

**STATE FAIR COMMUNITY COLLEGE  
ASSOCIATE OF SCIENCE, ENGINEERING**

**Form NP**

**NEW PROGRAM PROPOSAL FORM**

**Sponsoring Institution(s):** State Fair Community College

**Program Title:** Associate of Science Degree

**Degree/Certificate:** Associate of Science with an Engineering Major

**Options:** None

**Delivery Site(s):** 3201 W. 16<sup>th</sup> St., Sedalia, MO 65301-2199

**CIP Classification:** A.S. Engineering – 14.0101

**Implementation Date:** Fall 2010

**Cooperative Partners:** None

**Expected Date of  
First Graduation:** Spring 2012

**AUTHORIZATION**

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Dr. Brent Bates, Vice President of Educational Services and Student Services

Date

**Contact Person:** Mr. Keith Swanson, Dean of Academic Affairs  
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**Need:**

As a comprehensive community college State Fair’s goal is to provide the best affordable options to our students and our community. Students in general education who wish to seek engineering degrees are often at a disadvantage. The Associate of Arts degree requires many hours of humanities and social sciences that are not required for a Bachelor of Science Degree. Engineering majors cannot complete the requirements for an Associate of Arts degree and the additional science and math courses necessary to prepare them for transfer within a four semester period. As a result when the student transfers they typically must take an additional year of classes. The Associate of Science degree will make it possible for the engineering student to complete a Bachelor of Science degree in two years after graduating from State Fair Community College.

**Form SE  
STUDENT DEMAND**

**Student Enrollment Projections – A.S. Engineering:**

<b>YEAR</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Full-Time</b>	5	7	10	12	15
<b>Part-Time</b>	5	5	7	10	12
<b>TOTAL</b>	10	12	17	22	27

**Market Demand:**

The United States Department of Labor expects engineering employment to grow by 11 percent over the 2006-16 period, with even more significant growth in environmental (25 percent) and industrial (19 percent) engineering.

According to Missouri Occupational Outlook, these positions have strong starting salaries of nearly \$50,000.

The need for companies to achieve a competitive edge will require retooling and implementing improved manufacturing processes. A strong pool of engineers is necessary to facilitate this retooling in the United States in order to remain competitive.

**State and Region:**

Projected employment needs in the state range from 6-25% in a ten-year period, depending on the type of engineers. The greatest demand will be for industrial and environmental engineers.

Locally, Sedalia has seen a significant growth in an energy related industry which employs electrical engineers.

**Societal Demand:**

As we push for green technologies, not just as users, but as developers and manufacturers, it is incumbent upon us to develop students with the needed engineering skills. This degree will give more community college students a chance to become engineers through a more complete articulated program with a four-year program.

**Methodology Used to Determine “B” and “C” above:**

Statistics were obtained from the following sources –

*United States Department of Labor*

*Bureau of Labor Statistics*

*Missouri Occupational Outlook Handbook*

**Duplication:**

Various similar programs exist at other community colleges throughout the state, but none are offered within the 14-county region served by SFCC. This program will create a new opportunity for students in our region.

**Collaboration:**

State Fair Community College will work in collaboration with Missouri University Science and Technology

**Form FP**

**FINANCIAL PROJECTIONS (deleted)**

**Forms PS**

**A.S. IN ENGINEERING**

- A. **Total credits required for graduation:** 64 hours
- B. **Residency required, if any:** 15 hours
- C. **General Education:** 21 total credits

**Courses (Specific courses OR distribution areas and credits):**

ENGL 101	English Composition I	3 credits
ENGL 102	English Composition II, OR	
SPTR 101	Public Speaking, depending on specific major	3 credits
ECON 101	Principles of Economics	3 credits

HIST 101 U.S. History Before 1877, OR  
HIST 102 U.S. History After 1877, OR  
POL 101 American/National Government 3 credits  
Two courses from Literature, Humanities, OR  
Social Sciences, from two different prefixes 6 credits

**Major Requirements:** 30 credits

MATH 130 Calculus and Analytic Geometry I 5 credits  
MATH 131 Calculus and Analytic Geometry II 5 credits  
MATH 132 Calculus and Analytic Geometry III 5 credits  
PHYS 118 General Physics I 5 credits  
PHYS 119 General Physics II 5 credits  
CHEM 123 General Chemistry I 5 credits

**Free Elective Credits:** 16 credits

Student will select 16 hours which best fit their engineering degree.

MATH 114 College Algebra 3 credits  
MATH 120 Trigonometry 3 credits  
CAPP 125 Microcomputer Applications 3 credits  
CIS 155 Programming in C 3 credits  
CHEM 124 Organic Chemistry w/ Lab 5 credits  
BIO 112 Introduction to Biology w/ Lab 5 credits  
DRFT 111 Introduction to Computer Drafting 3 credits  
MATH 134 Differential Equations 3 credits

## Form PG

### PROGRAM CHARACTERISTICS AND PERFORMANCE GOALS

**Institution Name:** State Fair Community College

**Program Name:** Associate of Science, Engineering

**Date:** March 25, 2010

#### **Student Preparation:**

Students will have no specific admission qualifications to be admitted to the college; however, they will need to meet course pre-requisites.

#### **Faculty Characteristics:**

Faculty will be expected to have a Masters Degree in the field of study. Faculty are expected and encouraged to stay current in their field. A majority of the courses will be taught by full-time faculty.

**Student and Program Outcomes:**

Goals for the program include 10 graduates at 3 years and 15 graduates in 5 years. Our goal is to have 80% of our graduates transfer to a four-year college/university to continue their studies in engineering.

**Program Accreditation:**

There are no specific accreditation requirements for this major.

**Alumni and Employer Survey:**

The expected satisfaction rate for alumni at the time of graduation is expected to be 75% using a follow-up survey.