هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023

TP-153

Course Specification

(Bachelor)

Course Title:	Programming Fundamentals
Course Code:	CS101
Program:	Computer Science
Department:	Computer Sciences
College:	Faculty of Computing and Information Technology
Institution:	Northern Border University
Version:	3
Last Revision Date:	October 14, 2024

جامعة الحدود الشمالية
عمادة القبول والتسجيل
DEANSHIP OF ADMISSION & REGISTRATION
NBU
NORTHERN BORDER UNIVERSITY

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A. General information about the course:

1. Course Identification

1. Credit hours: (3)					
2. Course type					
A.	☐ University	☒ College	☐ Department	☐ Track	☐ Others
B.	☒ Required		☐ Elective		
3. Level/year at which this course is offered: (Level 2 / Year 1)					
4. Course general Description:					
This course helps students to develop basic problem-solving skills using an Object-Oriented programming language. The topics includes API, IDE, JDK, numerical Data, primitive data type, shorthand operators, cast value of one type to another type, selection statements, switch statements, break and continue statements, relational operators, logical operators, logical expressions, Boolean variable, Boolean expressions, repetition statements, nested loops, methods, arrays. Course lab work includes implementing basic programs in an object-oriented programming language.					
5. Pre-requirements for this course (if any):					
Nil					
6. Co-requirements for this course (if any):					
Nil					
7. Course Main Objective(s):					
Students will study the basic concepts in object-oriented programming languages, such as variables, input and output instructions, control statements, loops, methods and arrays. In addition, students will study how to analyze and solve basic problems and implement their solutions					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	4	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	30
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		60

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Recognize basic programming language concepts	K1	Observation	Written exams (essay) – Oral exams
2.0	**Skills**			
2.1	Implement basic programming logic, including variables, arithmetic, selections, and iterative loops.	S1, S2, S3	Problem-based learning, Lab-based learning	-Writing exam (essay) – Objective - Structured Practical Examination (OSPE) –Laboratory Exams.
2.2	Write programs with reusable code in methods.	S2	Problem-based learning, Lab-based learning	Writing exam (essay) – Objective - Structured Practical Examination (OSPE) –Laboratory Exams.
2.3	Manipulate single-dimensional and multi-dimensional arrays.	S2	Problem-based learning, Lab-based learning	Writing exam (essay) – Objective -

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
				Structured Practical Examination (OSPE) –Laboratory Exams.
2.4	Manipulate IDE (Integrated Development Environment) for editing, compiling, running, and debugging programs.	S3	Lab-based learning	Writing exam (essay) – Objective - Structured Practical Examination (OSPE) –Laboratory Exams.
2.5	Demonstrate problem-solving techniques in a programming environment.	S1, S2	Problem-based learning, Lab-based learning	Writing exam (essay) – Objective - Structured Practical Examination (OSPE) –Laboratory Exams.
3.0	**Values, autonomy, and responsibility**			

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction	4
2.	Elementary Programming	7
3	Selections	10
4	Loops	11
5	Methods	11
6	Single-dimensional arrays	12
7	Multi-dimensional arrays	5
Total		**60**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	2-15	5
2.	Assignments	2-15	10
3.	Participation	1-15	5
4.	Labs	1-16	20
5.	Midterm Exam	6-12	20
6.	Final Exam	17-18	40

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	1. Liang, D. Y. (2020). Introduction to Java Programming and Data Structures, Comprehensive (12th ed.). Pearson.
Supportive References	1. Deitel, P. A. D. H. J. (2022). Java How to Program, Early Objects, Global Edition (11th ed.). PEARSON. 2. Wu, T. C. (2009). An Introduction to Object-Oriented Programming with Java (5th ed.). McGraw Hill.
Electronic Materials	1. Blackboard System: https://lms.nbu.edu.sa/ 2. Northern Border University Electronic Library: https://www.nbu.edu.sa/AR/Deanships/Library_Issues 3. Saudi Digital Library (SDL): https://portal.sdl.edu.sa/english/
Other Learning Materials	Nil

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	● Classroom ● laboratories
Technology equipment (projector, smart board, software)	● Data Show (Projectors) in Classroom. ● Desktop computers ● OS: Windows 10 or GNU-Linux ● Software: JRE, JDK, Notepad, Eclipse, NetBeans, JCreator.
Other equipment (depending on the nature of the specialty)	● Nil

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect
Effectiveness of Students assessment	Students	Indirect
Quality of learning resources	Students	Indirect
The extent to which CLOs have been achieved	Faculty	Direct
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	**COMPUTER SCIENCES DEPARTMENT COUNCIL**
REFERENCE NO.	
DATE	

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