LONDON CAPITAL COMPUTER COLLEGE

Certificate in Computer Fundamentals (105) – QBASIC Programming

Prerequisites: Basic computing knowledge	**Corequisites:** A pass or higher in Certificate in Information Systems or equivalence.
Aim: This course introduces the concepts of programming using the QBasic language. The course covers both theory and practice of computer programming. The course introduces computer programming and problem solving in a programming environment including text editor, language translator and the role of the operating system. Also covered in this procedural high level language is the development of algorithms, flowcharting, documentation, testing and debugging and programming techniques.	
Required Materials: Recommended Learning Resources.	**Supplementary Materials:** Lecture notes and tutor extra reading recommendations.
Special Requirements: This course has a required laboratory component.	
Intended Learning Outcomes:	**Assessment Criteria:**
1. Understand the programming environment. Define programming and differentiate the various programming languages.	1.1 Describe the different programming languages 1.2 Identify how programs are written 1.3 Define source code 1.4 Describe syntax errors 1.5 Define machine code
2. Describe the computer measurement system.	2.1 Describe bits, bytes and words 2.2 Describe memory measurements (bits, bytes, kilobytes, megabytes, gigabytes, terabytes etc.) 2.3 Define decimal, binary, octal and hexadecimal numbering systems 2.4 Define how to convert decimal to binary and vice versa 2.5 Define how to convert octal to binary and vice versa 2.6 Define how to convert hexadecimal to binary and vice versa
3. Demonstrate how the arithmetic and logic unit (ALU) performs arithmetic calculations by adding and shifting.	3.1 Describe the components of the CPU 3.2 Describe the functions of the ALU 3.3 Describe how arithmetic calculations are performed
4. Demonstrate how to solve computer problems using flowchart diagrams.	4.1 Demonstrate how to understand flowcharting symbols 4.2 Demonstrate how to draw flowchart diagrams 4.3 Describe flowcharting and loops 4.4 Define dummy values in programming
5. Demonstrate how to start Qbasic program, create small programs, how to execute, save and retrieve Qbasic programs.	5.1 Identify the main elements of the Qbasic screen 5.2 Identify rules for defining variables 5.3 Describe reserved words 5.4 Identify program errors 5.5 Define how to debug programs 5.6 Explain the PRINT statement

6. Define computer arithmetic. Demonstrate the main processing loop with the concept of input, processing and output.	5.7 Use the CLS, OPEN and CLOSE statements 6.1 Write arithmetic expressions for Qbasic program 6.2 Identify how to use comments in programming 6.3 Demonstrate how to use DO WHILE/LOOP and DO UNTIL/LOOP 6.4 Discuss infinite loops 6.5 Describe how to use READ/DATA statements 6.6 Define a loop
7. Express decision making in programming using IF/THEN and CASE statements.	7.1 Discuss decision-making structures 7.2 Define how to write programs using IF/THEN and CASE structures 7.3 Discuss the difference between different structures 7.4 Explain the nested IF-THEN-ELSE logic structure 7.5 Describe how to use the AND, OR and NOT logical operators 7.6 Demonstrate how to identify program errors
8. Illustrate how to create sequential files. Understand how files are created in Qbasic, how to read from a file and how to write to a file.	8.1 Discuss file names 8.2 Explain the syntax for opening disk files 8.3 Describe how data is written (copied) from memory variables to a disk file 8.4 Identify CLOSE, INPUT, EOF statements

Recommended Learning Resources: QBasic Programming

Text Books	• Qbasic by Example by Greg M. Perry. ISBN-10: 1565294394 • Programming in QBASIC for Engineering Technology by Kenneth Craven. ISBN-10: 0136227481 • Easy Programming With Qbasic by Tory Stephen Toupin. ISBN-10: 1565299957 • Qbasic Programming (Peter Norton Programming Series) by David I. Schneider. ISBN-10: 0136630227
Study Manuals 	BCE produced study packs
CD ROM 	Power-point slides
Software 	QBasic