SSCC SOUTH SEATTLE COMMUNITY COLLEGE
Member of the Seattle Community College District

Career Planning Guide Effective September 2003 for

MECHANICAL ENGINEERING

Length of Program: 90 credits **Goal**: Associate of Science (AS) Degree

South Seattle Community College
6000 16th Ave SW
Seattle, Washington 98106-1499
http://www.southseattle.edu/
Academic Offices (206) 768-6600

General Academic Advising:
(206)-764-5387
advisorsouth@sccd.ctc.edu

Quarterly Costs – check current schedule:
http://www.southseattle.edu/services/tuition.htm

Class schedule and District catalog:
http://www.southseattle.edu/programs/classCat/

Mechanical Engineering Faculty Contact:
Mike Steffancin (206)-768-6486
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RSB 189

PROGRAM DESCRIPTION

Mechanical engineers are involved in the design, test, development, and manufacture of mechanical devices and systems. Mechanical engineers work in energy utilization and conservation, transportation fields, automation, biomechanical systems, fluid machinery and manufacturing. The Mechanical Engineering Associate of Science (AS) degree program prepares students for transfer to Mechanical Engineering programs at four-year colleges and universities and will give students basic skills needed by all engineers. Students study basic mathematical and scientific principles with an emphasis on problem solving and critical thinking. Additionally, the program provides students experience with computer programming and commonly used engineering software including Matlab. The curriculum includes a design component consistent with the Accreditation Board for Engineering and Technology (ABET) accreditation standards. The curriculum also develops other job related skills such as communications, human relations and technical report writing. Credits earned with the AS degree at South Seattle Community College can be applied toward the first two years of a four-year bachelor's degree in mechanical engineering.

PROGRAM OUTCOMES

Students who successfully complete this program will show:

- An ability to apply knowledge of mathematics, science, and engineering to mechanical engineering problems.
- An ability to design and conduct experiments, as well as to analyze and interpret data.
- An ability to think critically in evaluating information, solving problems and making decisions.
- An ability to function on diverse, multi-disciplinary teams.
- An ability to access and evaluate information from a variety of sources including the Internet.
- An understanding of professional and ethical responsibility.
- An ability to communicate effectively with written, oral, and visual means.
- The broad education necessary to understand the impact of engineering solutions in a global and societal context.
- A recognition of the need for and an ability to engage in life-long learning.
- An ability to use modern engineering techniques, skills, and technology including computing and programming tools necessary for engineering practice.

CAREER OPPORTUNITIES

Graduates can be employed in private industry as well as various governmental departments, consulting services, and technical sales. Nationwide, the average starting salary for graduates with a Bachelor's degree in Mechanical Engineering in 2008 was $57,821. Source: National Association of Colleges and Employers.

Effective Sept 2003

Associate of Science
Mechanical Engineering Pre-Major

CURRICULUM

The A.S. degree requires 90 credits total, not including prerequisites. Courses are 5 credits unless otherwise listed.

BASIC REQUIREMENTS (20 credits):

- ENGL& 101 – Composition
- MATH& 151 – Calculus I
- MATH& 152 – Calculus II
- MATH& 153 – Calculus III

DISTRIBUTION REQUIREMENTS (15 credits):

Visual, Literary and Performing Arts (5 - 10 credits)

- Language and Speech
- Literature/History of Ideas
- Music, Art and Drama

Individuals, Cultures and Societies (5 - 10 credits)

- Individuals and Societies
- United States Culture
- Global Studies

MAJOR AREA OF STUDY (42 credits):

- CHEM& 161[†] (6 credits), 162 (6 cr)
- PHYS& 221, 222, & 223
- CSC 142[‡] or ENGR 142[‡]
- ENGR 110 (1 cr), 116 (4 cr), 214

ELECTIVES (13 credits):

Courses may not be used to satisfy other requirements. **Selection should be made based on advisor recommendation, given the four-year institution that the student plans to attend.**

Recommended: ENGR& *204*, *215*, *225*, *224*, *230*, MATH *220*, *224*, *238*
Other science classes offered:

- BIOL& 211, 212, 213
- CHEM& 163 (6 cr), 241 (4 cr), 251 (3 cr)
- CSC 110, 143
- ENGR 111 (4 cr), 112 (4 cr), 141, 142, 170 (4 cr), 171 (1 cr), 298, 299
- MATH 109, 215 (2 cr), 216 (2 cr), 298 (2 credit maximum given for MAT 298)

Footnotes:

[‡] CSC 110 is a prerequisite for CSC/ENGR 142

[†] CHEM& 139 is a prerequisite for CHEM& 161

Italicized electives are required for graduation in the UW ME program.

SAMPLE COURSE PLAN

Note that several required classes have prerequisites that are not shown in the sample course plan below. This could require students to attend summer school to pick up those prerequisites. Because of this, a mechanical engineering Bachelor's degree often takes many students as much as five years to complete. **Be sure to consult with advisors here at SSCC and at the 4-year institution you will attend to plan your schedule.**

FRESHMAN YEAR:

First quarter

- MATH& 151 – Calculus I
- ENGL& 101 – Composition
- ENGR 116 Engineering Design and Creativity
- ENGR 110 Engineering Orientation

Second quarter

- MATH& 152 – Calculus II
- CHEM& 161 Chemistry I
- Distribution Requirement (5 credits)

Third quarter

- MATH& 153 – Calculus III
- PHYS& 221 Engineering Physics I
- CHEM& 162 Chemistry II

SOPHOMORE YEAR:

First quarter

- PHYS& 221 Engineering Physics II
- MATH 238 Differential Equations
- CSC 142 Computer Programming for Engineers

Second quarter

- ENGR& 214 Engineering Statics
- PHYS& 223 Engineering Physics III
- MATH 220 Linear Algebra
- Distribution Requirement (5 cr)

Third quarter

- Distribution Requirement (5 cr)
- ENGR 230 Technical Writing
- ENGR 225 Engineering Strength of Materials
- ENGR 215 Engineering Dynamics

Updated 10/6/08

__SOUTH SEATTLE COMMUNITY COLLEGE_____

ASSOCIATE OF SCIENCE DEGREE IN MECHANICAL ENGINEERING

Name	**SID#**				
No course fulfills more than one requirement **Basic Requirements: 20 credits**	**Course Credit**	**Credit Earned**	**Grade**	**College**	**Quarter**
ENGL& 101	5				
MATH& 151	5				
MATH& 152	5				
MATH& 153	5				
Areas of Knowledge Distribution Requirements: 15 credits					
Visual, Literary, and Performing Arts (Humanities and Arts): 5 – 10 credits					
Individuals, Cultures, and Society (Social Sciences): 5 – 10 credits					
Major Area of Study: 42 credits					
CHEM& 161	6				
CHEM& 162	6				
PHYS& 221	5				
PHYS& 223	5				
PHYS& 223	5				
CSC 142 or ENGR 142	5				
ENGR 110	1				
ENGR 116	4				
ENGR& 214	5				
Electives: 13 credits Courses may not be used to satisfy other requirements. **Selection should be made based on advisor recommendation, given the four-year institution that the student plans to attend.**					

Note: Students must have a minimum 2.0 GPA for graduation and must take a minimum of 30 credits at SSCC. Final quarter must be at SSCC.

Total Credits Required: 90 Evaluator_____**Date**_____

Updated 10/6/08