



Bahir Dar University

Bahir Dar Institute of Technology

Faculty of Computing

Department of Computer Science/ Information Technology/

Information Systems/Software Engineering

Computer Programming Course Guide Book

1. Course information						
Course Title	Computer Programming					
Course Code	ECEG1052					
Credit Hrs/ ECTS	Cr Hrs.=3	L=2	T=3	P=0	H=5	CP = 5
Semester	II					
Year	I					
Pre-Requests	None					
Target Group	All First year Students					
Status of The Course	Common					
Instructor's Information	Full Name					
	Address					

2. Course Description:

This course is assumed to be the first course in programming. It starts by introducing basic operators and expressions. It then continues introducing the background of programming languages and programming language paradigm. The course mainly emphasizes on basic components of a high-level language and developing a skill on the usage of those components. At the end of this course, students will be able to answer at least the following questions.

What are the mechanical steps involved in solving problems by using computers? What are the common programming paradigms and their differences? Identify the advantages of high-level languages? What are the basic issues in language translation? What is a C++? What are the different parts of a c++ program? What are primitive data types? How do we define our own data types? What procedures should we follow in type conversion? List the different operators in c++? What precedence rules are applied on operators in C++? In what situations we use control statements?

Break statements? How to write an algorithm and pseudo code for a given problem? How to define functions and inline functions? How to overload functions? Identify the basic variable scopes? What is the difference between passing variables by value and by reference? What are arrays and pointers? How to implement them? Show some of their applications? What are streams? How to implement a code to write/read data onto/from a file?

3. Course Objective:

At the end of this course, students should be able to:

- Explore components and functions of personal computer
- Know how to use programming languages to develop applications.
- Develop the skill to write C++ code.
- Analyze variety of problems and generate appropriate algorithmic solutions
- Explore the syntax and usage of a high-level programming language
- Examine the software development environment and associated tools.

4. Methodology:

The primary teaching method in this class is enhanced lecturing. In addition to explaining/lecturing topics in the course material, class works, exercises, and assignments will be given to the students. This course has also a three-hour laboratory session per a week. In their lab sessions, students will be given examples and exercises on basic programs, variables, loops, conditional programming, arrays, pointers, and file processing.

Software Requirements: C++ Compiler

5. Final Schedule of Lecture Topics and Readings

Date	Topics (Conceptual Focus)	Teach. Meth	Readings/Assignments
Week 1 & 2	Introduction to programming • Programming language short history • Programming Languages • Software development life cycle • Language paradigms (Classifications) • Language Translation and Interpretation.	Lec, Group discussion	Hand out will be given and C++ how to program, 5 th edition
Week 3	Problem solving methods • Pseudo code • Flow chart	Lec, Group discussion	Hand out will be given and C++ how to program, 5 th edition • Group Assignment

Week 4,5 & 6	C++ basics: Structure of C++ program Key words, identifiers, inputs-outputs comments Data types variables and constants Operators • Assignment operators • Compound assignment operators • Arithmetic operators • Relational operators • Increment and decrement operators • Infix and postfix types • Precedence of operators	Lec, lab	C++ how to program, 5 th edition Thinking in c++ Quiz/Test
Week 7 & 8	Loops and Decisions: Conditional statements • If statement: if---else, nested if • Switch statements: multiple cases, break, default	Lec, lab	C++ how to program 5 th ed. Thinking in c++
MID-EXAM WEEK			
Week 10 & 11	Looping: • For, while, do-while Control Transfer Instructions • Continue, Break, go to	Lec, lab	C++ how to program 5 th ed. Thinking in c++
Week 12 & 13	Functions: • Introduction • Defining Functions • Scope of Variables • Calling Functions • Passing Variables by value and by reference	Lec, lab	C++ how to program 5 th ed. Thinking in c++ Lab. Exam (Individual)
Week 14 & 15	Arrays • Introduction to array • Implementing array • Multidimensional array	Lec, lab	C++ how to program 5 th ed, Thinking in c++

6. *Laboratory Exercises:* Assessments and Grading Policy:

Continuous assessment will be made on the activities, assignments, Lab works and attendances; up on which the students engage.

6.1. Summary of Course assignments, Test and Exam:

Evaluation type	Weighted Mark (%)
Group Assignment	10%
Quiz/Lab.Exam/Individual	10%
Mid-Term Exam	30%
Final Examination	50%
Total	100%

6.2. Course Policy:

All students are expected to abide by the code of conduct of students (article 166 and 166.1.1, of The Senate Legislation of Bahir Dar University May 20, 2005) throughout this course. Academic dishonesty, including cheating, fabrication, and plagiarism will not be tolerated and will be reported to concerned bodies for action. If you need to read it you can get a copy (to be copied by your self) of it from your academic advisor.

Class activities will vary day to day, ranging from lectures to discussions. Students will be active participants in the course. You need to ask questions and raise issues. I expect you to do all the assignments you are supposed to accomplish. You are required to submit and present the assignments provided according to the time table indicated. I'll give out the directions, if I find necessary, for the assignments one week prior to their due date though they are explained at each content of your course guidebook.

Note on class attendance and participation: You are expected to attend class regularly. I will take attendance on random days during the semester to ensure that students are coming to class, and if you miss class repeatedly, your grade will be affected. If you miss more than 85% of the class attendance you will not sit for final exams. Please try to be on time for class. I will not allow you enter if you are late more than five minutes. I will often ask questions during my lectures and active participation in class is essential

Cell phones: Cell phones MUST be turned off before entering the class as they are disruptive and annoying to all of us in the class. So please make sure your cell phone is turned off before entering the class. You are responsible for all class announcements and changes.

All issues discussed in class or derived from other sources (where I provided you to read) may be the subject of assignment or final exam question items. Please follow the instructions indicated at each content of your course guidebook to complete all the assignments provided whether they are to be performed individually or in group.

7. Reference Materials:

7.1. Text Books:

Thinking in C++, 4th Edition (Sunil K. Pandey GTBP1, New Delhi)

C++ How to program, Fifth Edition (By H. M. Deitel - Deitel & Associates, Inc., P. J. Deitel - Deitel & Associates, 2005)

7.2. References:

The C++ Programming Language, third edition (Bjame Stroustrup, Addison Wesley, 1997)

Approved By: -

Full Name

signature

Date

Chair Holder: -

Department Head: -
