010 - 2011 catalog

**ENGR 100 Intro to Engineering & Architecture**

1 Unit

*Also offered as:* ARCH - 100: Introduction to Engineering and Architecture  
*Formerly listed as:* ENGR - 100: Introduction to Engineering and Architecture

Introduction to the vocational and academic opportunities in engineering, architecture and related technologies. Topics include models of student success, characteristics of the professions, degree requirements, importance of teamwork and self assessment. Activities include field trips, practice labs, projects and presentations by practicing engineers and architects.

Field trips might be required. (A-F or P/NP - Student choice) Lecture  
**Transfer:** (CSU, UC)

II. **LEARNING CONTEXT**

Given the following learning context, the student who satisfactorily completes this course should be able to achieve the goals specified in Section III, Desired Learning:

A. **COURSE CONTENT**

1. **Required Content:**

   a. Descriptions of the following professions (to include required educational curriculum, employment statistics, salaries and professional organizations):

      i. Architecture – Architectural/environmental design, architectural engineering, city and regional planning, landscape architecture.

      ii. Construction Management

      iii. Engineering – Civil, mechanical, aerospace, electrical, structural, industrial, agricultural, chemical, materials science.

      iv. Engineering Technology – Civil, mechanical, electrical, drafting and design, surveying and photogrammetry.

   b. Presentations by visiting professionals regarding their educational backgrounds, working and salary conditions, and the personality, aptitudes and interests required in their professions.

   c. Aptitude requirements for educational and professional attainment.

   d. Student success methods

      i. Goal setting methods

      ii. Time management methods

      iii. Self-assessment techniques

   e. University options
i. Degree offerings

ii. Use of ASSIST database

B. HOURS AND UNITS

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<tr>
<th>INST METHOD</th>
<th>TERM HOURS</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>Lect</td>
<td>18</td>
<td>1.00</td>
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<tr>
<td>Lab</td>
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C. METHODS OF INSTRUCTION (TYPICAL)

Instructors of the course might conduct the course using the following method:

1. Lectures to explain course material
2. Use of practicing engineers/architects as guest lecturers
3. Classroom discussion of material
4. Use of field trips to complement classroom material

D. ASSIGNMENTS (TYPICAL)

1. EVIDENCE OF APPROPRIATE WORKLOAD FOR COURSE UNITS

Time spent on coursework in addition to hours of instruction (lecture hours)

a. Written assignments involving research of careers, majors, disciplines, degree requirements, engineering/architectural projects, articulation agreements and analysis of guest speakers, engineering firms and course effectiveness.

b. Open-ended design/build solution to an engineering project.

2. EVIDENCE OF CRITICAL THINKING

Assignments require the appropriate level of critical thinking

a. Research paper describing, analyzing and examining the professional options for a chosen field.

b. Written summaries and evaluation of guest speaker presentations.

c. Evaluation of one’s abilities, ambitions, career goals and expectations of his/her chosen field.

d. Design and build a solution to an engineering project.

e. Completion of research papers related to career options, engineering projects and noted engineers/architects.

E. TEXTS AND OTHER READINGS (TYPICAL)

III. DESIRED LEARNING

A. COURSE GOAL
As a result of satisfactory completion of this course, the student should be prepared to:

identify various disciplines within engineering and architecture and describe the roles, responsibilities and duties of each through the use of guest speakers, field trips, and basic design and research projects.

B. STUDENT LEARNING GOALS
Mastery of the following learning goals will enable the student to achieve the overall course goal.

1. Required Learning Goals
Upon satisfactory completion of this course, the student will be able to:

   a. Describe and distinguish the various branches of engineering, architecture and related professional fields.
   
   b. Describe the requirements and characteristics needed for professional success (job placement, retention, advancement, salary increase).
   
   c. Describe engineering or architecture curriculum and identify potential options.
   
   d. Describe the organization of the college and its resources, the requirements for graduation, transfer and employment preparation.
   
   e. Investigate and discern the ramifications of architecture, engineering and related professions on public safety and well-being.
   
   f. Summarize the role of community colleges in the context of post high-school educational opportunities, including the philosophy and purpose of the various curricula offered.
   
   g. Use the assist.org database to determine appropriate lower division preparation courses for a major.
   
   h. Identify MJC degree requirements.
   
   i. Identify the steps in approaching an engineering/architecture design project.

IV. METHODS OF ASSESSMENT (TYPICAL)

A. FORMATIVE ASSESSMENT

1. Grading of written reports and projects

2. Evaluation of class participation

3. Review of ASSIST output related to educational field

B. SUMMATIVE ASSESSMENT

1. Grading of final report on decisions related to educational and career goals

2. Evaluation of design/build, open-ended project during student competition.