EEN 118 Introduction to Programming
3 credits
Required for EE and CE

Course Instructor or Coordinator: Stephen Murrell 3rd June 2013


Other supplementary material:
a. Class web site, http://rabbit.eng.miami.edu/class/een118

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Prerequisites or co-requisites: None

Specific outcomes of instruction: The student will:
1. Understand the fundamental concepts of computer systems.
2. Know and understand the fundamentals of programming, algorithms, data, and software engineering.
3. Be able to program in C++.
4. Have hands-on experience in problem solving and software design.

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