



## COURSE COMPACT

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**Faculty:** Faculty of Science  
**Department:** Computer & Information Sciences  
**Programme:** B.Sc Computer Science  
**Course Code:** CSC 121  
**Course Title:** Introduction to Problem Solving  
**Units:** 3  
**Course Lecturer:** (1) Prof. C. K. Ayo  
(2) Dr. Akputu O.K.  
(3) Mr. Omosebi Adeoye  
(4) Dr. Falade Adesola  
(5) Mr. Tunde Ayejifo  
**Semester/Session:** Second  
**Session:** 2019/2020  
**Location:** Lecture Room 1 & Computing Lab.

### A. Brief Overview of Course

Role of Algorithms in problem solving process, concepts and properties of Algorithms. Implementation strategies, Development of Flow Charts, Pseudo Codes. Program objects. Program control structures; iterators; functional decomposition and basic data types and variables; Algorithm implementation and problem solving in Visual Basic, C and Python programming Languages.

### B. Course Objectives/Goals

At the end of this course, students are expected to:

- Have a good understanding of computer problem solving methods.
- Have a good understanding of algorithm formulation and application.
- Understand the application of pseudo-codes and flowcharting.
- Understand the various program design methods.
- Know how to approach a programmable problem using any of Visual Basic.Net, C and Python Programming languages.

### C. Methods of Lecture Delivery/Teaching Aids

- Lecture Delivery Methods
  - Interactive classroom session
  - Individual assignments
  - Lecture notes

- Teaching Aids
  - Multimedia projection
  - Computer Laboratory

## **D. Course Outlines**

### **Module I**

**Convener: Mr. Omosebi P.A.**

**Week 1:** Overview of problem solving and programming.

**Week 2&3:** General problem solving methods: Steps, algorithms, pseudocodes, with examples.

### **Module II**

**Convener: Prof. C.K. Ayo**

**Weeks 4 & 5:** Program design approached and methods: Top-down, Bottom-up, Modular programming and subroutines.

- Continuous Assessment 1 (5%)

**Tutorials by :** Mr. Tunde Ayejafo-Lab Technologist.  
Further discussions/Examples/Exercises.

### **Module IV**

**Convener: Mr. Omosebi P.A.**

**Week 6 &7:** Program control structures; iterators; functional decomposition and basic data types and variables; Visual Basic Programming, Syntaxes, Forms design, Database creation, GUI and Applications with code examples.

- **Continuous Assessment 3 (5%)**

**Tutorials by :** Mr. Tunde Ayejafo-Lab Technologist.  
Further discussions/Examples/Exercises.

### **Module V**

**Covener: Dr. Akputu O.K.**

**Week 8 & 9:** Overview of C programming language constructs, Syntaxes; compilation process, Semantic errors, problem-solving exercises and solutions.

- **Mid-Semester Test (10%)**

**Tutorials by :** Mr. Tunde Ayejafo-Lab Technologist.  
Further discussions/ C Implementation solutions to VB problems on Week 6 &7

**Module VI**

*Convener: Dr. Falade*

**Week 8 & 9:** Overview of Python programming language constructs and syntaxes; simple problem-solving applications.

- **Assignment (10%)**

*Tutorials by* : Mr. Tunde Ayejafu-Lab Technologist

- Further discussions/ Python Implementation solutions to VB, and C programs of Week 6,7,8 &9.

**Continuous Assessment Two (CA2)**

**E. Structure of the Programme/Method of Grading**

• Continuous Assessment	
○ Class test	20% Marks
○ Assignment	10% Marks
• Examination	70% Marks
<b>TOTAL</b>	<b>100%</b>

**F. Ground Rules & Regulations**

- 75% attendance is required to sit for the examination.
- Assignments must be submitted as at when due.
- Contributions to group discussion and class work are noted.

**G. Topics of Term Papers/Assignment/Student Activities**

- Individual Project on Configuration, Administration and Security.

**H. Contemporary Issues/Industry Relevance**

Software systems drive applications in the world today. Thus, Software developers are in high demands in all fields of human endeavor such as Banking and Finance, Aviation, Education, Commerce, Military and several others. Therefore, this course is supposed to arouse the interest of students and lay a solid foundation for problem-solving methods as well as programming. Students shall be given programming assignments across the various sectors of the economy.

**I. Recommended Reading/Texts**

- a. C. K. Ayo (2003). Introduction to Programming with Qbasic. Concept Publications, Lagos.
- b. C. K. Ayo, A. Adebisi, A. Falade, A. Adewumi (2018). Fundamentals of Computer Programming with VB.Net, McKay Educational Series, Lagos.

- c. C.K Ayo (2001) Information Technology: Trends and Applications in Science and Business, Concept Publications, Lagos.
- d. Practical Python Design Patterns Pythonic Solutions to Common Problems  
Wessel Badenhorst. Apress.
- e. Problem solving and program design in C. JeriR.Hanly and Elliot B. Koffman.  
Addison Wesley

### **Online Materials**

- Visual Basic Programming: An Introduction  
<http://cs.baylor.edu/~maurer/aida/desauto/vbasic.pdf>
- VB.NET Programming Language Reference  
[https://www.tutorialspoint.com/vb.net/vb.net\\_tutorial.pdf](https://www.tutorialspoint.com/vb.net/vb.net_tutorial.pdf)
- Programming Visual Basic .NET  
[https://www.visualchart.com/ContentManagement/Development/Manuals/EN/vbNet\\_programming.pdf](https://www.visualchart.com/ContentManagement/Development/Manuals/EN/vbNet_programming.pdf)
- VB.Net Programming Tutorial <https://www.tutorialspoint.com/vb.net/>
- Tutorial: Get started with Visual Basic in Visual Studio  
<https://docs.microsoft.com/en-us/visualstudio/get-started/visual-basic/tutorial-console?view=vs-2019>.
- Rich study site for Python here: <https://www.w3schools.com/python/default.asp>