Introduction to Computer Programming—Visual Basic
CS 0004
3 Credits

Description: This is a first course in computer science designed to be of special interest to students majoring in one of the social sciences or humanities. The objectives of this course are to use the computer in an interactive environment to analyze problems, to develop algorithms, to learn the Visual Basic language, to design code and to document programs using techniques of good programming.

Prerequisite: One year of high school algebra is a prerequisite.

Grading: The grade is determined by the student’s performance on programming assignments, two examinations, and a comprehensive final exam.


The following topics are covered in the University of Pittsburgh CS 0004 course:

1. General
   - Introduction:
     - Hardware
     - Software
     - Operating Systems
   - Problem Solving:
     - Analysis of problems
     - Development of algorithms
     - Flowcharts
     - Pseudo-code
     - Hierarchy charts
   - Programming Styles
     - Procedural
     - Object Oriented
   - Ascii values
   - Order of Operations
   - Operators:
     - Arithmetic
     - Relational
     - Logical
   - Decision statements:
     - If-Then
     - If-Then-Else
     - If-Then-Else-If
     - Select-Case
   - Loops:
     - For/Next
     - Pretest/Posttest with:
       - Do/While loops
       - Do/Until loops
     - Sentinel vs. Counting
   - Arithmetic Functions
   - Arrays:
     - 1-Dimensional
     - 2-Dimensional

2. Programming Concepts
   - Syntax
   - Data types
   - Variables and Constants
     - Class Level
     - Local
2. Programming Concepts (cont.)
- Strings and string manipulation:
  - Functions & Methods
- Formatting output:
  - FormatNumber
  - FormatCurrency
  - FormatPercent
  - Zone Formatting
- Simple file operations:
  - StreamReader
  - StreamWriter
- Sequence Search
- Simple sorting
- Documentation
- Counters and Accumulators
- Label
- TextBox
- Button
- GroupBox
- ListBox
- CheckBox
- RadioButton
- Placing objects
- Property Sheet and properties
- IDE
- Event-driven paradigm
- Debugging
- Focus
- Font style and size
- Menus
- Folders & files structure
- Simple graphics
- Scope of variables
- Option Explicit/Option Strict
- Multiple forms

3. Visual Basic Concepts
- Form design
- ToolBox objects

Additional course credit information for CS 0004:

At the University of Pittsburgh:
Course credits can count in three ways: toward the requirements for a major, toward elective requirements, and/or toward the total number of credits needed to graduate. For this course
- Majors: As CS 0004 is a preparatory programming course, it does not fulfill a major requirement in Computer Engineering, Computer Science, or Information Sciences (although it provides preparation for the courses needed for those major requirements).
- Electives: Individual Schools and Colleges of the University (such as Engineering, Arts & Sciences, Business, Information Sciences, and so on) have different policies about elective credits and may count this course as an elective. Students interested in studying at the University of Pittsburgh should contact their School/College of interest to see if this course would be counted.
- Graduation: This course’s credits count toward the number of credits needed for graduation.
Academic Integrity: All College in High School teachers, students, and their parents/guardians are required to review and be familiar with the University of Pittsburgh’s Academic Integrity Policy located online at www.as.pitt.edu/fac/policies/academic-integrity.

Grades: Grade criteria in the high school course may differ slightly from University of Pittsburgh standards. A CHS student could receive two course grades: one for high school and one for the University transcript. In most cases the grades are the same. These grading standards are explained at the beginning of each course.

Transfer Credit: University of Pittsburgh grades earned in CHS courses appear on an official University of Pittsburgh transcript, and the course credits are likely to be eligible for transfer to other colleges and universities. Students are encouraged to contact potential colleges and universities in advance to ensure their CHS credits would be accepted. If students decide to attend any University of Pittsburgh campuses, the University of Pittsburgh grade earned in the course will count toward the student grade point average at the University. At the University of Pittsburgh, the CHS course supersedes any equivalent AP credit.

Drops and Withdrawals: Students should monitor progress in a course. CHS teacher can obtain a Course Drop/Withdrawal Request form from the CHS office or Aspire. The form must be completed by the student, teacher and parent/guardian and returned to teacher by deadlines listed. Dropping and withdrawing from the CHS course has no effect on enrollment in the high school credits for the course.