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

Career Planning Guide Effective April 2006 for

Computer and Electrical Pre-Engineering Pathway

Length of Program: 101 credits **Goal**: Associate of Science (AS) Degree

Official Designation: AS-T Comp E EE/MRP Exit Code of P and CIP of 14.1001

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/

Engineering Faculty Contact:
Mike Steffancin (206)-768-6486
msteffancin@sccd.ctc.edu
RSB 189

PROGRAM DESCRIPTION

Computer Engineers design and implement computer hardware and software systems to solve a variety of problems in such diverse areas as communications, manufacturing, robotics, computer graphics, databases and many others. A computer engineer could be involved with hardware design and fabrication, software creation, systems integration, or fundamental research. Electrical engineers design, produce, and operate devices and systems that use electric and electromagnetic energy for sensing, processing, visualization and use of information. Electrical Engineering has grown from its roots in power systems to branches in communications systems, automatic controls, computer hardware, signal processing, semiconductor physics, electronic circuit synthesis, optics, consumer electronics, wireless communications, digital video, integration of computers, communications and sensors, robotics and intelligent control. The Computer and Electrical Engineering Pathway Associate of Science (AS) degree program prepares students for transfer to Computer and Electrical Engineering programs at four-year colleges and universities and will give students basic skills needed by all engineers. The curriculum includes a design component consistent with the Accreditation Board for Engineering and Technology (ABET) accreditation standards. 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 engineering.

PROGRAM OUTCOMES

Students who successfully complete this program will show:

- An ability to apply knowledge of mathematics and scientific principles to 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

The employment outlook for Engineers is very good. 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 Engineering in 2008 varies from $50,940 to $63,616 depending on the field studied. Source: National Association of Colleges and Employers.

Effective April 2006

Associate of Science

Computer and Electrical Pre-Engineering Pathway

CURRICULUM

101 credits are required for the AS degree. All classes 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):

A course in Economics is recommended.

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 (51 credits):

- CHEM& 161† (6 credits)
- CSC 142‡ (or ENGR 142‡), CSC 143
- ENGR& 110 (1 cr), 116 (4 cr)
- ENGR& 204
- MATH 220, 238
- PHYS& 221, 222, & 223

ELECTIVES (15 credits):

Courses may not be used to satisfy other requirements. Choose three from the list below. **Selection should be made based on advisor recommendation, given the branch of engineering that the student plans to pursue.**

BIOL& 211 College Biology
ENGR& 214 Statics
ENGR& 230 Technical Writing (3 cr)
ENGR& 224 Thermodynamics
ENGR 271 Digital Logic
MATH 224 Vector Calculus

Footnotes:

†CHEM139 is a prerequisite for CHEM& 161
‡ CSC 110 is a prerequisite for CSC/ENGR 142

SAMPLE COURSE PLAN

By starting in the Fall and taking a full-time load, students may complete the curriculum in six quarters, though many students find they need to take summer classes. Certain higher-level classes are only offered once a year, **so 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
- CSC 142 Computer Programming for Engineers
- CHEM& 161 Chemistry I

Third quarter

- CSC 143 Computer Programming for Engineers
- MATH& 153 Calculus III
- PHYS& 221 Engineering Physics I

SOPHOMORE YEAR:

First quarter

- Distribution Requirement (5 credits)
- MATH 238 Differential Equations
- PHYS& 222 Engineering Physics II

Second quarter

- ENGR& 204 Fundamentals of Electrical Engineering
- PHYS& 223 Engineering Physics III
- ENGR& 220 Linear Algebra
- ENGR& 214 Statics

Third quarter

- Distribution Requirement (5 cr)
- Distribution Requirement (5 cr)
- MATH 224 Vector Calculus
- ENGR& 230 Technical Writing

Updated 10/6/08

__SOUTH SEATTLE COMMUNITY COLLEGE_____

ASSOCIATE OF SCIENCE DEGREE IN COMPUTER/ELECTRICAL ENGINEERING

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.

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: 51 credits					
CHEM& 161	6				
CSC 142 or ENGR 142	5				
CSC 143	5				
ENGR 110	1				
ENGR 116	4				
ENGR& 204	5				
MATH 220	5				
MATH 238	5				
PHYS& 221	5				
PHYS& 222	5				
PHYS& 223	5				
Electives: 15 credits Choose three classes from the list. 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.					
BIOL& 211 College Biology	5				
ENGR& 214 Statics	5				
ENGR& 230 Technical Writing	5				
ENGR& 224 Thermodynamics	5				
ENGR 271 Digital Logic	5				
MATH 224 Vector Calculus	5				

Total Credits Required: 101 **Evaluator**_____ **Date**_____

Updated 10/6/08