

THIS IS A REFERENCE SYLLABUS DESCRIBING AN NKU COURSE IN GENERAL. ENROLLED STUDENTS SHOULD CONSULT THE ACTUAL SYLLABUS OF THE COURSE IN WHICH THEY ARE REGISTERED.

## INF 120 Elementary Programming

### CATALOG DESCRIPTION:

**INF 120 Elementary Programming (3,0,3)** An elementary introduction to programming for those with no previous programming experience. Emphasis on understanding how to read and write basic procedural programs, and on understanding the concepts of algorithm and execution. PREREQ: A grade of C or better in MAH 099 or equivalent.

**Note:** The language used in this course is currently open. To date it has been taught in:

- **Python** (media computing using the *Jython Environment for Students* from the Georgia Tech curriculum).
- **C++** (a simple procedural subset; previously required for pre-engineering majors)
- **Java**

**LAST TAUGHT:** Spring 2009 (T. Cady, Y. Hu, K. Kirby, V. Uti)

**SCHEDULED LAB USAGE:** One class period per week

### STUDENT BACKGROUND EXPECTATIONS:

1. Familiarity with basic algebraic manipulation and the ability to solve single linear equations.
2. Experience with mathematics sufficient to understand basic abstractions such as the notion of a variable and a function.

### CORE TOPICS COVERED:

- Concepts: Algorithms, pseudocode, code, data, operating system, and applications software.
- Overview of computer hardware (CPU, memory, storage)
- Data types, including (at least) integers, reals, and strings.
- Counting loops / iteration (for)
- While loops
- Decisions (if / else if / else )
- Functions / procedures: parameter passing and return values
- One dimensional arrays

### MOST RECENT TEXTBOOK USED :

Python:

*Introduction to Computing and Programming in Python: A Multimedia Approach*, M. Guzdial (Prentice Hall, 2005).

C++:

*Starting Out in C++: From Control Structures Through Objects* (6<sup>th</sup> Ed, T. Gaddis (Addison-Wesley, 2008).

### SOFTWARE REQUIRED:

Python: JES (Jython Environment for Students). Free [multiplatform]

C++: Visual C++ 6.0 [Windows]. Free to students.

Java: JDK 1.6, JCreator [Windows]. Free.

### STUDENT WORK

Weekly pass/fail in-class lab exercises; take-home individual programming assignments; in-class tests and final.

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### **LEARNER OUTCOMES**

Students will be able to...

1. Express the solution of simple problems in the form of an algorithm.
2. Explain where and why software is deployed in consumer and professional devices.
3. Trace the execution of simple and well-written computer programs in the programming language they have studied.
4. Write short, simple, clear, single-file computer programs given an English description of requirements, making use of appropriate data types and control flow constructs, including functions.
5. Begin the study of a second programming language, including a scripting language, at an accelerated pace.
6. Begin the study of object-oriented programming at an accelerated pace.

### **CROSS-LISTINGS**

None