EEN118 - Introduction to Programming 3 credits

	B.S.E.E.		B.S.Cp.E.	B.S.I.S.E.						
EEN	EAN	WCN	ECN	IT	SE					
REQ	REQ	REQ	REQ	REQ	REQ					

2007-8 Catalog Data:	Introduction to computing, problem solving, program design, C++ language fundamentals, and software engineering principles. Software design projects are included.
Prerequisites	: None
Texts:	 C++ programming: Program design including data structures. D. S. Malik, Course Technology inc., ISBN 1418836400, 2006
References:	None
Objectives:	 Introduce the fundamental concepts of computer systems. Provide knowledge and understanding of the fundamentals of programming, algorithms, data, and software engineering.
	 Provide practical knowledge of and ability in C++ programming. Provide hands-on experience in problem solving and software design.
Topics:	 Programming environments Graphical programming in a windowing environment Text-mode programming in a unix environment Programming in C++ Functions, constants, local declarations, recursive design Strings, arrays, objects, pointers Variables, loops Input and output: graphical, iostream, files Programming techniques Structured design: blocks, locality, pure functions Modular design: abstraction, independence Data visualization, interactive graphics and audio Simulation and modelling Searching and sorting, managing data collections Computer and Software engineering Algorithms and specifications Timing: function and algorithm speed estimation and analysis Data representation, types, declarations, scope
Schedule:	150 minutes lecture + 110 minutes lab per week
Professional Component:	Engineering topics: 3 credits, design 2 ¹ / ₂ credits Students design and implement software solutions for a variety of problems.

EEN118: This class is assessed for outcomes G₃, K₆, and K₇.

Significant contributions of syllabus topics to outcomes

Topic 1: Outcome A1 Topic 2: Outcomes A2, B3 Topic 4: Outcome J1 Topic 15: Outcome G3

Contributions to all outcomes

	Outcome		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
a	A1	Mathematics	1	2	2													
	A2	Science and Engineering	1	3	1													
b	B 1	Conduct experiments	0	0	0	0	3	0	2	2	1	0						
c	C1	Design	2	1	1	0	3	3	0	1	4	2	0	0				
d	D 1	Teamwork	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
e	E1	Identify, formulate, solve	1	2	1	0	2	1	1	1	3	1	3	1				
f	F1	Professional and Ethical	0	2	2	2	2	2	0	2	1	3						
g	G 1	Oral Communications	0	0	0	0	0	0	0	0								
	G2	Written communications	2	2	2	2	0	0	2	2	2	2	2					
	G3	Graphical communications	0	0	3	3	3	3	4									
h	H1	Broad education	1	1	1	2	1											
i	I1	Life-long learning	4	4	4	0	0	1	1	1								
j	J 1	Contemporary issues	2	2	2	0	0											
k	K 1	Analog simulation	0	0	0	0	0											
	K2	MatLab	0	0	0	0	0	0	0	0								
	K3	Quartus	0	0	0	0	0	0	0	0								
	K4	ModelSim	0	0	0	0	0	0	0									
	K5	Test equipment	0	0	0	0	0	0	0	0	0							
	K6	Application	4	2	1	0	0	0										
	K7	Programming Tools	4	4	1	1	1	4	2	1	0	0						
	K8	Development tools	0	0	0	0	0											