Composing a New Electrical and Computer Engineering Program

J.L. Schmalzel, S.A. Mandayam, R.P. Ramachandran, S.H. Chin, and J.H. Tracey
College of Engineering
Rowan University
Glassboro, NJ 08028

Abstract *– We are developing a new electrical and computer engineering program at Rowan University with first graduates expected in 2000. Features include a continuous engineering clinic sequence, a mixture of two- three-, and four-credit courses, and technology focus electives. Project-based instruction is employed as a tool for motivating students and to demonstrate the relevancy of material. Multidisciplinary courses provide the opportunity for students in different disciplines to work together.*

In this paper, we describe a new program developed to meet the challenges of preparing engineers for the next century and to satisfy ABET's Criteria 2000. A unique feature of the program is the clinic sequence. Clinics deliver many of the Rowan engineering hallmarks:

- Hands-on instruction
- Treatment of integrated topics
- Teamwork
- Effective communication
- Multidisciplinary experience
- Entrepreneurship

Condensed ECE program goals include:

- Create effective engineers
- Impart essential ECE knowledge
- Cultivate effective communicators
- Facilitate multidisciplinary discourse
- Extend geographical reach
- Sensitize to contemporary issues
- Stimulate life-long learners

The 128-hour curriculum at a glance:

FIRST YEAR

Freshman Engineering Clinic I	2
Composition I	3
Calculus I	4
Chemistry I	4
General Education I	3
Freshman Engineering Clinic II	2
Computer Science & Programming	4
Calculus II	4
Physics I	4
General Education II	3

SECOND YEAR

Sophomore Engineering Clinic I w/ Composition II	4
Engineering Analysis I	4
Physics II	4
Statics	2
Network I	2
Sophomore Engineering Clinic II w/ Public Speaking	4
Engineering Analysis II	4
Dynamics	2
Network II	2
Digital I	2
Electronics I	2

THIRD YEAR

Junior Engineering Clinic I	3
Systems/Elective	3
Engineering Electromagnetics I	2
Engineering Electromagnetics II	2
Digital II: Microprocessors	2
General Education III (Microeconomics)	3
Junior Engineering Clinic II	3
Systems/Elective	3
DSP	3
Communication	4
Electronics II: VLSI Design	3

FOURTH YEAR

Senior Engineering Clinic I	3
Computer Architecture I	2
Computer Architecture II	2
Software Engineering	3
Elective	3
Technology Focus Elective	3
Senior Engineering Clinic I	3
Seminar: Engineering Frontiers	1
Elective	3
Technology Focus Elective	3
General Education IV	3
General Education V	3