



# Course Specifications

<b>Course Title:</b>	Introduction to Programming
<b>Course Code:</b>	1004-102
<b>Program:</b>	N/A
<b>Department:</b>	Computer Science
<b>College:</b>	Deanship of Preparatory & Supportive Studies
<b>Institution:</b>	Northern Border University

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## A. Course Identification

<b>1. Credit hours:</b>	<b>3 Hours</b>
<b>2. Course type</b>	
a.	University <input checked="" type="checkbox"/> College <input type="checkbox"/> Department <input type="checkbox"/> Others <input type="checkbox"/>
b.	Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
<b>3. Level/year at which this course is offered:</b>	
<b>4. Pre-requisites for this course (if any):</b>	Computer Skills 1004-101.
<b>5. Co-requisites for this course (if any):</b>	N/A

### 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	3	100%
2	Blended	---	---
3	E-learning	---	---
4	Correspondence	---	---
5	Other	---	---

### 7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
<b>Contact Hours</b>		
1	Lecture	15
2	Laboratory/Studio	30
3	Tutorial	---
4	Others (specify)	---
	<b>Total</b>	45
<b>Other Learning Hours*</b>		
1	Study	30
2	Assignments	20
3	Library	6
4	Projects/Research Essays/Theses	10
5	Others (specify)	---
	<b>Total</b>	66

\* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

## B. Course Objectives and Learning Outcomes

<b>1. Course Description</b>
This course discusses the main concepts of computer systems (such as binary, octal, decimal, and hexadecimal), and provides manners to solve problem by computer including algorithm, flowcharting, pseudocode. Besides, it allows the students to develop their knowledge and skills in C++ programming language through covering the most significant concepts.
<b>2. Course Main Objective</b>
This course aims to learn the students who have no previous background in computer programming and develop their basics skills in C ++ language and their ability to solve the problems in a logical manner, through designing, writing and checking symbols.

### 3. Course Learning Outcomes

CLOs		Aligned PLOs
<b>1</b>	<b>Knowledge:</b>	
1.1	Understanding the numbering systems and the conversion from one system to another accordingly.	N/A
1.2	Representing the problem by writing the algorithm, pseudocode and flowcharts and mapping it to executable C ++ code.	N/A
<b>2</b>	<b>Skills :</b>	
2.1	Distinguish between numbering systems.	N/A
2.2	Write algorithms, pseudocode, flowcharts and C++ code.	N/A
<b>3</b>	<b>Competence:</b>	
3.1	Analyze the problem and map it to clear steps to find the best solution.	N/A

### C. Course Content

No	List of Topics	Contact Hours
1	Computer Fundamentals (Number Systems, Logic Gates, System Software)	9
2	Techniques of Problem Solving, Algorithm, Flowcharting, Pseudo code.	9
3	Basics of C++ of Programming Language.	12
4	Decision making and Loop Control Statements in C++.	15
<b>Total</b>		<b>45</b>

### D. Teaching and Assessment

#### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge</b>		
1.1	Understanding the numbering systems and the conversion from one system to another accordingly.	Lecture Open discussion Cooperative learning	Quizzes Midterm exam Homework Final exam
1.2	Representing the problem by writing the algorithm, pseudocode and flowcharts and mapping it to executable C ++ code.		
<b>2.0</b>	<b>Skills</b>		
2.1	Distinguish between numbering systems.	Lecture Cooperative learning Practical applications	Homework Midterm exam Final exam Project
2.2	Write algorithms, pseudocode, flowcharts and C++ code.		
<b>3.0</b>	<b>Competence</b>		
3.1	Analyze the problem and map it to clear steps to find the best solution.	Problem solving Open discussion Practical applications	Homework Practical exam Final exam Project

## 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Home works.	7 <sup>th</sup> week	5
2	Quizzes	6 <sup>th</sup> , 12 <sup>th</sup> weeks	10
3	Mid-term test	8 <sup>th</sup> week	20
4	Project	13 <sup>th</sup> week	10
5	Practical test	14 <sup>th</sup> week	15
6	Final test	15 <sup>th</sup> week	40

\*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

**Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :**

Office Hours.

Academic Advisor for Students.

Blackboard Forum.

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	Introduction to Programming-By: Computer department with the Deanship of preparatory year and supportive studies,(2018)
<b>Essential References Materials</b>	Busbee, Kenneth Leroy, and Dave Braunschweig. "Programming Fundamentals: A Modular Structured Approach." (2018).
<b>Electronic Materials</b>	Blackborad
<b>Other Learning Materials</b>	Digital library of Northern border University

### 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	Computer Labs
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	Data show, Smart Board, Blackboard
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	N/A

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching.	Students.	Direct.
Effectiveness of assessment.	Students, Faculty, Program Leaders.	Direct, Indirect.
Quality of learning resources.	Students, Faculty, Program Leaders.	Direct, Indirect.

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

Council / Committee	Computer Science Department
Reference No.	4 <sup>th</sup>
Date	13/07/1443 H