Syllabus

EEN118 - Introduction to Programming
3 credits

CE program:	Required
EE program:	Required
IT(IT) program:	Required
IT(SE) program:	Required

CatalogDescription: Introduction to computing, problem solving, program design, C++ language fundamentals, and software engineering principles. Software design projects are included.

Prerequisites: None

Texts:
1. C++ programming: Program design including data structures. D. S. Malik, Course Technology inc., ISBN 1418836400, 2006

References: None

Objectives:
1. Introduce the fundamental concepts of computer systems.
2. Provide knowledge and understanding of the fundamentals of programming, algorithms, data, and software engineering.
3. Provide practical knowledge of and ability in C++ programming.
4. Provide hands-on experience in problem solving and software design.
5.

Topics:
1. Programming environments
2. Graphical programming in a windowing environment
3. Text-mode programming in a unix environment
4. Programming in C++
5. Functions, constants, local declarations, recursive design
6. Strings, arrays, objects, pointers
7. Variables, loops
8. Input and output: graphical, iostream, files
9. Programming techniques
10. Structured design: blocks, locality, pure functions
11. Modular design: abstraction, independence
12. Data visualization, interactive graphics and audio
13. Simulation and modelling
14. Searching and sorting, managing data collections
15. Computer and Software engineering
16. Algorithms and specifications
17. Timing: function and algorithm speed estimation and analysis
18. Data representation, types, declarations, scope

Schedule: 150 minutes lecture + 110 minutes lab per week.

ProfessionalComponent: Engineering topics: 3 credits, design 2.5 creditsStudents design and implement software solutions for a variety of problems.